



I.M.A.G.S.B. NEWS BULLETIN

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GUJARAT MEDICAL JOURNAL

INDIAN MEDICAL ASSOCIATION, GUJARAT STATE BRANCH

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**STATE PRESIDENT
AND
HON. STATE SECRETARY'S
MESSAGE**



Dear Members,

વસંતના વધામણા...

“ રૂડો જુઓ આ શ્રદ્ધુરાજ આવ્યો, મુકામ તેણે વનમાં જમાવ્યો;
તરવરોએ શણગાર કીધો, જાણે વસંતે શિરપાવ દીધો.....”

India being a democratic country and when parliament in its wisdom has created various systems of medicine as unique fields as per the constitutions and its scheduled degrees can a visa to practice one system can be given by the authority of another system? AYUSH Ministry and the CCIM have jurisdictions for practice AYUSH Medicine, how they are privileged to give direction or amendment to one to practice another domain? Is the CCIM is above the wisdom and authority of parliament ?

Indian healthcare & Indian doctors have earned the peak positions in the world healthcare scenario. IMA is against Mixopathy. Though there are many systems of medicine, Ayurveda, Siddha, Unani etc., the modern medicine has evolved as a system of medicine adopted system of medicine used by almost 96% of Indian population based on sustained research & constant upgradation. We welcome & propose that all our traditional systems should strive hard & make themselves more people centered & evidence based. Now there is shift in the government policy; instead of promoting the systems, a new method of Mixopathy, in which systems which are mutually unrelated in principles & mode of operandi are integrated together as a one system. IMA acknowledge Indian population may need different systems of medicine for different conditions of diseases. However, we oppose strongly the proposal to make single doctor practicing all systems together. IMA has launched the freedom struggle of modern medicine from the forces of Mixopathy. IMA appeals to the Government to consider the sensitivity of the medical fraternity and take appropriate steps & also to ensure purity of various system of medicine, enhance research to unearth the depth of traditional Ayurveda system and develop surgical principles and procedures akin to Avurveda, empower teaching milieu and manpower in Ayurveda before making halfhearted attempt to produce partially trained Mixopathy surgeons and play on the health of our country.

IMA is constrained today to intensify the agitation as the steps towards implementing Mixopathy are not being taken back. Indian Medical Association has given immediate directives to all members across the country to start 'SAVE HEALTHCARE INDIA MOVEMENT'. Under this National movement, IMA has launched massive awareness drive across the country as this is the clear threat to safety of healthcare of people. **Pan India Relay Hunger Strike** - IMA members & modern medicine doctors across the country has done relay hunger strike from February 1, 2021 to February 14, 2021. Under this call, various local branches of IMA GSB has organised IMA Relay Hunger Strike and Protest during this period. From 1 to 3 February, Ahmedabad ; 4 February, Kalol; ,5-6 February, Surat; 7 February Himatnagar and Mehsana; 8-9 February, Vadodara; 10 February, Rajkot; 11-12 February, Jamnagar; & 13-14 February, Bhavnagar has organised successfully. About 20 IMA members from State has participated in Hunger Strike at IMA HQ, New Delhi on 13-14 February.

The global voice of modern medicine shall echo the feelings of Indian Medical Association and its all members. Medical Students' Network (MSN), Junior Doctors' Network (JDN), IMA Womens' Wing, IMA Hospital Board, In-service Doctors, Medical Colleges has participated & constructed this massive National Movement. IMA will fight this war for safeguarding healthcare of our country. Now it is peoples' war to save quality & safety of our healthcare IMA begins its 'SAVE HEALTHCARE INDIA MOVEMENT'.

Long Live IMA, Jai IMA

DR. DEVENDRA R. PATEL
(President, G.S.B.I.M.A.)

DR. KAMLESH B. SAINI
(Hon. State Secy. G.S.B.I.M.A.)

FROM THE DESK OF EDITORS



Dear friends,

We regret that this issue of Gujarat Medical Journal (GMJ) is published two months late, instead of December 2020 in February 2021. IMA is agitating against Mixopathy and we wanted to convey the protest activities against government policy to you through our news bulletin.

We are thankful to all the central council members of GSB IMA for putting their faith, trust and confidence in us and giving the charge of prestigious Gujarat Medical Journal (GMJ) for this year. On our side, we promise to see that the faith and trust that is put in us is full filled and for that, we shall try our best.

Here, I want to tell our members about the procedure that we are adopting in selection of an article for GMJ. We ask the author to send the article on CD, and three physical copies, of which one copy bears names, addresses, etc., of authors but two other copies, don't have any name or address of authors, they contain only the material of the article. On receiving this our office clerk puts code number on it. Articles are known from its code number only. GMJ editor is given the copy which doesn't have the name, etc. of the author. And editor then sends the said article for review to a retired professor or HOD or having that level of expertise in the subject (whom we call "referee" or "reviewer"). So the reviewer also doesn't know about the author. This procedure is adopted since years.

Our country and particularly, Gujarat has entered in the field of medical tourism. People from developed and under developed countries come here for treatment and we provide world best treatment to them at a cheaper rates than that is available in developed countries. Our hospitals and expertise are world class and that pushes the medical tourism in Gujarat far ahead. From our own domestic population also we get large number of patients. Now we have more than a dozen medical colleges (and few new will start functioning from next year). Many of them are in smaller towns also. That will help us in collecting data from urban and rural areas. This provides opportunities for research to our doctors. Now we have better infrastructure facilities for data collection and access to world data, for comparison. It has provided a big boost to research work in our state. We appeal our colleagues to send their research articles and papers for publication in GMJ. This will help our other colleagues and also government in handling and controlling certain diseases. Government will also be able to determine where more efforts are required.

Without making any compromise with our laid down policy, we have made all the efforts to make GMJ more informative, more interesting and more popular so that large number of our colleagues read it and utilize the knowledge and information provided in it. For this, we welcome your suggestions and comments also.

Our sincere thanks to GSB president Dr. Dr. Devendra Patel and hon. secretary Dr. Kamlesh Saini for encouragement and suggestions, and giving us free hand in publication of this journal. We are grateful to them. We are also grateful to GSB past presidents Dr. Kirtibhai Patel, Dr. Jitubhai Patel and Dr. Mahendrabhai Desai for their guidance and help. How can we forget IMA GSB past president Dr. Yogendra Modi for his help, guidance and support? We are also thankful to our ex editor Dr. Amit Shah and also to Dr. Urvesh Shah (GCS Medical college) for their guidance and help.

With regards,

DR. K. R. SANGHAVI
Editor-IMA-GSB-GMJ

DR. B. I. PATEL
Hon. Secretary -IMA-GSB-GMJ

DR. HARSHAD C. PATEL
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IMA COVID MARTYRS FUND

Following Doctor's / NGO have donated generously towards **IMA COVID MARTYRS FUND** Payment already received by IMA HQ, New Delhi

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* * * * *

N.B. :

- (1) Those who have committed are requested to transfer the fund amount.
- (2) If you have paid already then please intimate to

IMA GSB office with details -

Name, Payment Receipt & PAN No.

E-mail : imagsb@gmail.com

Whatsapp : 98250 62381

* * * * *

OBITUARY

We send our sympathy & condolence to the bereaved family



Dr. Tanumati G. Shah

(21-12-1922 - 08-02-2021)

Age : 99 year
Qualification : MD. Gynec
Name of Branch : Ahmedabad



Dr. Pratapray G. Pandya

(14-04-1938 - 1-1-2021)

Age : 83 year
Qualification : MBBS
Name of Branch : Gandhinagar

We pray almighty God that their souls rest in eternal peace.

I.M.A. G.S.B. NEWS BULLETIN (Gujarat Medical Journal)

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INDIAN MEDICAL ASSOCIATION GUJARAT STATE BRANCH

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A-11/HFC/LM/2021-2022

Date: 2-2-2021

Dear Branch Secretary

I hope that this circular finds you in the best of health and spirit. In continuation of my circular A-11/HFC/LM/2021-2022, further tabulated information is given below for the revision of fees effective from 1/4/2021. Herewith I am sending the copy of I.M.A. H/Q fee schedule regarding revised fees.

Local branch share to be collected extra as per individual branch decision/resolution. Kindly note that fees at Old Rates will be accepted up to 31-3-2021 only at State Office. Thereafter the new revised rates will be applicable.

LIFE MEMBERSHIP FEES

CATEGORY	TOTAL FEES	BR. SHARE	ADM. FEES INCLUDING GSB. IMA	TO BE SENT TO GSB. IMA
Single	10915-00	800-00	{ 20-00 }	Rs. 10105-00
Couple	16154-00	1250-00	{ 30.00 }	Rs. 14904-00

I.M.A. COLLEGE OF GENERAL PRACTITIONERS

College of G.P	Rs. 2000-00	Life Membership
Membership Fees along with Life Subscription of Family Medicine DD in favour of "IMA CGP HQ"		
Payable at Chennai and send to us		

Membership Fees by a D.D. drawn in favour of "G.S.B. I.M.A". The above increase of fee Rs. 50.00 in Life Member every year is computed as per the resolution passed in 41st State Council at Nadiad on 12/05/1989.

Yours Sincerely
(Dr. Kamlesh B. Saini)
Hon. State Secretary

Original Articles

Screening of Donated Blood for Transfusion Transmitted Infections By Serology and Response Rate to Notification of Reactive Results : A Tertiary Care Institutional Experience

Dr. Rohit V. Bhalara*, Dr. Payal Shah**, Dr. Ravi K.Kothari***, Dr. Amit H. Agravat****, Dr. Gauravi Dhruva*****

*Associate Professor, **Assistant Professor, ***2nd Year Resident, ****Associate Professor Professor & Head of Department, Department of Pathology, Pandit Dindayal Upadhyay Medical College, Rajkot

Keywords: Donor counselling, TTI, notification, ELISA

ABSTRACT

Background : Safety for blood Transfusion begins with healthy donors. A basic part of preventing transfusion transmitted infections (TTIs) is to notify and counsel reactive donors. This study analysed trends in the prevalence of transfusion-transmissible infectious pathogens among blood donors and notify them as well as to assess response rate among them. Donor notification and counselling protect the health of the donor and prevent secondary transmission of infectious diseases.

Methods : 38707 blood donations were screened for TTIs, namely, HIV, HBV, HCV, and syphilis, by serology. ELISA testing for anti-HIV, anti-HCV and HBsAg and RPR test for syphilis. All reactive donors were retested in duplicate and notified of their status by communicating through telephone.

Result : We evaluated 329 (0.85%) cases with reactive screening test results (0.617% HBV, 0.016% HCV, 0.134% HIV, and 0.08% syphilis). Only 52.58% of donors (173) responded to notification. The response among voluntary donors was better as compared to the replacement donors (53.61 % versus 40.0 %). Only 99 (57.22%) responsive donors followed their first attendance at referral clinic.

Conclusion : Our study provides prevalence rate of TTIs among donors and importance of proper donor counselling and notification of TTI status to all reactive donors who opt to receive this information.

INTRODUCTION

Although blood transfusion can be a life saving type of therapy for medical and surgical patients, unsafe transfusion practices can put millions of people at risk of transfusion transmitted infections (TTIs).^[1-3] The safety of the blood supply can be estimated by monitoring the prevalence of TTI markers in the donor population. Blood transfusion is safer than ever before through continuous improvements in donor recruitment, screening, testing of donated blood with increasingly sensitive assays, and appropriate clinical use of blood.^[4] Serologic testing for transfusion transmitted diseases had historically been the foundation of blood screening.^[5] Moreover, threat of infectious agents entering the blood supply is not static and may evolve as new pathogens emerge or as old ones change their epidemiological pattern.^[6] Under present scenario in India, during pre-donation counselling process, post donation care and the outcomes of donation are explained. After blood donation, samples are

collected for screening for anti-HIV-1/2, anti-HCV, and HBsAg, RPR for syphilis, and slide/card test for malaria.

In 2002, the Government of India adopted the National Blood Policy "An action plan for blood safety" to ensure safe blood supply. This policy advocates notification to all reactive blood donors. Blood banks are thus now required to obtain written consent from donors at time of donation for screening blood for TTI (Transfusion-transmitted Infections) and whether they wish to be informed about their abnormal tests results.^[7] Most blood banks discard blood that is TTI reactive but do not notify donors of their TTI status due to a lack of resources and trained counsellors.^[8]

In our study If any of the screening tests are abnormal, before notification to the donors the tests are repeated using two assays of differing principles and in duplicate with the same assay so as to avoid notification of false-positive results.

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Blood donors with reactive screening test results are informed by telephone call are requested to come for counselling and referred to integrated counselling and testing center (ICTC) for HIV and medicine and STD clinic for HBV/HCV and syphilis, respectively, for counseling, confirmatory testing, and management. Although the blood policy advocates disclosure of TTI status, donors are not, in practice, informed about their results. The onus lies with the donor to contact the blood bank So counselling, testing, and notification together form the vital link between the donor and safe blood.^[8]

As most of the donors do not expect to hear that they have reactive results they may become extremely distressed to hear this news. These donors may be highly motivated to donate, having desire to help others, or simply want some time off work or may have other motives. This, unfortunately, may leave the donor with a negative feeling towards blood donation or diminish his/her own self-worth.^[9,10] On the other hand, a small minority of individuals appear to ignore notification and continue to donate blood elsewhere.

Donor notification can therefore be a challenging task demanding special skills from the staff involved who should always be prepared to meet new challenges and help donor come to terms with their newly discovered status. We undertook this study to assess the prevalence of TTIs using serology and determine the response rate following notification of reactive status to the donors.

MATERIALS AND METHODS

The present study was an observational study in the form of data analysis performed in Blood Bank of Department of Pathology at P D U Government Hospital in Rajkot from January 2017 to December 2018 total 2 year period. The blood bank at our hospital provides blood for the patients after mandatory TTI testing which were done with the fourth generation ELISA for anti HIV 1/2 and third generation ELISA for HBsAg, and HCV on pilot tubes samples. The tests for syphilis were rapid plasma regain (RPR) with flocculation principle.

If initial serology result was positive, sample was retested again in duplicate. Whenever the results of serology were found to be positive, blood unit was discarded as per hospital SOPs and donor was notified of his/her status either by telephone. through counsellor and give advice to report to the blood bank and for referral to the respective department of the hospital for further management.

In this study, we evaluated the response rate of TTIs reactive donors after notification of their abnormal test results. The case was closed only if the donor did not

respond to any of the three telephone calls. In case of HIV before labeling as nonresponder, the donor's details were shared with DAPCU (district AIDS prevention and control unit) for contact to be done by the network of peripheral social workers.

RESULT

Total 38707 blood donors had donated during the study period. Out of total donation, 38637 (99.81%) donors were voluntary and 329 (0.85%) blood donors were found to be TTI markers reactive. The gender-wise distribution was as follows: there were 36784 males and 1923 female donors. As per the age-wise distribution, 12153 donors were in 18–24 years age group, 21888 were in 25–40 years age group, 4666 in 41–55 years age group.

A total of 38707 donors were evaluated comprising 0.18% replacement and 99.81% voluntary donors. The majority of the donors (97.06%) donated blood for the first time. The demographic details of donors are given in Table 1.

Table 1 : Demographic details shown in table 1 as follows

Demographic details of donations (n = 38707 donors)		
Gender	Number	Percentage
Male	36784	95.04
Female	1923	4.96
Donation type		
Voluntary	38637	99.81
Replacement	70	0.18
Donor repeatability		
First time donors	37570	97.06
Repeat donor	1137	2.93
Age group		
18–24	12153	31.40
25–40	21888	56.54
41–55	4666	12.06

Table 2 : Year wise and gender wise distribution of total blood donations shown in table 2 as follows

Year	Male	Female	Total
2017	16958	716	17674
2018	19826	1207	21033
Total	36784	1923	38707

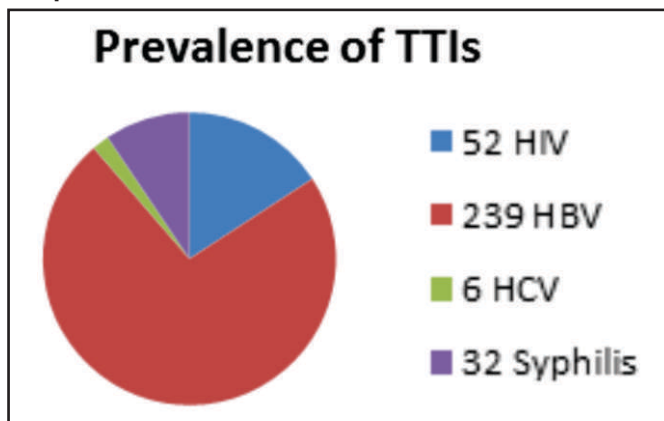
Table 3 : Year wise and type of donation (voluntary or replacement) distribution mentioned in table 3 as follows

Year	Replacement	Voluntary	Total
2017	43	17631	17674
2018	27	21006	21033
Total	70	38637	38707

Table 4 : Prevalence of TTI was 0.617 % for HBV, 0.016% for HCV, 0.134% for HIV, 0.08% for syphilis as mentioned in Table 4 and graph 1 as follows :

Total donor screened	Total reactive donor	Reactivity for test	% Prevalence of TTIs
38707	52	HIV	0.134
38707	239	HBV	0.617
38707	06	HCV	0.016
38707	32	Syphilis	0.08

Graph 1



The HIV reactive responders were referred to the ICTC for counselling and confirmatory testing while the HBV, HCV, were referred to a physician for further management.

Out of these 329 reactive donors, 173 (52.6%) includes both voluntary and replacement donors responded positively to the notification calls and attended counselling at the blood bank and attached government hospital. Among 156 (47.4%) reactive donors who did not respond to the notification, the major reasons were donor's busy schedule, out of city residence, and not willing to visit the blood bank again. The response among voluntary donors was better as compared to the replacement donors. (53.6% versus 40%) these details mentioned in table 5 and graph 2

Only 99 (57.22%) responsive donors followed their first attendance at referral specialties.

DISCUSSION

With over 93 million donations made every year worldwide, blood transfusion continues to save millions of lives each year and improve the life expectancy and quality of life of patients suffering from life-threatening conditions.^[11] At the same time, blood transfusion is an important mode of transmission of infection to the recipients. Prevalence of TTI in India is 1.8–4%, 0.4–1.09%, 0.2–1%, and 0.05–0.9% for HBV, HCV, HIV, and syphilis, respectively^[12–17]. Prevalence of TTI in the present study was in agreement with other seroprevalence studies carried out in various parts of India.

Transfusion safety begins with healthy donors. A fundamental part of preventing TTI is to notify and counsel reactive donors. Donor notification and counselling protect the health of the donor, prevent secondary transmission of infectious diseases to sexual partners, reduces risk of vertical transmission and provide feedback about the effectiveness of donor selection procedures such as pre-donation education and medical history.^[18]

We attempted to contact 329 (0.85%) reactive donors about their TTI status either telephonically. Only 173 (52.6%) reactive donors responded to the notification. In an Indian study by Patel et al. 236 (60.36%) donors showed a positive response following donor notification^[7] In another study by Agarwal et al. involving 416 reactive donors, only 249 (59.8%) donors turned to transfusion facility and attended counselling after receipt of their reactive status^[19] The counselling success rate at large blood centre in southern India was 41.18%, 11.11%, and 14.63% for HBV, HIV, and HCV, respectively.^[20]

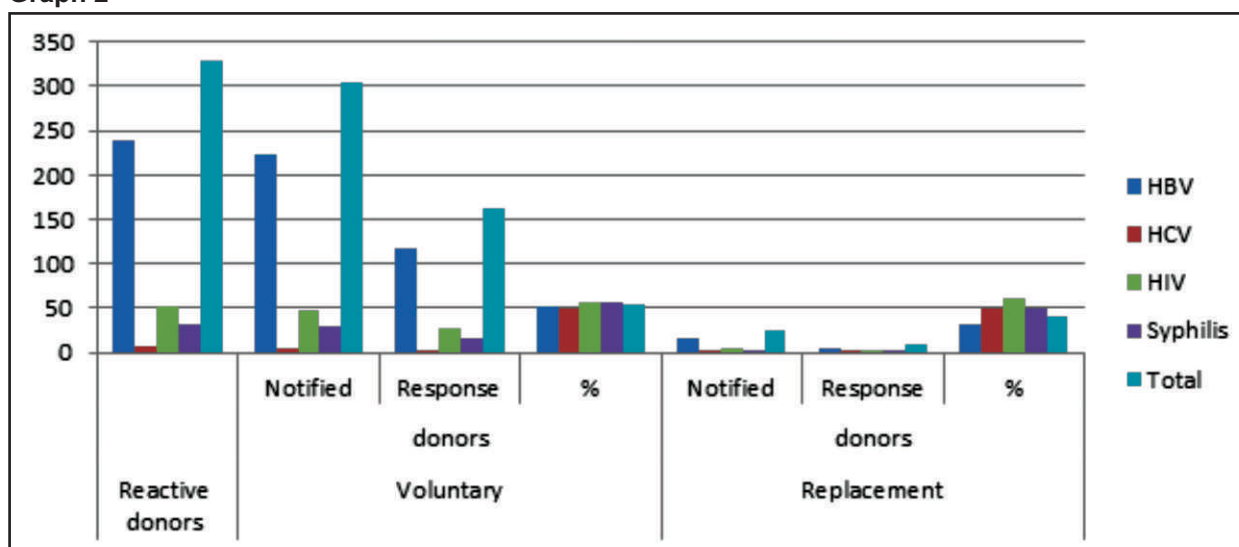
Donor response rate in our study was nearly equal as compared to other studies from the country. In our study non responders are 156 (47.4%). This may be due to poor health care knowledge, social stigma associated with TTIs (especially HIV), and inadequate understanding of implications of screening tests among the general population.^[20, 21] Also, as many of the donors' belonged to far-off places; thus distance could be a reason for the donors not reporting back to transfusion facility. It is difficult to ensure that every donor had understood the meaning and intent of counselling to the best of his / her intelligence. The study by Kleinman et al. reports that following notification 27% of donors contacted the blood centre for further information.^[22]

One more finding of this study that should be a serious concern for blood transfusion authorities is that only 99 (57.2%) of 173 responsive donors responded to the first

Table 5

Name of Serology Tests	Reactive Donors	Voluntary Donors			Replacement Donors		
		Notified	Response	%	Notified	Response	%
HBV	239	239	117	52.4	16	05	31.2
HCV	06	06	02	50	02	01	50
HIV	52	52	27	57.44	05	03	60
Syphilis	32	32	17	56.6	02	01	50
Total	329	329	163	53.6	25	10	40

Graph 2



CONCLUSION

Our study was a small endeavour in determining reactive donors' prevalence and their response rate when informed about their reactive status according to results based on screening assay by ELISA. To achieve 100% response rate for contacted reactive donors, it is required to educate the donors at the time of donation about the various TTI, window period, screening tests done, and the importance of informing them the test results. It is also of equal weightage to make donor understand that correct and complete demographic data are crucial for blood bank for informing them test results besides calling them in case of non-availability of blood inventory. There is an urgent need to formulate the nationally acceptable guidelines for notification of all reactive donors.

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call and followed up their attendance at the ICTC or with the physicians they were asked to meet. This raises questions about the way donors are counselled and made aware of the consequences of not taking proper treatment

As per objective 4.16 of the Indian action plan for blood safety, the blood donors are counselled about TTIs prior to donation and are offered the option of knowing their seroreactive status provided they give their consent. Low donor response rate suggest that we are not able to meet this goal with reasonable satisfaction.

Transfusion safety rests heavily on the health of blood donors. To improve donor response rate, we have switched to exclusive telephonic notification to all donors who test reactive in screening tests. Donors should undergo optimal pre-donation counselling so as to educate them about the risk of infections and the window period. It is the collective duty of transfusion community to inform these donors and do as much as possible to allay their anxiety about reactive result and to advise them about available treatment

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Original Articles

Prospective Study for Evaluation of PPIUCD Insertion as a Method of Contraception

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KEY WORDS : · Intra-caesarean insertion, vaginal insertion, PPIUCD, Post placental insertion, Continuation rate, Expulsion

ABSTRACT:

Background : Now a days institutional deliveries have increased in India, thereby providing opportunities for quality postpartum family planning services. Post placental intra-uterine device has many advantages like providing contraception immediately after childbirth, non-interference with lactation and high efficacy. This study aims to compare the complication rates following insertion of immediate post placental IUCD (PPIUCD) with interval insertion.

Methods : Prospective analytical study was conducted from January 2018 to December 2018 department of Obstetrics and Gynaecology, at GMERS medical college, Sola, Ahmedabad, India. After counselling with patients and her relatives during antepartum period, IUCD insertion was done in 719 patients, out which in 208 patients inserted vaginally and 511 patients during caesareansection. These patients were evaluated at 6 weeks and 6 months regularly.

Results : Both methods were found effective and safe. Out of 719 patients,670 patients had followed up as per protocol. 29 cases who lost for follow up and 20 cases who had spontaneous expulsion were excluded from study. Missing threads were detected more in caesarean group (30%) than vaginal group (19%). One of the disadvantages of PPIUCD is the high rate of expulsion, Most of the expulsions occur within 3 months of delivery. No pregnancy and perforation were documented in the study.

Conclusion : PPIUCD is very effective, safe and reversible contraceptive method which provides contraceptive effect soon after birth. The PPIUCD is a long-acting reversible contraceptive method that is suitable for use in all women in postpartum period. Missing strings after PPIUCD insertion is a common problem encountered during follow up examination and better management has to be provided.

INTRODUCTION

Most women do not desire a pregnancy immediately after a delivery but are unclear about contraceptive usage in postpartum period. This results in unplanned and undesired pregnancies, which in turn increases induced abortion rates and consequently maternal morbidity and mortality. In a recent study of postpartum unintended pregnancies 86% resulted from non-use of contraception and 88% ended in induced abortions.^[1]

Only 26% of post-partum women are using any method of family planning during 1st post-partum year.^[2]

Sterilization is leading method of contraception in India. Hence, immediate post-partum period is favourable time for counselling and addressing issue of birth spacing because women, who have given birth recently, are highly

motivated to use contraception. It has major advantage over interval insertion as there it rule out pregnancy and already they are in health care facilities. In developing countries like India, delivery is only opportunity when women come in contact with health care provider. An intrauterine contraceptive device (IUCD) has several advantages for use in postpartum period as it is an effective, long term reversible, is coitus independent, and does not interfere with breast feeding. Postpartum insertion avoids the discomfort during interval insertion and insertion related bleeding will be masked by lochia.^[3]

The string of IUCD is used to locate the device in situ and also to remove device. Missing strings are common findings during PPIUCD follow up as compared to interval IUCD. During follow up period, pelvic ultrasound is to

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every woman, if necessary ray abdomen. For retrieval of displaced IUCD invasive methods may be needed.

AIM

The aim was to study the incidence, management, clinical outcome of missing strings, rates of complications like infection, heavy menstrual bleeding, lower abdominal pain, rates of removal and to compare among two modes of insertion (after vaginal delivery & intra caesarean insertion group).

OBJECTIVES

It was a prospective study conducted from January 2018 to December 2018 in the Department of Obstetrics and Gynaecology at GMERS medical college and hospital, Sola.

INCLUSION CRITERIA

1. Post-partum mothers of any age in post placental period
2. Post-partum mothers within 48 hours of delivery
3. Caesarean section

EXCLUSION CRITERIA

1. Mothers >48 hrs post-partum
2. Prolonged rupture of membrane >24 hours
3. PPH
4. HIV reactive patients
5. Hb <= 8%
6. PID
7. Uterine anomaly
8. Diabetes
9. Heart disease
10. Patients who did not want PPIUCD

The IUCD used was CuT-375, which was available free of cost in the Government Program. This was placed in uterine fundus with the help of long and curved forceps without lock (Kelly's Placental Forceps) for vaginal insertions, within 10 minutes of removal of placenta or within 48 hours. During caesarean section ring forceps were used to place the IUCD in fundus of uterus through the lower segment incision. Strings were put inside uterine cavity pointing towards cervical canal. The IUCD strings were not trimmed in both types of insertions and left in uterine cavity. Total 1000 patients were counselled of them; 750 patients were willing for Cu T insertion. CuT insertion was done in 719 patients. In 208 patients IUCD was inserted vaginally within 10 minutes of placenta removal and within 48 hours of delivery. In 511 caesarean sections IUCD was inserted following delivery of

placenta. Depending upon mode of delivery, they were divided in two groups: vaginal PPIUCD group and intra caesarean section PPIUCD group. Out of 719 patients, 670 patients had follow up as per protocol. 29 cases who lost for follow up (11 in vaginal group and 18 in intra caesarean group) and 20 cases who had spontaneous expulsion (14 in vaginal group and 6 in intra caesarean group), were excluded from study. Follow up of patients of both groups was done at 6 weeks interval. During follow up visits main focus was complaints of patients, per speculum examination for visibility of strings, pelvic ultrasound. Follow up of patients done at regular 6 months interval. All information provided by this study groups were used for calculating statistics and tabulation of descriptive data was prepared.

In this study, it was found that second Para (50.34%) patients accepted PPIUCD more than others. Patient of age group of 20-24 (50.34%) had the best acceptance of PPIUCD followed by 25-29 years (30.14%).

At 6 weeks follow up visit each and every patient showed proper placement of IUCD on USG. On per speculum examination at 6 weeks follow up, in 80.88% patients of vaginal group, strings were visible. In intra caesarean group, 69.6% patients had visible strings on per speculum examination. Missing strings were found in 183 patients at 6 weeks follow up (in 19.12% patients in vaginal group and in 30.39% patients in intra caesarean group). At 6 months follow up missing strings were found in 164 patients (14.75% in vaginal group and 28.33% in intra caesarean group). There was spontaneous descent of strings in 18 cases after 6 months. Heavy menstrual bleeding was complained by 10% patients of vaginal insertion group and by 7% patients of intra caesarean insertion group patients. No pregnancy was reported with CuT in situ in any group. Only 2% patients were presented with PID in both vaginal and caesarean group. Abdominal pain was complained by 6% patients of vaginal group and 5% patients of caesarean group patients. PPIUCD had to be removed in 46 women. 12 (4.3%) following vaginal insertion and 34 (7%) following intra caesarean group. PPIUCD had to be removed in 3% patients for vaginal bleeding in vaginal group and 1% in caesarean group. Abdominal pain was the cause for PPIUCD removal in intra caesarean insertion group for 1% patients and in vaginal group for 2% patients. Missing thread was reason for IUCD removal in 2% of patients in vaginal group and 4% patients in caesarean group though IUCD was in situ in USG. Total removal rate was 4% in vaginal group and 7% in caesarean group. Twenty (2.78%) cases of spontaneous expulsion of PPIUCD were reported.

RESULTS AND ANALYSIS

Table No 1: Age group distribution

Age group (years)	Total=719 N=(%)
<19	16(2.32)
20-24	362(50.34)
25-29	216(30.14)
30-34	89(12.42)
35-39	28(4.01)
40-44	8(1.16)

Table No 2 : Education status

Education status	Total=719 N=(%)
No formal education	89(12.41)
Primary	315(43.81)
Secondary	238(33.10)
Higher secondary	40(5.06)
Others	37(5.14)

Table No 3: Reason for removal in both groups

Reason for removal	Vaginal group=183 N=(%)	Intra caesarean Group=487 N=(%)	Total=670 N=(%)
Bleeding PV	6(3)	5(1)	11(1.64)
Abdominal pain	4(2)	7(1)	11(1.64)
Missing strings	4(2)	20(4)	24(3.58)
Total	12(4.37)	34(7)	46(6.86)

Table No 4 : Comparison of complications in both groups

Complications	Vaginal group=183 N=(%)	Intra caesarean Group=487 N=(%)	Total=670 N=(%)
Bleeding PV	20(10)	31(7)	51(7.96)
Pregnancy	0(0)	0(0)	0(0)
Infection	4(2)	7(2)	11(1.64)
Abdominal pain	11(6)	25(5)	36(5.37)
Perforation	0(0)	0(0)	0(0)

Table No 5: Follow up of missing strings in both groups

Complications	Vaginal group=183 N=(%)	Intra caesarean Group=487 N=(%)	Total=670 N=(%)
Missing strings at 6 weeks	35(19.12)	148(30.39)	183(27.31)
Missing strings at 6 months	27(14.75)	138(28.33)	164(24.47)
Removal of IUCD in case of missing strings	2(1.09)	20(4.10)	22(3.28)

DISCUSSION

Acceptance of PPIUCD was higher among women with Primary and secondary education (43.81% and 33.10%), than those with non-formal or higher education (5.06 and 5.14 %). This finding confirms importance of education in deciding future pregnancy. This was similar to a study done in Egypt by Safwat et al.^[4] where women with no formal education had an acceptance of 9.4 %, while those with formal education were 19.4 %.

One of the disadvantages of PPIUCD is the high rate of expulsion, as after child birth uterus is contracting and cervix is dilated. Most of the expulsions occur within 3 months of delivery. When IUCD is inserted immediately postpartum, expulsion rate at 6 months ranged from 31 to 41 per 100 in a WHO multicenter trial.^[4]

In present study, it was 6.7% in vaginal group and 1.1% in intra caesarean group with overall expulsion rate of 2.8%. Celen S et al in 2004 found that one year cumulative expulsion rate of CuT was 12.3% in early post-partum insertion of IUCD (vaginal group) and another study conducted by him in 2011 found 17.6% expulsion rate in intra caesarean IUCD.^[5,6]

Most common reason for discontinuation is complain of missing strings followed by heavy menstrual bleeding and abdominal pain.

IUCD strings were visible in 72.6% women at 6 week and in 75.5 % women at 6 months. Bhutta et al reported visibility of 92% & 96% at 6 months in intra caesarean group and interval insertion group respectively.^[7]

In case of PPIUCD insertion, thread may take time to descent. Usually 75% of threads are visible by the end of 3 months. Contraceptive efficacy was same in both group (0 per 100 women year). Failure rate of about 2-3 pregnancies per 100 women year has been described in case of interval IUCD insertion. Sujnanendra M reported 1.9% failure rate following PPIUCD.^[8]

Pelvic ultrasound was done in all cases at 6 weeks follow up. In many cases USG was done more than once. No perforation was found in any group in present study. In case of PPIUCD insertion perforation is very rare. Those who had intra caesarean insertion were more satisfied (73%) with this method than vaginal delivery group (66%) supported by study Jisha Bai C.P et al.^[9] In present study, PPIUCD was found to be very safe and effective method of contraception among both the groups similar to inference drawn by Cochrane Database review by Grimes et al. in 2010.^[10]

CONCLUSION

The PPIUCD was demonstrably safe, having no reported incidence of perforation with low rates of expulsion, pelvic

infection, and few lost strings. We can conclude that Inserting CuT 380 A is safe and effective and has high retention rate in both vaginal and caesarean group. Most of the expulsions occur within 3 months of delivery. Missing strings after PPIUCD is a common problem encountered during follow up and invasive methods are needed for IUCD removal with non-visible strings.

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A Comparative Study of Tear Film Tests in Diabetic and Non-diabetic Patients - A Cross - Sectional Study.

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Keywords: Schirmer's test, Tear film break up time, Tear meniscus height

ABSTRACT

Aim : To compare the results of various tear film tests in control and diabetic patients. **Materials and methods :** This observational study included diabetic patients (n=75) and healthy subjects in control group(n=75). All subjects were asked for a detailed history, underwent proper general and systemic examination. Complete ocular examination included best corrected visual acuity, slit lamp examination, intraocular pressure, dilated fundus examination. Tests for dry eyes like Schirmer's test, tear film break up time (TBUT), Tear meniscus height, Rose Bengal staining was done on all patients. **Results :** The values of various tear film tests were reduced in diabetic patients as compared to control patients. Schirmer's test showed significantly different results of 23.49 ± 7.98 mm vs 17.19 ± 9.54 mm, $p < 0.0001$ for right eye and 24.8 ± 7.66 mm vs 18.44 ± 10.5 mm, $p = 0.0001$ for left eye. TBUT also showed a significantly different result in both groups as for right eye 11.9 ± 2.07 seconds vs 9.16 ± 3.37 seconds, $p < 0.001$ for right eye and 11.97 ± 2.01 seconds vs 9.50 ± 3.10 seconds, $p > 0.0001$ for left eye. Tear meniscus height showed significantly different result for both groups of 0.81 ± 0.026 mm vs 0.56 ± 0.32 mm, $p < 0.0001$ for right eye and 0.79 ± 0.023 mm vs 0.57 ± 0.032 mm, $p < 0.0001$ for left eye. Rose Bengal staining didn't show much significant result for right eye but was significant for left eye. It did not give a reliable result. **Conclusion :** Dry eye is a significant ocular disorder in diabetic patients and should be taken into account while examination. The results of tear film tests were significantly reduced in diabetic patients.

INTRODUCTION

A multifactorial disease of the ocular surface characterized by deficient tear production and/or excessive tear evaporation, leading to loss of homeostasis of the tear film.

Cornea, conjunctiva, lacrimal glands, meibomian glands and lids make up the ocular surface unit. Function of this unit is tear film maintenance. Dry eyes occur when there is a dysfunction of this unit. This leads to instability of tear film and breakup of the film before the next blink. The symptoms are transient mild irritation, persistent dryness, itching, burning, redness, pain, ocular fatigue and visual disturbance. Severe dry eye results in impairment in daily living, work productivity and affect mood.^[1]

Diabetes is one of the common causes of blindness in persons aged 20-70 years. Cataract and retinopathy are well known ocular complications of diabetes. However, recently, attention has been drawn to ocular surface problems, especially dry eye in diabetic patients.^[2] Diabetic keratoepitheliopathy is sometimes hard to cure and can induce quantitative and qualitative abnormalities

in tear secretion, contributing to decreased corneal sensitivity and poor adhesion of regenerating epithelial cells.^[2,3] Research shows that most cases of dry eye associated with diabetes are caused by insufficient production of tears due to "autonomic neuropathy" affecting the nerves that control the lacrimal gland.^[4]

The prevalence of dry eye in diabetes is studied to be 20-55%.^[5,6] With the increasing incidence of diabetes it is important to study its long term effects on eyes. Diabetes is one of the leading causes of blindness in older people. Elderly diabetic patients are at a high risk of developing Dry Eye Syndrome (DES), because of the diabetes-induced decrease in corneal sensation, which leads to a decrease in tear production and, therefore, dry eyes. This mechanism is similar to that observed in subjects using corneal contact lenses. Although epidemiologic evidence obtained on the prevalence of DES among diabetic patients is limited, some studies have shown a correlation between diabetes mellitus and DES.^[7,8,9]

Possible reason for this may be the diabetic sensory or autonomic neuropathy or the occurrence of microvascular changes in the lacrimal gland.^[10]

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This study will evaluate the dry eye in diabetic patients and compare the results with normal people and help identify the changes in eyes that cause discomfort and in severe cases damage to the eyes.

MATERIALS AND METHODS

A Comparative, cross-sectional study was carried out on out patient department (OPD) patients in our hospital within a duration of 9 months.

Inclusion Criteria -

- All patients giving written and informed consent for the study.
- Normal patients without any systemic disease who come for normal routine eye check up.
- The patients having Type II Diabetes for 5 years or more.
- Patients in the age group of 40-70 years.

Exclusion Criteria -

- All patients not giving consent for the study.
- Any congenital lacrimal dysfunction.
- Patients instilling any topical drops.
- Patients who have undergone any ocular surgery .
- Patients with any other ocular disorders like conjunctivitis, keratitis, pterygium etc.
- Patients allergic to fluorescein dye.
- Patients with any systemic disorders like hypertension, thyroid, rheumatoid arthritis etc.

Patient selection -

After taking into consideration the inclusion and exclusion criteria, 150 patients attending eye opd, 75 diabetic and 75 non diabetic were selected.

- Ethical committee clearance :

Ethical committee clearance was taken before starting the study.

- Informed consent :

Written and informed consent was taken from all patients who participated in the study.

150 patients were examined – 75 diabetic and 75 normal non-diabetic.

- Detailed history was taken including chief complaints, past history , family history , personal history, drug history followed by general and systemic examination and monitoring of vitals.
- Patients history about diabetes was asked and related reports analysed.
- Patients was examined under torch light of any abnormalities of eyebrows , eyelids , conjunctiva, cornea , sclera, iris , pupil and lens.

- All patients underwent:

- Visual assesment using Snellen's visual acuity chart,
- Examination of anterior segment in detail using slit lamp biomicroscopy.
- Refraction
- Intraocular pressure measurement using non-contact tonometer.
- Fundus examination with direct ophthalmoscope.

Examination for dry eyes

Schirmer's Test :

The patient was explained about the entire procedure. The strip was shown to the patient. The patient was seated comfortably at the slit lamp. The test was performed by using a schirmer's strip (Whatman filter paper no.41 ,5mm wide and 35 mm long). The strip was first folded at 5mm mark and placed in the lower lid at junction of middle and outer third. Care must taken not to touch the cornea. Both the eye were examined simultaneously .After 5minutes both the strips were removed from the fornices and wetting of the filter paper strip was measured from the fold.

Wetting of less than 10mm was considered abnormal.

Value of 5-10mm are suggestive of moderate to mild dry eye and less than 5mm are suggestive of suggestive of severe dry eye.

Tear Film Break up Time :

The patient was explained the procedure. After a fluorescein strip moistened with sterile saline has been applied to the tarsal conjunctiva in the lower fornix and the patient asked to blink a few times, the strip is removed. The patient was comfortably seated at slit lamp and the tear film is evaluated using a broad beam of the slit lamp with cobalt blue illumination. The patient asked to blink a few times and then asked not to blink and observed on slit lamp.

The time lapse between the last blink and the appearance of the first randomly distributed dry spot on the cornea is the TBUT. The appearance of dry spots in less than 10 seconds is considered abnormal.

Tear meniscus height :

For evaluation of the tear volume, the patient was explained the procedure. The fluorescein strip wetted and placed in lower fornix as done for TBUT. Then patient seated at slit lamp and tear meniscus height measured in horizontal slit.

Rose Bengal staining :

The patient is explained about the procedure. It was

performed using a saline moistened strip. The saline drop was used to moisten the strip left to remain in contact with the strip for at least a minute to achieve an adequate concentration of Rose Bengal to stain the ocular surface. Patients should be informed that the drop might irritate the eye. The patient is seated at the slit lamp and observed for staining of the cornea and conjunctival areas. Rose bengal stain stains the degenerated and devitalized epithelium of ocular surface. The grading of Rose Bengal staining was done by Oxford classification. (photo I)

Dry Eye Study Workshop (DEWS) severity grading :

The severity of dry eye was decided according to the DEWS severity grading. (photo II)

OBSERVATION :

In this study continuous data were summarised as Mean \pm SD (standard deviation) whereas discrete in number (n) and percentage (%). Continuous two independent groups were compared with Mann Whitney U test whereas categorical (discrete) were compared by chi-square (χ^2) test. A two-tailed ($\alpha=2$) $p < 0.05$ was considered statistically significant. Analyses were performed on Graphpad Instat software (version 2.1).

A total of 300 eyes of 150 patients were examined . The participants were divided in 2 groups .Group A consisting of 75 patients who were non-diabetic and Group B consisting of 75 diabetic patients.Group A was considered to be control.

The primary outcome was to study the relation between dry eyes and diabetes.The secondary outcomes were to study relation between

- Age and dry eyes,
- Gender and dry eye
- Diabetic retinopathy and dry eye.
- Duration of diabetes and dry eye.

The objective was to compare the outcomes between two groups.

The age of patients ranged from 41 to 70 years. The mean age in control group was 57.89 ± 7.21 years and mean age in diabetics was 57.49 ± 7.54 years.

Comparing the mean age of two groups, Mann Whitney U test showed similar age between the two groups (57.89 ± 7.21 years vs 57.49 ± 7.54 years. , $U=2901.5$, $p=0.739$) i.e. did not differ significantly.

There were 42 males and 33 females in the control group and 38 males and 37 females in the diabetic group. (fig I)

Comparing the sex proportion (M/F) of two groups, χ^2 test showed similar sex proportion between the two groups

($\chi^2=0.428$, $p=0.512$) i.e. also not differ significantly.

The above comparisons concluded that the subjects of two groups were age and sex matched and thus comparable and thus may also not influence the study outcome measures.

In both the groups and almost all age groups males were observed to be more. There were more patients in the age group of 61-70 years. (FIG II AND FIG III)

According to schirmer's test 4 out 75 control group patients showed dry eyes in right eye and 2 in left eye. 25 out 75 diabetic group patients showed dry eyes in right eye and 21 in left eye. In diabetic patients males were observed to have more dry eyes than females . Maximum patients with dry eyes were seen in diabetic group and in the age group of 61-70 years age group. (FIG IV)

According to tear film breakup time, in control group only 7 patients had dry eyes in right eye and 6 patients had dry eyes in left eye. Whereas in diabetic group a total of 36 patients had dry eye in right eye and 32 patients had dry eyes in left eye. In this test also , in diabetic group, maximum patients with dry eyes were observed in 61-70 years old age group and minimum in 41-50 year with males more than females. (FIG V)

According to tear meniscus height, in control group only 6

FIG. I. - Distribution of gender in both groups.

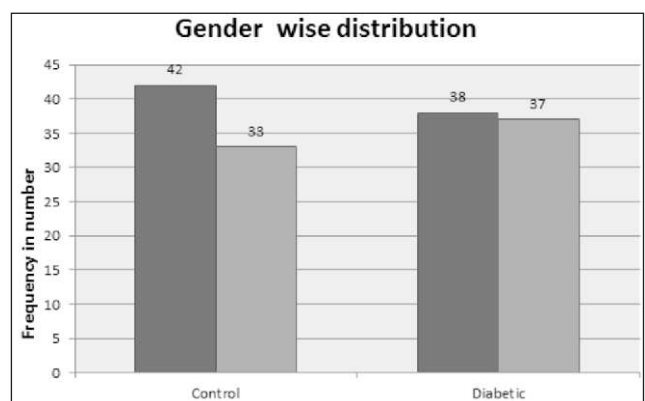


FIG. II. - Age and Gender distribution in control group.



FIG. III. - Age and Gender distribution in diabetic group:

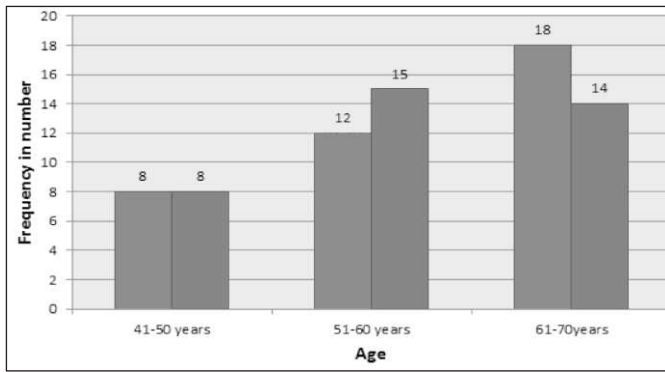


FIG. IV. : Comparison of schirmer's test in control and diabetic group:

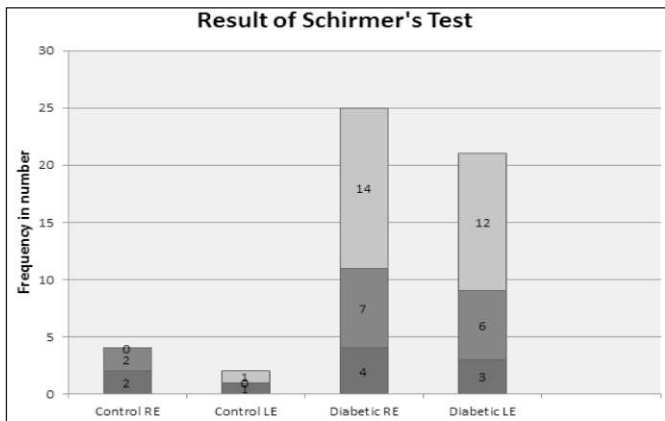


FIG V: Comparison of tear film break up time data between control and diabetic group:

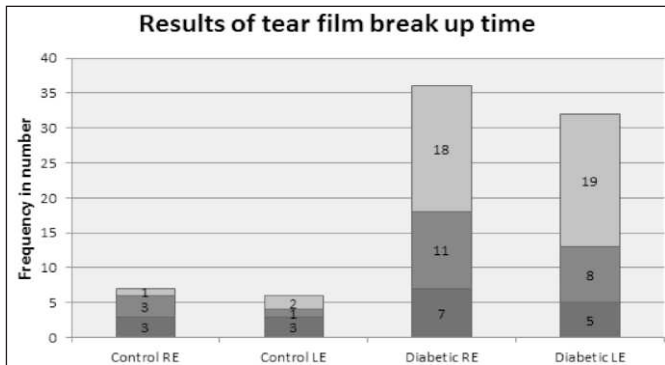


FIG VI : Comparison of tear meniscus height data between control and diabetic groups :

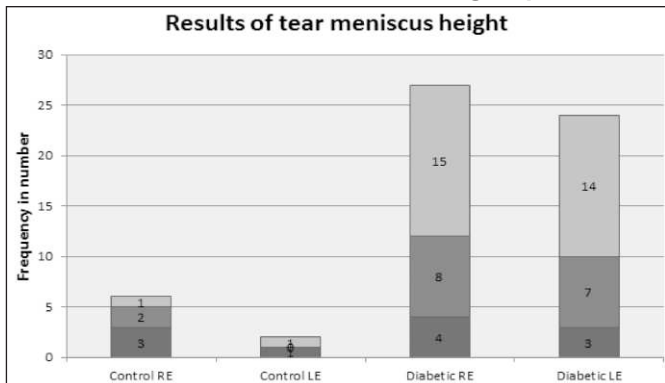


FIG VII : Results of Rose Bengal staining :

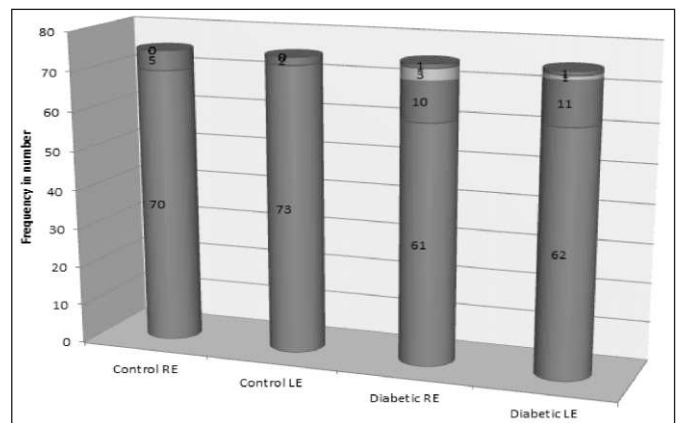


FIG VIII : Graph showing Number of patients with dry eye according to DEWS grading.

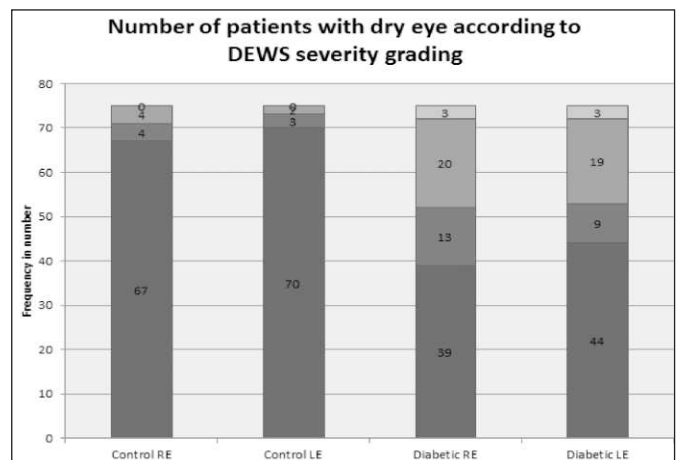


FIG IX : Chart showing percentage od patients with dry eye in diabetic group graded by DEWS grading.

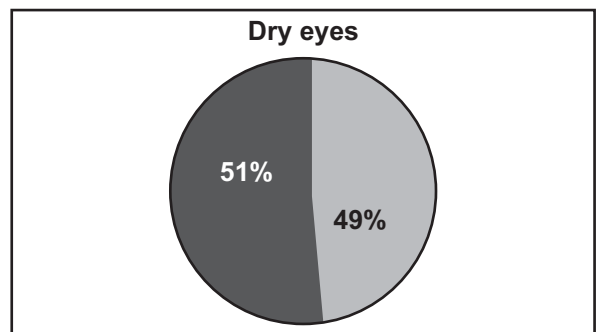


FIG X : Graph showing percentage of patients having dry eye in diabetic patients with diabetic retinopathy.

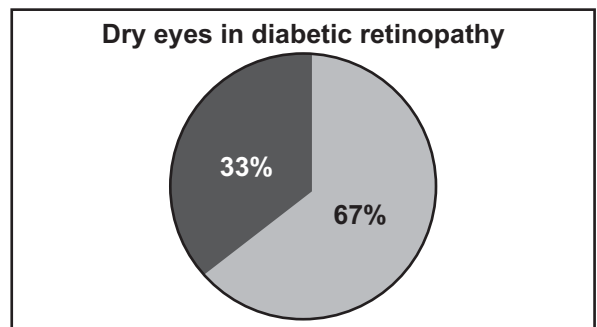


Table I : Mean, Standard deviation and comparison of means.

		CONTROL (Mean ± SD)	DIABETIC (Mean ± SD)	t	p value
SCHIRMER'S TEST(mm)	RE	23.49±7.98	17.19±9.54	NA	<0.0001#
	LE	24.8±7.66	18.44±10.5	4.23	<0.0001
TBUT (seconds)	RE	11.9±2.07	9.16±3.37	6.007	<0.0001
	LE	11.97±2.01	9.50±3.10	5.76	<0.0001
TEAR MENISCUS HEIGHT (mm)	RE	0.81±.026	0.56±0.32	NA	<0.0001#
	LE	0.79±.023	0.57±0.32	4.81	<0.0001

Table II : Duration of diabetes and patients with dry eyes.

Years of diabetes	No. of patients with dry eye	No. of patients in this group	Percentage of patients with dry eye in each group
5	7	17	41%
6	5	16	31%
7	10	20	50%
8	7	11	63%
9	5	8	62%
10	3	3	100%
Total	37	75	

patients had dry eye in right eye and 2 patients had dry eyes in left eyes based on tear meniscus height. In diabetic group 27 patients had a low tear meniscus height indicating dry eye in right eye and 24 patients had dry eye in left eye.

Similar to above observation maximum patients were in 61-70 years age group and minimum in 41-50 years and males were more than females.(FIG VI)

The mean value of schirmer's test results (mm) in control group was 23.49±7.98 in right eye and 24.8±7.66 in left eye and mean in diabetic group was 17.19±9.54 and 18.44±10.5 in right and left eye respectively with p value =0.0001.This shows that there was a significant difference in schirmer's test results in between both groups.

While observing tear film break up time (seconds) we observed a mean of 11.9±2.07 in right eye and 11.97±2.01in left eye in control group whereas a mean of 9.16±3.37 in right eye and 9.50±3.10 in left eye with p value <0.0001 which was significant.

In measuring tear meniscus height(mm) a mean of 0.81±.026 and 0.79±.023 was observed in control group for right and left eyes.In diabetic group mean values were 0.56±0.32 and 0.57±0.32 for right and left eyes. The value was <0.0001 which suggested a significant difference in result values.(TABLE I)

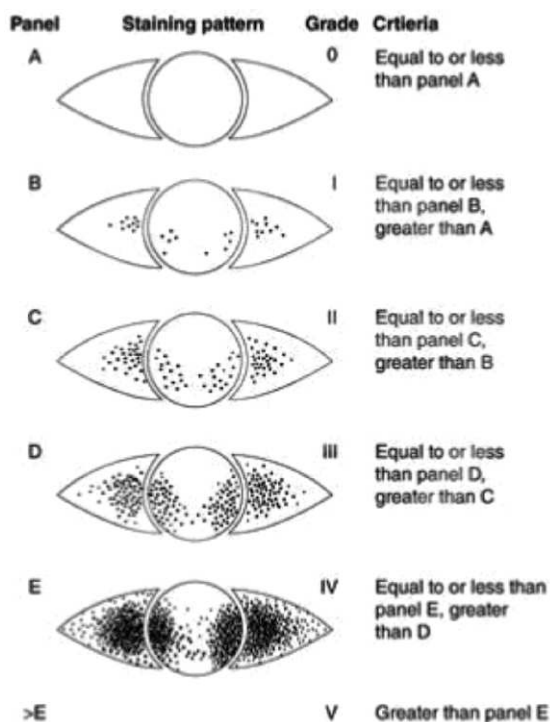
While staining both eyes with Rose Bengal stain and grading it with Oxford classification we observed that in control group only 5 patients showed a positive staining in right eye and only 2 patients in left eye. But in diabetic group 14 patients showed staining in right eye and 13 patients showed staining in left eye. (FIG VII)A significant difference staining test result was seen for left eye.Chi-square test used for the analysis which showed a non significant value in right eye (p=0.098) but a significant value in left eye (p=0.0276). This test could not be considered reliable for analysis of both groups. 8 control patients had dry eyes in right eye and 5 had dry eyes in left eyes.

According to DEWS severity grading in diabetic group 36 patients had dry eyes in right eye and 31 had dry eyes in left eye. In the diabetic group 13 patients had grade 1 dry eye, 20 had grade 2 and 3 had grade 3 dry eyes in right eye and 9 patients had grade 1 dry eye, 19 had grade 2 and 3 had grade 3 dry eyes in left eye. No patient showed grade 4 dry eye.(FIG VIII) 37 patients in diabetic age group showed dry eyes which means 49% patients had dry eyes.(FIG IX)

SECONDARY OUTCOMES :

As per DEWS severity grading ,the patients analysed as having dry eyes were correlated with various other outcomes.

PHOTO I - Oxfords grading for rose Bengal staining



1) **CORRELATION OF DRY EYES WITH GENDER :**

Out of 37 diabetic patients who had dry eyes 20 were males (54%) and 17 were females (46%) which means males were more. But the correlation was not statistically significant (chi-square test, p=0.333). This means gender did not have any association with dry eyes.

2) **CORRELATION OF DRY EYES WITH AGE :**

There were 7 (44%) patients with dry eyes in 41-50 years, 13 (48%) in 51-60 years and 17 (53%) in 61-70 years. This shows that dry eye occurrence

increases with increasing age in diabetic patients. This may also be due to the increases duration of diabetes with increasing age.

But statistically the data was not significant (chi-square, p=0.398)

3) **CO-RELATION OF DRY EYES AND YEARS OF DIABETES:**

As per DEWS classification, the patients analysed as having dry eyes were correlated with the duration of diabetes.

With increasing age the percentage of patients with dry eyes in that age group. We can see that in patients with more than 7 years of diabetes more 50% patients in that age group had dry eyes with 100% in 10 years duration (TABLE II). But this data was statistically not significant (p>0.05), which may be due to small sample size.

4) **CORRELATION BETWEEN DIABETIC RETINOPATHY AND DRY EYES:**

Out of 75 diabetic patients 54 had a normal fundus and 21 patients had diabetic retinopathy. And out of the 21 patients with diabetic retinopathy 14 patients had dry eyes meaning 67% (FIG X). This means that with presence of diabetic retinopathy, dry eyes could also be a possible association in diabetic patients. Though statistic test didn't show a positive correlation p value 0.075 which may be due to small sample size, but 67% patients with diabetic retinopathy showed dry eyes.

We observed severely reduced readings in patients who had severe Non-Proliferative diabetic retinopathy (NPDR) and Proliferative diabetic retinopathy (PDR).

PHOTO II : DEWS severity grading of dry eyes.

Dry Eye Severity Level	1	2	3	4*
Discomfort, severity & frequency	Mild and/or episodic; occurs under environmental stress	Moderate episodic or chronic, stress or no stress	Severe frequent or constant without stress	Severe and/or disabling and constant
Visual symptoms	None or episodic mild fatigue	Annoying and/or activity-limiting episodic	Annoying, chronic and/or constant, limiting activity	Constant and/or possibly disabling
Conjunctival injection	None to mild	None to mild	+/-	+/++
Conjunctival staining	None to mild	Variable	Moderate to marked	Marked
Corneal staining (severity/location)	None to mild	Variable	Marked central	Severe punctate erosions
Corneal/tear signs	None to mild	Mild debris, ↓ meniscus	Filamentary keratitis, mucus clumping, ↑ tear debris	Filamentary keratitis, mucus clumping, ↑ tear debris, ulceration
Lid/meibomian glands	MGD variably present	MGD variably present	Frequent	Trichiasis, keratinization, symblepharon
TFBUT (sec)	Variable	≤ 10	≤ 5	Immediate
Schirmer score (mm/5 min)	Variable	≤ 10	≤ 5	≤ 2

*Must have signs AND symptoms. TFBUT: fluorescein tear break-up time. MGD: meibomian gland disease
 Reprinted with permission from Behrens A, Doyle JJ, Stern L, et al. Dysfunctional tear syndrome. A Delphi approach to treatment recommendations. Cornea 2006;25:90-7

DISCUSSION

In our study we compared and correlated the tear film tests in control and diabetic groups.

A total of 150 patients were observed for both eyes out of which 75 were diabetic and 75 non diabetic.

Mean age of patients in our study for control was 57.89 ± 7.21 years and mean age in diabetics was 57.49 ± 7.54 years. Maximum patients were in the age group 61-70 years followed by 51-60 years followed by 41-50 years

There were more males than females in the study

We compared tear film tests in both groups like schirmer's test, tear film break up time, tear meniscus height, Rose Bengal staining and results showed significantly reduced values in diabetic than in controls.

Schirmer's test showed significantly different results of 23.49 ± 7.98 mm vs 17.19 ± 9.54 mm, $p < 0.0001$ for right eye and 24.8 ± 7.66 vs 18.44 ± 10.5 mm, $p = 0.0001$ for left eye.

TBUT also showed a significantly different result in both groups as for right eye 11.9 ± 2.07 seconds vs 9.16 ± 3.37 seconds, $p < 0.001$ for right eye and 11.97 ± 2.01 seconds vs 9.50 ± 3.10 seconds, $p > 0.0001$ for left eye.

Tear meniscus height showed significantly different result for both groups of 0.81 ± 0.026 mm vs 0.56 ± 0.32 mm, $p < 0.0001$ for right eye and 0.79 ± 0.023 mm vs 0.57 ± 0.032 mm, $p < 0.0001$ for left eye.

Rose Bengal staining didn't show much significant result for right eye but was significant for left eye. It did not give a reliable result.

Also these studies showed significant correlation between dry eyes and diabetic retinopathy.

On correlating the data in our study, gender did not affect the number of patients with dry eyes. Age wise distribution did not show a statistical significance but on calculating percentage we could infer that patients in age group of 61-70 years had more dry eyes and that older age can be a factor for dry eye in diabetic patients. Also percentage calculation showed that with increasing duration of diabetes the number of dry eyes increased. And on correlating with diabetic retinopathy dry eyes were common in patients having diabetic retinopathy. Though statistically the results are not significant for secondary outcome percentage calculation is significant. This may be due to the small size of the sample.

Similar to our study, a study conducted by Kersewani et al^[11] showed reduced values of schirmer's test (patients with diabetic retinopathy 9.54 ± 5.32 mm vs Diabetic 9.95 ± 4.56 mm vs Control 25.84 ± 7.32 mm) and tear film break up time (patients with diabetic retinopathy 7.90 ± 2.36 s vs diabetic 9.65 ± 2.87 s vs Control 14.54 ± 2.92 s).

Another study conducted by Pai Shobha et al^[12] also

showed reduced values of tear film tests. (13.4 ± 5.7 mm vs 7.7 ± 3.9 mm for schirmer's test and 12.8 ± 5.71 vs 9.8 ± 7.01 sec for tear film break up time).

In our study few patients had a normal schirmer's test but abnormal other tests, this may be due to reflex secretion while doing the test. These patients got included in dry eye count in other tests but not for schirmer's test. So we observed that there was no ideal test to find out dry eyes and we cannot rely only on schirmer's test for screening and diagnosis and other tests should also be performed along with schirmer's test.

CONCLUSION

Our study shows that diabetes affects the tear film production and tear film test were reduced in diabetic patients as compared to control group. So, it is important that diabetic patients be examined for tear film along with routine fundus examination. The severity of dry eye correlates to tear film secretion and volume as demonstrated by decreased Schirmer's test result, TBUT and tear meniscus height. Schirmer's test and Tear film break up time tests should be routinely done for diabetic patients and especially those with symptoms. Rose Bengal test was not found to be significantly different among the two groups in our study.

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Case Series on Difficult Laparoscopic Cholecystectomy**Dr. Ravi Gadani***, **Dr. Jayeshkumar Bagada****, **Dr. R. K. Patel*****

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Keywords : Laparoscopic Cholecystectomy; Difficult laparoscopic Cholecystectomy; Conversion to Open Surgery

ABSTRACT

Since its introduction, the laparoscopic cholecystectomy procedure has evolved progressively due to improvements in optics and instrumentation. Miniaturization of instruments and thus trocar sites has continued. This prospective study was conducted at the department of General Surgery, Civil hospital, Ahmedabad, all 25 cases of elective cholecystectomies done that fell in inclusive criteria. In my study, out of 25 cases, Calot's triangle dissection was difficult due to adhesions, fibrosis & inflammation in 04 patients, 02 out of these got converted to open Cholecystectomy. Empyema of Gall bladder was present in 03 patients, 01 of these were converted to open surgery. Bleeding from Gall bladder fossa was present in 01 patient controlled later on, difficulty in applying Clip to cystic duct was present in 01 patient due to short cystic duct, gall bladder extraction was difficult in 01 patients because of multiple stones in gall bladder, one patient had port-site bleeding. In present study 2 patients (08%) converted to conventional open cholecystectomy with 02 patients having bile leak as a complication.

INTRODUCTION

In 1985, Eric Muhe in Boblingen, Germany, and in 1987 Philippe Mouret in Lyon. France, performed the first laparoscopic cholecystectomies (LC) in the world.^[1] Since its introduction, the laparoscopic cholecystectomy procedure has evolved progressively due to improvements in optics and instrumentation. It is now possible to perform a straightforward elective laparoscopic cholecystectomy using one 10- or 12-mm port and two or three ports as small as 2.0 to 3.5 mm.^[1]

Aim of this study was to study the incidence of intra operative complications, post-operative complications, operating time and conversion rate, intra-operative feasibility of port site insertion in lean and obese patient and safety, post-operative pain, surgical site infection, requirement of post-operative analgesia and hospital stay. Laparoscopic cholecystectomy is the flagship of laparoscopic surgery and the benchmark for all laparoscopic surgery in terms of efficacy, safety, patient acceptance and market penetration. Like any surgery, cholecystectomy can be difficult to perform in the diseased state, due to anatomical abnormalities or due to patient or surgeon factors. These factors can make laparoscopic surgery difficult and increase the chances of complications. Unless there are specific indications a routine cholangiogram is not performed.^[2]

Higher conversions and iatrogenic injuries are associated with difficult gallbladder operations. Conversion rates ranging from under 5% to 30% have been reported. Commonly encountered difficulties are peri-GB Adhesions & mass formation, difficult entry and access to peritoneal cavity, distended and friable gall bladder with difficulty in holding, adhesions around calot's triangle, during Gall bladder dissection from Liver bed, while extracting the Gall bladder.^[3]

MATERIALS AND METHODOLOGY

This study was conducted at the department of General Surgery, Civil hospital, Ahmedabad, all 25 cases of elective cholecystectomies that fell in inclusive criteria. Patients were followed from the time of admission, perioperative period, till the time of discharge, with Complete blood counts, Renal Function Tests, Liver Function Tests, Prothrombin Time, activated Partial Prothrombin Time blood investigations, imaging (USG, CECT when required). Detailed proforma was developed to record information on demographic data, admission details, present history findings, past medical history. The operating details like circumstances of conversion, reasons of conversion were recorded.

Study Duration : 18 months

The patients were initially evaluated in the out-patient department including ultrasound abdomen and then

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admitted for surgery. All patients were screened and those who were not fit for general anaesthesia ASA Grade IV, patients with significant portal hypertension, acute pancreatitis, uncorrectable coagulopathies, suspected / proven malignancy and choledocholithiasis were excluded from the study group.

- Anaesthesia with a standard protocol was given. Prophylactic dose of antibiotic was given just prior to induction. RT insertion with appropriate sized Foley's catheterisation was done after shifting the patient on table.

- In case of method of laparoscopic cholecystectomy, Primary 10mm mbilical (camera) port placement was done by open method as well as veress needle, Second 10mm (main working port) was inserted in epigastrium; third 5mm (accessory working) port placed in the midclavicular line just below the right costal margin. Fourth port 5mm was inserted in Right mid-axillary line to retract gall bladder with holding fundus.

- An abdominal drain (Ryle's tube NO.20) was inserted in cases of bile/stone spillage. The outcomes were measured in terms of operating time, conversion rate, intra-operative complications, immediate postoperative complications, difficulties encountered, pain score, analgesic requirement and hospital stay, Conversion rate include conversion to open cholecystectomy.

SUBJECT SELECTION

INCLUSION CRITERIA :

1. Patients undergoing laparoscopic cholecystectomy
2. Patients with Age > 18 years
3. Patients willing to participate in study and giving informed and written consent.
4. Symptomatic gallbladder disease.

EXCLUSION CRITERIA :

1. Paediatric patients
2. Patients with ASA Grade 4 or more
3. Patients not willing to participate in study and giving informed and written consent.

Table 1 : USG (single/multiple stones)

USG: GB Stone	Present Study	
	No. of Patients (n=25)	Percentage
Single	8	32%
Multiple	17	68%

Table 2 : Difficulties encountered during operation

Difficulties Encountered	Number of Patients
Umbilical port entry	02
Calot's triangle dissection	04
Bleeding from GB Fossa	01
Duct clipping	01
Artery Clipping	--
Difficulty in extraction of gall bladder	01
difficult dissection of the gallbladder wall from the hepatic bed	01
Port-Site Bleeding	01
Pyocele	03
Total	14

Table 3 : Conversion rate

PROCEDURE	TOTAL LAPAROSCOPY ATTEMPTED	SUCCESSFUL LAPAROSCOPY	CASES CONVERTED	CONVERSION RATE
NUMBER OF PATIENTS	25	23	2	0.8%

Reason for conversion were peri-GB adhesions in 1 patient and difficult dissection of cystic artery & cystic duct in 1 patient. Difficult Laparoscopic dissection at Calot's triangle is most common cause of conversion.

DISCUSSION

- In the present study symptomatology distribution of patients shows abdominal pain as a most common symptom While others are Belching, bloating, Vomiting. Uncommon symptoms are nausea & flatulence. Difficulties encountered in this study were difficult identification of anatomical structures, and intra operative haemorrhage, adhesions and pericystic clumps (32%) and acute inflammatory changes in the form of extensive inflammatory infiltration, cholecystocele or empyema of the gallbladder⁽⁴⁾ difficult Calot's Triangle dissection, difficult access to peritoneal cavity and GB Extraction and other factors were higher Body Mass Index, previous multiple Hospitalizations, Palpable Gall bladder.

- In current study, post-operative complications were bile leak in 2 laparoscopic to open converted cases & 01 non-converted, wound infections in 02 patients, incisional

hernia in one converted patients. Epigastric port-site sinus developed in one patient.

• In my study, multiple gall stones were found in 68 %, while in GUPTA et al it is 82 % and in GUPTAAK et al it is 90 % so higher the number of gall stones are there higher the chances of difficult dissection. The majority of the population in this study was young to middle-aged group with the majority of patients falling under the 40-60 year age group and Present study statistics did not show age as significant factors for difficult laparoscopic cholecystectomy which is similar with study done by BUNKER S K et al.⁽⁵⁾ This study showed gall bladder thickness as a significant factor for difficult laparoscopic cholecystectomy which is supported by other studies .⁽⁵⁾

Table 4 : Comparison with other series

Preoperative prediction of difficult laparoscopic cholecystectomy: by Jaskiran S. Randhawa. Aswini K. Pujahari comparing two studies with following points⁽⁶⁾.

Easy/difficult – criteria

Easy	Time taken <60 min no bile spillage, no injury to duct, artery
Difficult	Time taken 60–120 min bile/stone spillage, injury to duct no conversion
Very difficult	Time taken >120 min conversion

Table : 5

	PRESENT STUDY	Randhawa et al
Easy	32 %	78 %
Difficult	48 %	21.9 %
Very difficult	20 %	--

In my study, 48 % patients were scored difficult Laparoscopic Cholecystectomy while 20 % were very difficult while in Randhawa et al, nil in the very difficulty group.

One case was converted to the open procedure within 60 minutes of starting the laparoscopic procedure as there was difficult to approach gall bladder safely due to adhesions & fibrosis. In one case, procedure was converted to open after 60 minutes.

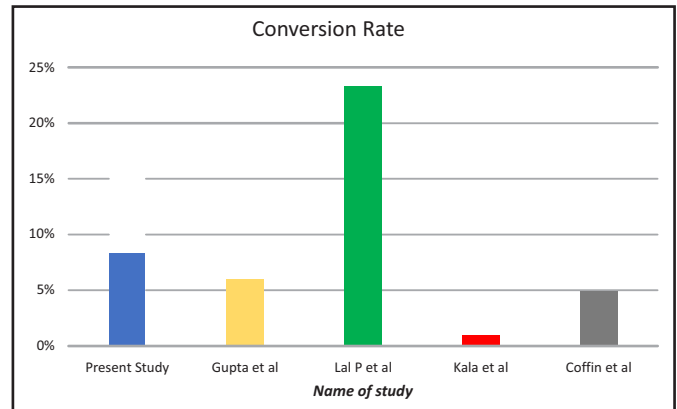
In these series of 25 patients, mean operative time was 84.24 minutes, reason for longer duration are difficult access to peritoneal cavity, difficult dissection around calot's triangle & difficult extraction of gall bladder.

As Shown in above figure, in comparison to other studies, my study has higher conversion rates apart from Lal P et al which has 23.3 % conversion rate.⁽⁸⁾

Table 6 : Conversion Rates

Present Study	Gupta et al ^[7]	Lal P et al ^[8]	Kala et al ^[9]	Coffin et al ^[10]
0.8%	6%	23.3%	0.98%	4.95%

Figure : 1



CONCLUSION

- In my study, most common difficulties encountered are
 - stone impacted at the neck or Hartman's pouch is that it hinders holding of the gallbladder during dissection and also due to impacted stone, the gallbladder is distended.
 - The thickened and contracted gallbladder was difficult to dissect because it had dense adhesions with the surrounding structures and in Calot's triangle.
 - difficulty in GB extraction was there due to multiple stones.
 - Emphyema of GB.
- In my study, Laparoscopic cholecystectomy conversion rate is 08% a bit higher so pre-operatively factors should be assessed like clinically scar over upper abdomen and Palpable Gall Bladder, peri-cholecystic fluid collection and impacted stone.
- A high predicted risk of conversion may allow the surgeon to take an early decision to convert to Open Cholecystectomy when difficulty is encountered during dissection; this may shorten the duration of surgery and decrease the associated morbidity. This requires meticulousness in dissection, special Care to avoid intra-operative complications and experience on part of surgeon to deal with difficulty and Complete the laparoscopic cholecystectomy safely. The key, as in open surgery, is the identification and safe dissection of Calot's triangle^[11]

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Original Articles

A Retrospective Correlation study between HRCT Thorax finding and Severity of Disease in Covid-19 positive Patients at time of admission to Hospital.

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Keywords : Novel coronavirus disease 2019 (COVID-19); HRCT (High Resolution Computed Tomography); RT-PCR; ground-glass opacity.

ABSTRACT

Background : India had reported the 1st case of novel corona virus (COVID-19) on 30 January 2020. Since then there is constantly and rapidly increasing number of cases. So clinical and radiological findings are needed to be studied and explored so that the physicians, radiologist and researchers could gain proper information and guidelines to save more lives. **Objective**: To analyze COVID-19 patients for determining the correlation between HRCT (High Resolution Computed tomography) thorax finding and severity of disease on admission. **Materials and Methods**: To provide extensive information pertaining clinical and radiological characteristics of COVID-19, a retrospective study was conducted including 100 consecutive hospitalized patients at GMERS Medical College and General Hospital Himmatnagar. The study was done by ENT department; under guidance and support of Medicine and Radiology department. The patients were confirmed cases of disease positive by RT-PCR test. Patients' demographics, comorbidities, clinical findings, chest CT results were recorded. The CT findings were correlated with clinical data. **Results**: According to the data, old age (45-65 years) people with most common comorbidity like hypertension were most affected. Fever was the commonest symptom seen among the patients. 3, 32, 51, 14 patients were categorized into mild, moderate, severe and critical groups according to clinical severity respectively. 4, 37, 54 and 5 patients were radiologically categorized correspondingly to grade 0, grade 1, grade 2 and grade 3. Ground glass opacity was the main pulmonary manifestation with bilateral distribution. The statistical result was kappa = 0.632 and P < 0.05. So it was statistically significant and there was a positive correlation between Ct findings and clinical severity of disease. **Conclusions**: Deformities on HRCT Thorax can occur in an early stage of COVID-19 patients, even when RT-PCR results are negative, which can be used in early recognition & evaluation with prompt management of disease.

INTRODUCTION

The rapid outbreak of corona virus disease had started since November 2019 (COVID-19), which arose from severe acute respiratory syndrome corona virus 2 (SARS-CoV-2) infection. The disease has become a public health emergency of international level.⁽¹⁾ COVID-19 has contributed to an enormous adverse effect world widely. COVID-19 infection can lead to a range of clinical outcomes, from asymptomatic to severe life-threatening course or even death. That's why we should characterize epidemiological and clinical comorbid features including recovery and mortality of COVID-19 which are crucial for development and implementation of effective control and management

strategies. A current predictive estimate for the incubation period of disease is usually from 3 to 7 days; up to 14 days.⁽²⁾ As per literature median age of patients is 47–59 years with around 41.9–45.7% of patients are females.⁽³⁾ The old age people with comorbidities are more susceptible to become seriously ill after infection.⁽⁴⁾ Children and infants are also prone for infection. On admission, maximum patients are reported as having at least one or more comorbidities like diabetes, hypertension, and cardiovascular and cerebrovascular diseases, renal failure.^(5,6) The most common presenting clinical symptoms are fever and cough with addition to other non-specific symptoms including breathlessness, headache, muscle soreness, fatigue and tachycardia.⁽⁹⁾

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About 20% of cases are severe, and mortality is approximately 3% ^[10]. The World Health Organization (WHO) had declared a global health emergency situation on January 30, 2020 ^[11].

Thoracic radiology is often a gateway to the evaluation of patients suspected for COVID-19 infection. Early recognition of disease is valuable to ensure proper management and rapid patient isolation for containment of this communicable disease.

A Reverse Transcriptase Polymerase chain reaction gives confirmed diagnosis of COVID-19 infection. It requires identification of viral nucleic acid ^[13]. The CT Thorax imaging results show bilateral pulmonary parenchymal ground-glass and consolidative pulmonary opacities in peripheral lung distribution. There are no lung cavitation, discrete pulmonary nodules, pleural effusions, and lymphadenopathy seen. ^[13]

In this study, we compared the severity of disease, radiologist interpretation and clinical variables in Covid-19 patients.

MATERIALS & METHOD

Study Design: The present retrospective study analysis was done on 100 randomly selected patients admitted in GMERS Medical college and general hospital, Himmatnagar, Gujarat, from 1st August to 31st October 2020. The patients with clinical symptoms including fever, chills, fatigue, myalgia, cough, sputum production, sore throat, chest pain, shortness of breath, headache, anorexia, nausea, and vomiting, diarrhea and loss of consciousness with or without associated comorbidities were presented to our hospital. The patients were divided into 3 groups according to years; Group 1(25-45 years), Group 2 (46-65 years), Group 3(66-85 years). All Patients were assessed for temperature, pulse, blood pressure, respiratory rate, capillary oxygen saturation (spo2) are measured. Patient with breathlessness, hypoxemia (spo2<93%), rapid respiratory rate (> 30 per minute), fever (temperature >37.8 degree Celsius) with risk factors (cardiovascular disease, hypertension, diabetes mellitus, renal dysfunction, immunocompromised patient {HIV positive, malignancy, corticosteroid therapy, chemo-radio therapy, organ transplantation} etc.) any of above symptoms or disease were tested for RT-PCR and HRCT Thorax.

According to National institute of health (NIH) latest guidelines; Adults with SARS-CoV-2 infection can be grouped into the following severity of illness categories. (However, the criteria for each category may overlap or vary across clinical guidelines and clinical trials, and a patient's clinical status may change over time.)

Severity of illness categories:

- **Asymptomatic or Presymptomatic Infection:** Individuals who test positive for SARS-CoV-2 using a virologic test [i.e., a nucleic acid amplification test (RT-PCR) or an antigen test], but who have no symptoms that are consistent with COVID-19.
- **Mild Illness:** Individuals who show any signs and symptoms (e.g., fever, cough, sore throat, malaise, headache, muscle pain, nausea, vomiting, diarrhea, loss of taste and smell) but who do not have shortness of breath or abnormal chest imaging.
- **Moderate Illness:** Individuals who are suggestive of lower respiratory infection during clinical assessment or imaging and who have saturation of oxygen (SpO₂) ≥94% on room air.
- **Severe Illness:** Individuals who have SpO₂ <94% on room air at sea level, a ratio of arterial partial pressure of oxygen to fraction of inspired oxygen (PaO₂/FiO₂) <300 mmHg, respiratory frequency >30 breaths per minute, or lung infiltrates >50%.
- **Critical Illness:** Individuals who have respiratory failure, septic shock, and/or multiple organ dysfunctions.

Patients having underlying comorbidities are at a greater risk of development of severe disease.

The patients underwent multislice high resolution CT scan of the thorax. It was performed using volume acquisition from the apices to the lung bases; using thin cuts on a 16 slice MDCT, without IV administration of contrast. The results were classified as CO-RADS, as given below.

[CO-RADS, the COVID-19 Reporting and Data System]

Below there is overview of CO-RADS Categories and the Corresponding Level of Suspicion for Pulmonary Involvement in COVID-19 given in description.

CO-RADS Category	Level of Suspicion for Pulmonary Involvement
0	Not interpretable Scan technically insufficient for assigning a score
1	Very low Normal or noninfectious
2	Low Typical for other infection but not COVID-19
3	Equivocal/unsure Features compatible with COVID-19 but also other diseases
4	High Suspicious for COVID-19
5	Very high Typical for COVID-19
6	Proven RT-PCR positive for SARS-CoV-2

CO-RADS Category 0

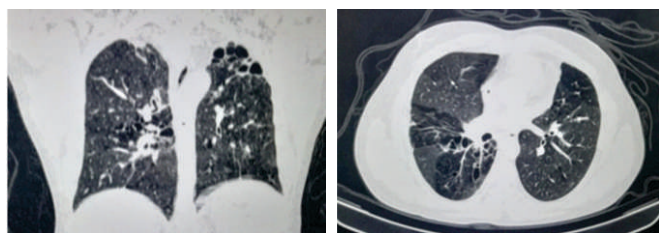
It is taken if none of the categories can be assigned due to scans are incomplete or of insufficient quality e.g. severe artifacts due to coughing or breathing or uncooperative patients' movement.

CO-RADS Category 1

It suggest a very low level of suspicious for lung involvement by COVID-19 depend on either normal CT results or CT findings of noninfectious origin diseases like congestive cardiac failure, sarcoidosis, histoplasmosis. This category is defined as “negative for pneumonia” category of the RSNA consensus statement⁽¹³⁾.

CO-RADS Category 2

It suggests level of suspicion of COVID-19 infection is low based on CT findings in the lungs typical of infectious origin like bronchitis, infectious bronchiolitis, bronchopneumonia, lobar pneumonia, and pulmonary abscess.⁽¹¹⁾

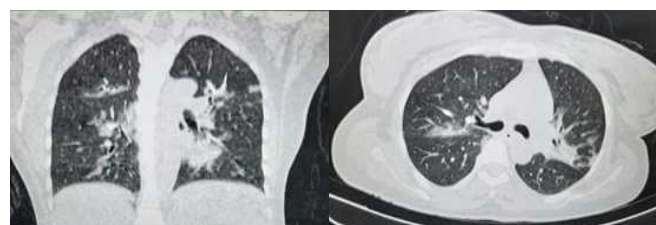


Above picture shows mosaic pattern of attenuation in right upper, middle & lower lobes and left lower lobe. Traction and cystic bronchiectatic changes noted in left upper and right lower lobe.

CO-RADS Category 3

It implies equivocal findings for lung involvement of COVID-19 patients based on CT features which are similar to viral pneumonias or noninfectious causes. Findings include perihilar ground-glass opacity,

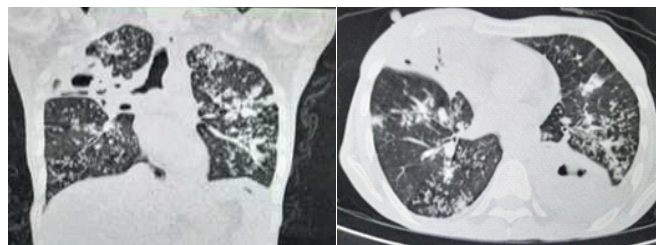
homogenous extensive ground-glass opacity with or without sparing of some secondary pulmonary lobules, or ground-glass opacity together with smooth interlobular septal thickening with or without pleural effusion in the absence of other typical CT findings(11).



Above picture shows multiple patches of ground glass opacities with interlobular septal thickening in bilateral perihilar region & also consolidation also seen.

CO-RADS Category 4

The suspicion level is very high for pulmonary involvement by COVID-19 based on CT findings that are typical suggesting for COVID-19. Findings include U/L ground glass opacity, multifocal consolidation without any other typical findings. They are similar to findings of CO-RADS category 5; however, they are not in contact with the visceral pleura.(11)

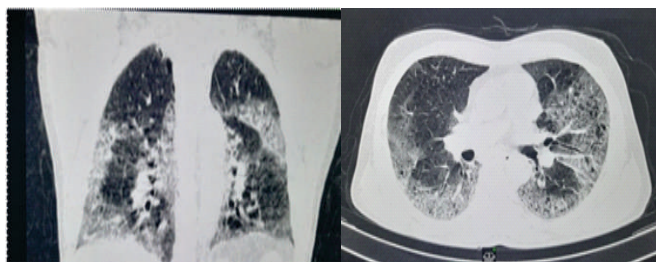


Above picture shows few patchy areas of ground glass opacities and fibro-cavitary lesions with multiple thick wall cavities.

CO-RADS Category 5

It advocates a very high level of suspicion for lung involvement by COVID-19 based on typical CT findings

include bilateral distribution of multifocal ground-glass opacities with or without consolidations in lung regions close to visceral pleural surfaces, including the fissures, the minor or major fissure is also typical. The crazy paving pattern might appear later in the course of the disease, it shows visible intra-lobular lines. It is largely identical to the typical appearance of the RSNA consensus statement (11).



Above picture shows Diffuse patches of ground glass opacities with interlobular and intralobular septal thickening with crazy paving pattern.

CO-RADS category 6

It indicates proven case of COVID-19 with positive RT-PCR tests, similar to BI-RADS category 6. (11)



Above picture shows multiple areas of ground glass opacities with interspread septal thickening giving crazy paving pattern bilaterally.

The HRCT thorax was done in all patients after doing RT-PCR. The CT thorax images were evaluated for the different following characteristics as mentioned above in CORAD categories: (1) ground-glass opacity (GGO); (2) consolidation; (3) crazy-paving pattern; (4) cavitation; (5) nodular pattern (6) lymphadode status; (7) pleural effusion. The number of lung lob involvement and the lesion distribution in different areas were also noted. Ground glass opacity was defined as hazy area with increased lung attenuation with preservation of bronchial and vascular margins, and consolidation was defined as opacification of area with obscuration of margins of vessels and airway walls. Crazy paving pattern was

defined as the appearance of GGO area with overlapping interlobular and intralobular septal thickening. (12)

Statistical analysis:

The clinical features and incidence of chest CT findings were described as frequency rates and percentages. Correlation between severity of pulmonary involvement on chest CT and clinical classification was assessed using kappa test. Statistical analysis was performed using QuickCals from GraphPad, a versatile statistics tool.

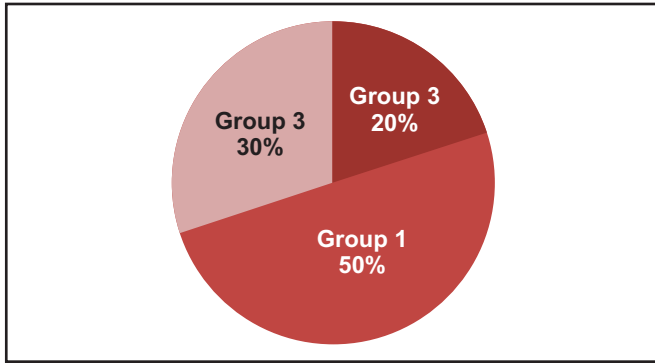
Results:

Starting from 1st August to 31st October 2020, serial data from 100 patients was collected from which 98 patients were RT-PCR positive for Covid-19 and 2 patients were negative RT-PCR but suspected for Covid-19 clinically. The group 2 which involve age from 46 to 65 years had highest number of distribution i.e.50 patients (50%). Males (58%) were predominant over Females (42%). Hypertension [54 patients (54%)] was the most common comorbidity seen in several aged patients. Other comorbidities were diabetes in 35 patients (35%), ischemic Heart disease in 8 patients (8%), malignancy in 4 patients (4%), cerebrovascular disease (Stroke) in 2 patients (2%), Tuberculosis in 3 patients (3%), COPD in 8 patients (8%), chronic kidney disease in 2 patients (2%) ,chronic liver disease in 4 patients (4%),hypothyroid disease in 5 patients (5%), asthma in 3 patients (3%) .Fever was the most common symptom seen in 87 patients (87%) followed by dry cough in 70 patients (70%). Other symptoms were seen as following dyspnea in 55(55%), fatigue in 45(45%), headache in 30(30%), muscle pain in 25(25%), throat pain in 25(25%), abdominal pain in 21(21%), diarrhea in 21(21%), nausea in 20(20%), dizziness in 12(12%) and vomiting seen in 12(12%) patients. The oxygen saturation was above 94% seen in 35 patients (35%) and below 94% seen in 65 patients (65%). The days from starting of symptoms to visit to hospital ranges from 2 to 10 days (median 6 days). According to NIH latest guidelines we summarized above data and categorized patients into 4 different types as following mild, moderate, severe and critical as 3 patients, 32 patients, 51 patients, 14 patients.

Table 1: Demographic and baseline characteristics of COVID-19 patients (n = 100).

Age, years	Group 1(25-45) =20(20%) Group 2 (46-65) =50 (50%) Group 3 (66-85) =30 (30%)
Sex	Male=58 (58%) Female=42 (42%)
Comorbidities:	
Hypertension	54 (54%)
Diabetes	35 (35%)
Ischemic Heart disease	8 (8%)
Malignancy	4 (4%)
Cerebrovascular disease (Stroke)	2 (2%)
Tuberculosis	3 (3%)
COPD	8 (8%)
Chronic kidney disease	2 (2%)
Chronic liver disease	4 (4%)
Hypothyroid disease	5 (5%)
Asthma	3 (3%)
Signs and symptoms:	
Fever	87 (87%)
Dry cough	70 (70%)
Dyspnea	55 (55%)
Fatigue	45 (45%)
Headache	30 (30%)
Muscle pain	25 (25%)
Throat pain	25 (25%)
Abdominal pain	21 (21%)
Diarrhea	21 (21%)
Nausea	20 (20%)
Dizziness	12 (12%)
Vomiting	12 (12%)
Days from onset of symptoms to first Visit to hospital	2 to 10 days Median 6 days
Time duration between HRCT Thorax and admission to hospital	24 to 48 hours
Vitals:	Median
Heart rate	100 (60 to 140) bpm
Respiratory rate	21 (12 to 30) per min
Mean arterial pressure	95 (60 to 130) mmHg
Saturation of oxygen(SPO2) :	
> 94%	35 (35%)
< 94%	65 (65%)
Clinical severity:Mild	3 (3%)
Moderate	32 (32%)
Severe	51 (51%)
Critical	14 (14%)

Age Distribution of COVID-19 Positive Patients.



Group 2 which include 46 to 65 years had highest predominance for Covid-19.

Each of the lung lobes was assessed by using a particular scoring system: 0= no involvement to a lobe (0%), 1= minimal involvement to a lobe (1–25%), 2= mild involvement to a lobe (26–50%), 3= moderate involvement to a lobe (51–75%) and 4= severe involvement to a lobe (76–100%). An overall score was calculated by summing the cores of five lobe scores (range of possible scores, 0–20). And the severity of pulmonary involvement on CT scan was classified on a

Table No : 2; CT Thorax finding in (n= 100) COVID-19 patients

Finding	Value
Ground glass opacity	80 (80%)
Consolidation	75 (75%)
Crazy-paving pattern	20(20%)
Nodular pattern	15(15%)
No. of lobes affected	
0	3 (3%)
1	7 (7%)
2	13 (13%)
3	15 (15%)
4	30 (30%)
5	32 (32%)
Central distribution	3(3%)
Peripheral distribution	60 (60%)
Bilateral distribution	85 (85%)
Total lung severity score	
Mean	8
Range of score	0–20
Other findings	
Pleural effusion	1 (1%)
Lymphadenopathy	0 (0%)

4-point ordinal scaling chart: grade 0 score of 0 (No abnormality present on CT), grade one score of 1–5, grade two score of 6–15 and grade three score of 16–20 (11). If the patient has a series of CT scans, the most severe one during hospitalization was to be assessed using this scoring system.

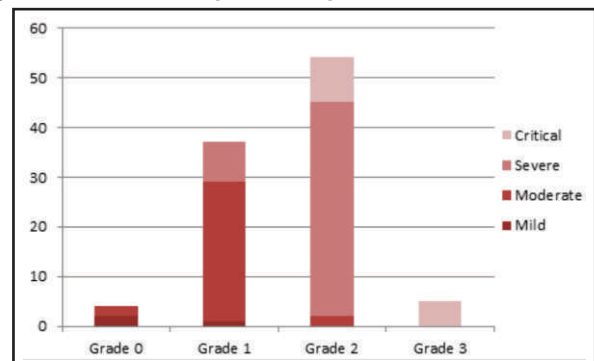
As mentioned in Table no. 2; Out of the 100 patients, GGO was demonstrated in 80 cases (80%), consolidation was demonstrated in 75 cases (75%) and crazy-paving pattern was demonstrated in 20 cases (20%) and in 15(15%) cases nodular pattern seen. 60 cases (60%) had a peripheral distribution, 3 cases (3%) had central distribution and 85 cases (85%) demonstrated bilateral lung involvement. Only 1 patient had displayed pleural effusion. None case presented with cavitation or mediastinal lymphadenopathy. The total lung severity score ranged starting from 0 to 20, with a mean score of 8. Furthermore 4, 37, 54 and 5 patients were radiologically categorized to grade 0, grade 1, grade 2 and grade 3, respectively.

Table No: 3; Correlation between severity of lung involvement on HRCT Thorax series and clinical severity classification.

Clinical Classification	Extent of severity of lung involvement on chest CT				
	Grade 0	Grade 1	Grade 2	Grade 3	Total
Mild	2	1	0	0	3
Moderate	2	28	2	0	32
Severe	0	8	43	0	51
Critical	0	0	9	5	14
Total	4	37	54	5	100

There was significant correlation present between severity of lung involvement on chest CT scan and clinical classification (kappa =0.632, Standard error of kappa=0.067, P<0.05, 95% confidence interval: From 0.501 to 0.763).

Figure no 1: It is Graphical Representation of Table no.3



DISCUSSION

Figure no 2:

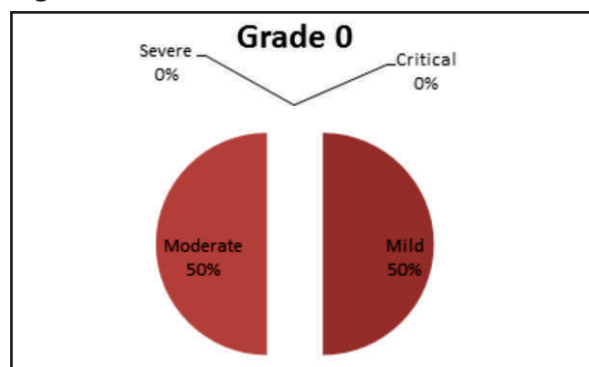


Figure no 3:

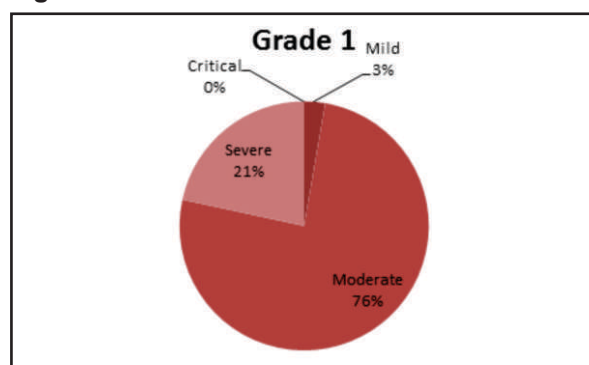


Figure no 4:

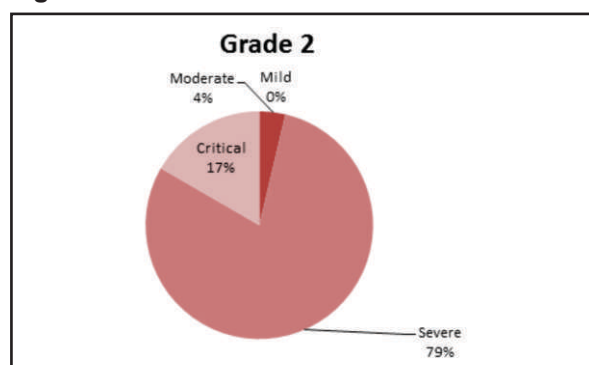
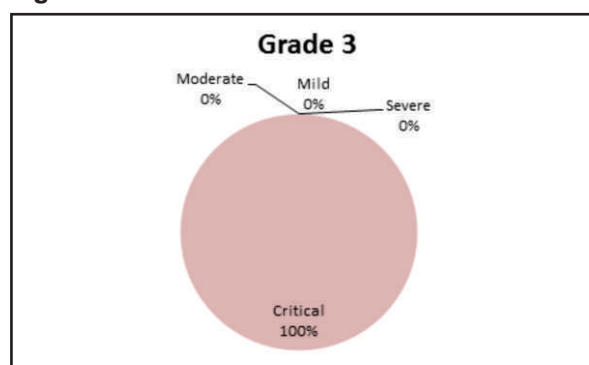


Figure no 5:



Above figure no 2,3,4,5 show clinical severity of disease in each CT grade separately.

The Covid-19 becomes a national health emergency since March in India, though 1st case noted in January. Disease progression in patients remains absolutely characterized; early isolation and supportive treatment are recommended for the infected patients at early stage.(13) Therefore prompt recognition of suspected patients is crucial to speed up treatment and quick isolation for better outcome. The data shows that old age patients especially 46 to 65 years with associated comorbidities have higher chances to be affected. This is associated with the standard data.(3) The most common symptoms at time of admission were fever, cough, dyspnea, fatigue and headache. A total of 98 patients from our center were definitively diagnosed as COVID-19 positive by RT-PCR. Though, 2 patients with negative RT-PCR had displayed GGO or consolidations in CT findings. A similar study had reported previously that out of 167 confirmed COVID-19 patients, five cases with initial negative RT-PCR, displayed typical chest CT findings of 2019-nCoV pneumonia (14), so it shows the importance of chest CT examination in patient screening and early disease diagnosis.

HRCT Thorax in our study had shown different variety of patterns in which GGO followed by consolidation was seen in majority of cases. The lesion was distributed bilaterally predominantly in peripheral lung fields. However, our patient sample was unique from other cases of COVID-19 series in relation to that relative brief interval between initial CT scan and onset of symptoms as we were doing CT scan in patients just after RT-PCR test came positive. So this was the limitation of our study and we had not compared the follow up CT scan after a period of time. The other limitations were the whole data in current series came from a single center and then the proportion of critical cases and the mortality in our series might be inconsistent with reports of different studies. On other hand, in our set up many stable patients preferred home isolation with medications; so the ratio of stable patients in grade 0 and 1 is less compare to grade 2 and 3 as we had collected the whole data in admitted patients.

The remarkable thing present in our study that, even if confirmed COVID-19 infection with mild to moderate

clinical severity; four patients out of current series of 100 have normal images on the initial chest CT scan. The negative imaging in confirmed COVID-19 patients shows that HRCT Thorax scan lacks complete sensitivity and cannot alone totally exclude the disease. However, with initial CT chest needs confirmation for prediction of disease and its outcome. Clinical assessment and blood investigations are important supportive factors for estimating the severity and further management of the patient.

The summary of study is; we described a screening coordination using HRCT Thorax combined RT-PCR assay to detect COVID-19 suspected patient and reported the chest CT features of COVID-19 patient. Bilateral lung involvement with peripheral distribution of GGO and consolidation are the most common indices. Abnormalities on chest CT can appear in a very early stage of COVID-19, so it helps in early recognition & evaluation with prompt management of disease. Moreover, we primarily reported that on HRCT thorax, the severity of pulmonary involvement is expressively consistent with clinical severity of COVID-19 positive patients. Then it helps in further management of patients. We hope our data and results might help radiologists, physicians including larger public health surveillance and response systems for better outcome and control of disease.

CONCLUSION

Deformities on HRCT Thorax can occur in an early stage of COVID-19 patients, even when RT-PCR results are negative, which can be used in early recognition & evaluation with prompt management of disease. CT grading can aid to identify patient's risk and calculate outcome of patients with COVID-19.

The severity of CT lesions is highly correlated with clinical staging. Ultimately, our study provisions the use of HRCT Thorax in COVID-19 patients which might be used as an early and effective gatekeeper to rule-out patients with a lower probability of disease.

Funding : Nil

Conflict of Interest : Nil

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Pregnancy Beyond 40 Weeks and Feto-Maternal Outcomes

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Keywords: Induction of labour, Prolonged pregnancy, Perinatal morbidity, first trimester Ultrasound.

ABSTRACT

Background : pregnancy beyond 40 weeks associated poor feto maternal and neonatal outcomes.several evidences showed poor perinatal outcomes in pregnancy beyond 40 weeks.This study conducted to find out the fetomaternal outcome of pregnancy beyond 40 weeks.

Methods : Study is prospective cross sectional study.Total 76 patients with uncomplicated prolonged pregnancy filling inclusion and exclusion criteria and admitted in department of obstetrics and gynecology at a tertiary care hospital.The Study aim was to know fetomaternal outcome in pregnancy beyond 40 weeks in regards of spontaneous and induced labour.

Results : 46 (60.52%) patients were in the age group of 20-30 years,42 (55.26%) were between 41-42 weeks of gestation according to their LMP. In 17 (22.36%) patients mode of delivery was caesarean section, in whom most common indication being fetal distress in 41.17% followed by failure to progress in 23.52%. In present study perinatal morbidity like lufd,neonatal asphyxia, MAS, RDS were 5.26%, 9.21%, 7.89% and 5.26% respectively. Maternal morbidity like prolonged labor, PPH, fever, wound infection were 11.84%, 9.21%, 5.26% and 5.26% respectively.

Conclusions: If patient take regular antenatal check-up, incidence of postdate pregnancy can be decreased and it is required because there is definite risk to fetus as pregnancy continuing beyond 40 weeks of gestation is associated with increased perinatal morbidity and mortality especially those who do not come for regular antenatal check-up.Exact term of pregnancy must be confirmed because it is very important as many patients don't have regular menstrual history and LMP.Exact Last menstrual period date confirmed by first trimester ultrasound which is most important non-invasive method and readily available.

INTRODUCTION

Post-term pregnancy as a pregnancy with a gestational age of 42 completed weeks or more and term pregnancy was defined as a pregnancy with gestational age from 3 weeks before till 14 days after the EDD.^[1]

In 2012,American college of obstetricians and gynaecologists(ACOG),and the society for maternal-fetal medicine (SMFM) recommended that the label "term" be replaced by early term, full term, late term and post-term to more accurately describe deliveries occurring at or beyond 37 weeks of gestation.^[2]

- Early term: 37 to 38 weeks plus 6 days
- Full term:39 weeks to 40weeks plus 6 days
- Late term: 41 weeks to 41 weeks plus 6 days
- Post-term: 42 weeks and beyond

The adverse neonatal outcome is lowest among uncomplicated pregnancies delivered between 39 and 40weeks and 6 days of gestation.^[3,4]

The most frequent cause of prolonged pregnancy is inaccurate dating.^[5,6]

The risk factors for prolonged pregnancy are primiparity, maternal genetic factors, previous postdatism,obesity and male gender of the fetus.^[7,8]

Criteria for diagnosing postdates are correlation of menstrual history, clinical findings and first trimester USG.

In postdate pregnancy there are chances of intra uterine fetal death fetal hypoxia, intra uterine asphyxia, intracranial damage, meconium aspiration syndrome, macrosomia, atelectasis, hypoglycemia and stillbirths.

These perinatal risks increases with increase in the gestational age beyond 40 weeks.^[9,10]

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The maternal risks include obstructed labor, an increase in severe perineal injury related to macrosomia and operative vaginal delivery and an increase in the rate of cesarean delivery and postpartum hemorrhage.^[11,12]

In this study, fetal and maternal outcome was studied in pregnancy beyond 40 weeks in consideration of spontaneous and induced labor

METHODS

Study is a prospective cross sectional study done in Tertiary Care hospital in Obstetric and Gynecology Department.

Source of the patient: Patients attended ANC OPD and patients admitted in labor wards were included with consideration of inclusion and exclusion criteria.

Patient selection

By random selection fulfilling following criteria

- Those who crossed expected date of delivery.
- Vertex presentation
- Surety of LMP
- Singleton pregnancy
- One first trimester USG
- Taken First visit in first or second trimester

Total 100 patients were selected.

After per abdominal examination and per vaginal examination^[13] i.e. assessment of bishop's score^[14], every patient was studied under respective groups.

Bishop score >6 is considered as a favourable cervix and <5 are as unfavourable.

All 76 patients were divided under Group 1 and Group 2 ,

In group 1 which 38 patients were included and labeled as spontaneous group.

Group II, in which 38 patients were included and labeled as induction group.

On admission following investigations were done:

- USG

- Fetus monitoring by cardiotocography and Non stress test Sand Biophysical profile
- Doppler flow study

To all, history of perception of fetal movements was asked and correlated with the history and well being of the fetus.

A patient was considered postdate, correlating her LMP (Naegele's rule^[15]), clinical examination and first trimester ultrasound findings.

In spontaneous group fetal heart rate recorded every 30 mins in the first stage and every 15 minutes in the second stage of labor.

After ARM the liquor color was noted, can be clear, meconium stained, or thick meconium. If the liquor was thick meconium and spontaneous delivery was not possible, then the decision of LSCS was taken.

If the liquor was meconium stained then the decision of LSCS was taken according to the fetal heart rate and non stress test. Winkel et al empirically set the limits of normal fetal heart rates of 120-160 b/min.^[16]

Accordingly the mode of delivery, maternal and perinatal outcome was considered.

Group II included the patients who were not in labor and were for the induction after evaluation.

For induction of labor Dinoprostone gel^[17] was used. Then the patients were observed for uterine contractions and strict fetal heart rate monitoring.

After 6 hrs of dinoprostone gel instillation per vaginal examination was done. Again after 6 hrs per vaginal examination was done and if cervix was favourable, oxytocin augmentation was done after assessing the uterine contractions.

In both groups augmentation was done with ARM with good cervical dilatation and oxytocin drip started as per need. If per vaginal findings were same after second (repeat instillation), it was labelled as failure of induction, and decision of caesarean section was taken.

The color of liquor was seen after ARM, if it was meconium stained or thick meconium, then the decision was taken for LSCS.

TABLE 1 : Modified Bishop score classification

Score	0	1	2	3
Cervical dilatation	closed	1-2cm	3-4cm	5+cm
Cervical length	>4cm	3-4cm	1-2cm	<1cm
Station	-3	-2	-1,0	+1,+2
Consistency	Firm	Moderate	soft	
Position	Posterior	Mid	Anterior	

TABLE 2 : Distribution of cases according to the age of patients

Age in years	Number of patients	Percentage (%)
<20	26	34.21%
20-30	46	60.52%
>30	4	5.26%
Total	76	100%

TABLE 3: Distribution of cases according to gestational age by dates and USG

Gestational age in weeks	Gestational age by dates NO.(%)	Gestational Age by USG NO.(%)
40-41	32(42.10%)	27(35.21%)
41-42	42(55.26%)	48(63.15%)
>42	2(2.63%)	1(1.31%)
Total	76(100%)	100%

TABLE 4 : Distribution of cases according to DFMC

DFMC	NO.	%
Normal	70	92.10%
Decreased	3	3.94%
Lost	3	3.94%
Total	76	100%

TABLE 5 : Distribution of cases according to the mode of delivery

Mode of delivery	Group 1	Group 2
	No.(%)	No.(%)
Vaginal	26(68.42%)	29(76.31%)
Instrumental	3(7.89%)	1(2.63%)
Lscs	9(23.68%)	8(21.05%)
Total	38(100%)	38(100%)

TABLE 6 : Distribution of cases according to the indication of LSCS

Indication of LSCS	Group 1	Group 2
	No. (%)	No. (%)
Fetal distress	04(44.44%)	3(37.5%)
Failure to progress	02(22.22%)	02(25%)
Failure of induction	00	02(25%)
Failure to descent	01(11.11%)	00
Severe oligo	00	00
MSL	02(22.22%)	01(12.5%)
Total	9(100%)	8(100%)

TABLE 7 : Distribution of cases according to the Apgar score at 5 minutes

Apgar score at 5 minutes	Group 1	Group 2
	No. (%)	No. (%)
<7	03(7.89%)	02(5.26%)
>7	35(92.10%)	36(94.73%)
Total	38(100%)	38(100%)

TABLE 8 : Distribution of cases according to the neonatal outcome

Neonatal morbidity	Group 1	Group 2
	No. (%)	No. (%)
IUFD	2(16.66%)	2(22.22%)
Neonatal asphyxia	04(33.33%)	03(33.33%)
MAS	04(33.33%)	2(22.22%)
RDS	02(16.66%)	02(22.22%)
Total	12(100%)	9(100%)

TABLE 9 : Distribution of cases according to maternal morbidity

Maternal morbidity	Group 1	Group 2
	No. (%)	No. (%)
Prolonged labor	03(30%)	06(42.85%)
PPH	04(40%)	03(21.42%)
Fever	02(20%)	02(14.28%)
Wound infection	01(10%)	03(21.42%)
Total	10(100%)	14(100%)

The data gathered of all 76 patients analyzed.

The primary aim is to know neonatal outcome in the form of neonatal morbidity and mortality. Also maternal morbidity and mortality were studied.

Other measures studied were mode of delivery and need for caesarean section. Patients were followed up to 7 days after delivery; maternal and fetal morbidity or mortality was recorded

RESULTS

In 17 (22.36%) patients mode of delivery was caesarean section, in whom most common indication being fetal distress in 41.17% followed by failure to progress in 23.52%. In present study perinatal morbidity like IUD, neonatal asphyxia, MAS, RDS were 5.26%, 9.21%, 7.89% and 5.26% respectively. Maternal morbidity like prolonged labor, PPH, fever, wound infection were 11.84%, 9.21%, 5.26% and 5.26% respectively

DISCUSSION

Majority of the patients belong to age group 20-30 years (60.52%) followed by <20 years (34.21%).

According to gestational age by dates, majority of cases were between 41-42 weeks 55.26%. Only 2.63% were more than 42 weeks.

When gestational age was calculated by first ultrasound, majority of cases were between 41-42 weeks and 1.31% patients were >42 weeks. Out of 76 patient 04 (5.26%) were diagnosed IUFD with loss of fetal movements.

Majority of patients (92.10%) were having normal DFMC.

Majority of patients were having similar FHR pattern in both groups.

In Group I, 23.68% were needed LSCS, In Group II 21.05% were needed LSCS.

The commonest indication for LSCS in both Group was fetal distress and second fail to progress.

Runa Heimstad et al.25, and Morris et al. (2003) studied similar results.

James Alexander et al.21, studied fetal distress as the most common indication for LSCS in Group I while both fetal distress and failure to progress in Group II.

Majority of babies (93.42%) were having Apgar score >7. Singal P et al.^[18], James Alexander et al.^[19] and Heimstad R et al.^[20] found similar results as present study.

Out of 76 patients, 4 (5.26%) were diagnosed IUFD, 7 (9.21%), 6(7.89%) and 4(5.26%) neonates having asphyxia, MAS and RDS respectively.

In present study maternal morbidity such as like prolonged labor, PPH, fever, wound infection were 11.84%, 9.21%, 5.26% and 5.26% respectively

CONCLUSION

If patient take regular antenatal check-up, incidence of postdate pregnancy can be decreased and it is required because there is definite risk to fetus as pregnancy continuing beyond 40 weeks of gestation is associated with increased perinatal morbidity and mortality especially those who do not come for regular antenatal check-up. Exact term of pregnancy must be confirmed because it is very important as many patients don't have regular menstrual history and LMP. Exact Last menstrual period date confirmed by first trimester ultrasound which is most important non-invasive method and readily available.

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Study of Different Types of Glaucoma Burden in Patient Visiting at a Tertiary Care Hospital.

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Keywords: Different types of Glaucoma Burden

INTRODUCTION

The word glaucoma originally meant 'clouded' in Greek; as such, it may have referred either to a mature cataract or to corneal edema that might result from chronic elevated pressure.

- Glaucoma cases were defined according to the International Society of Geographical and Epidemiologic Ophthalmology (ISGEO) criteria based on three categories. Category 1 cases were defined as optic disc abnormality (VCDR/VCDR asymmetry \pm 97.5 percentile of the normal population or NRR width between 11 and 1 O'clock or 5 and 7 O'clock reduced to \leq 0.1 VCDR), with a corresponding glaucomatous visual field defect. Category 2 cases were defined as having a severely damaged optic disc (VCDR or VCDR asymmetry \pm 99.5 percentile) in the absence of adequate performance in a visual field test.^[1,2]
- Glaucoma is the leading cause of global irreversible blindness. It has been estimated that 60.5 million people were affected by primary open-angle glaucoma (POAG) and primary angle-closure glaucoma (PACG) globally in 2010.^[3-5]
- Globally, POAG affects more people than angle-closure glaucoma (ACG) – with an approximate ratio of 3:1, and wide variations among populations.^[10] Yet ACG manifests in a much more aggressive and debilitating course (especially among Asians) than was recognized a generation ago: its treatment usually requires more than iridotomy alone, frequent medical or surgical intervention^[11]
- Glaucoma is generally asymptomatic until late in the disease, at which point permanent visual problems arise.^[6] Therefore early detection and appropriate treatment is essential^[7], which can be facilitated by better knowledge of glaucoma distribution.^[13]

- Therefore, we wanted to provide new epidemiologic information about burden of different types of glaucoma among patient visiting tertiary care hospital.

CLASSIFICATION OF GLAUCOMA

- We propose to simplify glaucoma classification into three major divisions, which are subdivided into primary and secondary categories:
 - (1) angle-closure glaucoma;
 - (2) open-angle glaucoma; and
 - (3) developmental glaucoma, in which some anomaly of the anterior segment manifests in the first years of life.^[1,14,15]

(1) ANGLE-CLOSURE GLAUCOMA

A. Primary angle-closure disease

I. Natural history

- a. Primary angle closure suspect
- b. Primary angle closure
- c. Primary angle-closure glaucoma

II. Anterior segment mechanisms of closure

- a. Iris–pupil obstruction (e.g., 'pupillary block')
- b. Ciliary body anomalies (e.g., 'plateau iris syndrome')
- c. Lens–pupil block (e.g., 'phacomorphic block' (swollen lens or microspherophakia))

B. Secondary angle-closures

I. Anterior 'pulling mechanism'

- a. Neovascular glaucoma
- b. Iridocorneal endothelial syndromes (e.g., Chandler's syndrome)
- c. Posterior polymorphous dystrophy
- d. Epithelial downgrowth
- e. Fibrous ingrowth

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- f. Flat anterior chamber
- g. Inflammation
- h. Penetrating keratoplasty
- i. Aniridia

II. Posterior 'pushing mechanism'

The iris is pushed forward by some condition in the posterior segment. Often the ciliary body is rotate anteriorly, allowing the lens to come forward also.

- a. Ciliary block glaucoma (malignant glaucoma)
- b. Cysts of the iris and ciliary body
- c. Intraocular tumors
- d. Nanophthalmos
- e. Suprachoroidal hemorrhage
- f. Intravitreal air injection (e.g., retinal pneumopexy)
- g. Ciliochoroidal effusions (e.g., panretinal photocoagulation)
 - (a) Inflammation (e.g., posterior scleritis)
 - (b) Central retinal vein occlusion
- h. Scleral buckling procedure
- i. Retrolental fibroplasias

2) Open-angle glaucoma

A. Primary open-angle glaucoma

B. Secondary open-angle glaucoma

- a. Pigmentary glaucoma
- b. Pseudoexfoliation glaucoma
- c. Steroid glaucoma
- d. Lens-induced glaucoma
- e. Glaucoma after cataract surgery
- f. Glaucoma after trauma
- g. Glaucoma associated with intraocular hemorrhage
- h. Glaucoma associated with retinal detachment
- i. Glaucoma after vitrectomy
- j. Glaucoma with uveitis
- k. Glaucoma with intraocular tumors
- l. Amyloidosis
- m. Increased episcleral venous pressure

3) Developmental glaucoma

A. Primary congenital (infantile) glaucoma

- a. Congenital glaucoma
- b. Autosomal dominant juvenile glaucoma
- c. Glaucoma associated with systemic abnormalities
- d. Glaucoma associated with ocular abnormalities

B. Secondary glaucoma

- a. Traumatic glaucoma
- b. Glaucoma with intraocular neoplasm
- c. Uveitis glaucoma
- d. Lens-induced glaucoma
- e. Glaucoma after congenital cataract surgery
- f. Steroid-induced glaucoma
- g. Neovascular glaucoma
- h. Secondary angle-closure glaucoma
- i. Glaucoma with elevated episcleral venous pressure
- j. Glaucoma secondary to intraocular infection

AIMS AND OBJECTIVES

To determine burden of different types of glaucoma among patients visiting the tertiary care hospital from 2016 to 2017.

MATERIALS AND METHODOLOGY

- Cross-sectional study of 3400 patients visiting our hospital during year 2016-2017.
- All Participants underwent a standardized examination including slit-lamp biomicroscopy, Goldmann applanation tonometry, and optic disc assessment. Participants suspected to have glaucoma also underwent .
- visual field examination (24-2 & 30-2 SITA standard, Humphrey Visual Field Analyzer II), gonioscopy, and repeat applanation tonometry.
- Patients were diagnosed and classified into suitable subtype of glaucoma and Prevalance was calculated for each subtype.

DIAGNOSTIC DEFINITIONS

POAG

Primary open-angle glaucoma (POAG) can be considered a chronic, progressive, anterior optic neuropathy that is accompanied by a characteristic cupping and atrophy of the optic disc, visual field loss, open angles, and no obvious causative ocular or systemic conditions. In the m

ajority, but by no means all, cases the intraocular pressure (IOP) is elevated above the statistically 'normal' range, reflecting a reduced aqueous humor outflow facility.^[1,12]

PACG

Greater than 270° of irido-trabecular contact plus elevated IOP plus optic nerve and visual field damage. In

other words, angle closure glaucoma manifests the criteria of closure, plus demonstrable disc and/or visual field changes. The angle is abnormal in structure and function, with optic neuropathy.^[1,2]

Pigmentary Glaucoma

Pigmentary glaucoma is a secondary form of open-angle glaucoma produced by pigment dispersion in the anterior segment of the eye.^[1,12]

Pseudoexfoliative glaucoma

Pseudoexfoliative glaucoma (previously or classically known as pseudoexfoliation syndrome) occurs when several ocular tissues synthesize an abnormal protein. This protein may obstruct the trabecular meshwork and cause glaucoma.^[1,2]

Absolute Glaucoma

Absolute glaucoma is the end stage of all types of glaucoma. The eye has no vision, absence of papillary light reflex and papillary response and has a stony appearance.^[1,12]

Steroid induced (SI) glaucoma

Patients who experience a transient or sustained pressure rise after corticosteroid instillation are referred to as steroid responders; if glaucomatous damage ensues as manifested in the optic nerve or on visual field testing, then they truly can be said to have steroid glaucoma.^[1,2]

Neovascular glaucoma (NVG)

Neovascular glaucoma is caused by a fibrovascular membrane that develops on the surface of the iris and the angle. At first the membrane merely covers the angle structures, but then it contracts to form peripheral anterior synechia (PAS).^[1,2]

Phacomorphic glaucoma

Anterior lens subluxation or intumescence may precipitate acute or chronic angle closure glaucoma (phacomorphic glaucoma) due to the lens pressing against the iris and ciliary body and forcing them anteriorly.^[1,2]

Traumatic glaucoma

Traumatic injuries can produce elevated IOP through various mechanisms, including flat anterior chamber with formation of peripheral anterior synechiae; inflammation, including sympathetic ophthalmia; intraocular hemorrhage, including hyphema and ghost cell glaucoma; lens swelling with pupillary block; lens subluxation with pupillary block; lens-particle glaucoma; phacoanaphylaxis; posterior synechiae with pupillary block; epithelial downgrowth, and fibrous ingrowth.^[1,2]

Developmental glaucoma

The developmental glaucomas are a group of disorders with improper development of the eye's aqueous outflow system, usually manifesting in infancy and childhood, characterized by an elevated intra-ocular pressure, enlargement of globe (buphthalmos), corneal edema and optic nerve cupping, and presenting clinically with the characteristic triad of epiphora, photophobia and blepharospasm.^[1,2]

DISCUSSION AND RESULT

- This is an epidemiological study to evaluate the burden of glaucoma at the tertiary care hospital.
- There was a significant increase in glaucoma proportion from year 2016 to 2017, and this was higher among males.
- Our study noted a higher male preponderance for all PAOG, PACG, secondary and developmental glaucoma.
- Out of 3400 patients examined we found higher proportion of POAG (7.61%). Proportion of PACG and secondary glaucoma was 2.29% and 5.44% respectively. Least Proportion was that of developmental glaucoma, 0.67%.
- Among the secondary glaucomas the highest number of cases (35.68%) were found to be of pseudoexfoliative glaucoma.
- Considering the gender distribution, POAG and secondary glaucoma both were found to be more common in males. (POAG: 62.54% males, 37.46% females; SECONDARY GLAUCOMA: 58.37% males and 41.63% females)
- In PACG and developmental glaucoma male (51.28% and 47.82% respectively) and females (48.72% and 52.18% respectively) are almost equally affected.

Glaucoma and eye diseases awareness continues to be a major public health issue even in the most developed countries and a challenge for health care system. Having described the high prevalence and distribution of glaucoma in this comprehensive and representative study, we are obliged to recommend a strategy for the prevention blindness and visual impairment from glaucoma. The clinical care of glaucoma remains challenging. Public health control strategies with high quality integrated glaucoma care services will be required to reduce morbidity and blindness.

GLAUCOMA DISTRIBUTION: YEAR 2016 (TABLE-1)

MONTH	PRIMARY GLAUCOMA		SECONDARY GLAUCOMA							CONGENITAL GLAUCOMA
	POAG	PACG	PIGMENTARY	PSUEDOEXFOLIATIVE	ABSOLUTE	STEROID INDUSED	NVG	PHACOMORPHIC	TRAUMATIC	
JAN	1	1	0	1	2	3	0	2	0	2
FEB	0	1	0	2	1	0	1	0	0	0
MAR	2	12	0	3	1	0	6	2	0	1
APR	1	0	0	1	0	0	0	0	1	2
MAY	9	0	0	1	0	0	3	0	2	0
JUN	14	8	0	5	0	1	8	0	0	0
JUL	25	4	0	2	1	0	3	4	1	1
AUG	15	6	0	0	2	0	2	1	0	1
SEP	13	4	0	1	2	0	0	0	0	0
OCT	10	6	0	2	0	0	2	0	0	2
NOV	12	1	0	0	3	0	1	0	0	1
DEC	0	4	0	1	0	3	0	2	0	0
TOTAL	102	47	0	19	12	7	26	11	4	10

GLAUCOMA DISTRIBUTION: YEAR 2017 (TABLE-2)

MONTH	PRIMARY GLAUCOMA		SECONDARY GLAUCOMA							CONGENITAL GLAUCOMA
	POAG	PACG	PIGMENTARY	PSUEDOEXFOLIATIVE	ABSOLUTE	STEROID INDUSED	NVG	PHACOMORPHIC	TRAUMATIC	
JAN	2	2	0	0	0	0	0	0	0	0
FEB	16	0	9	6	0	0	0	0	0	2
MAR	10	4	3	11	0	0	1	0	0	1
APR	13	4	0	0	1	0	1	0	0	3
MAY	7	0	5	2	0	0	0	0	0	0
JUN	9	1	3	2	0	4	6	0	1	1
JUL	19	4	0	3	0	2	2	0	6	2
AUG	5	5	0	2	0	1	1	0	2	0
SEP	14	6	0	0	0	0	0	0	0	2
OCT	17	1	2	1	0	0	0	0	0	1
NOV	21	2	0	0	0	0	0	0	0	1
DEC	24	2	3	18	0	0	0	0	2	0
TOTAL	157	31	26	47	1	7	14	0	11	13

OVERALL GLAUCOMA DISTRIBUTION(TABLE-3)

PRIMARY GLAUCOMA TYPE	TOTAL
POAG	259
PACG	78
CONGENITAL GLAUCOMA	23
SECONDARY GLAUCOMA	185
<u>SECONDARY GLAUCOMA SUBTYPES</u>	
PIGMENTARY	26
PSUEDOEXFOLIATIVE	66
ABSOLUTE	13
SI	14
NVG	40
PHACOMORPHIC	11
TRAUMATIC	15

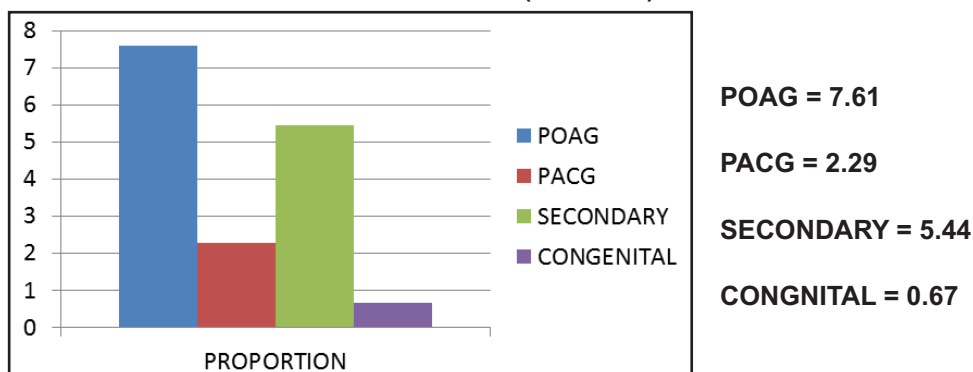
AGE & SEX WISE DISTRIBUTION OF GLAUCOMA-YEAR 2016 (TABLE-4)

MONTH	PRIMARY GLAUCOMA		SECONDARY GLAUCOMA							<u>CONGENITAL GLAUCOMA</u>
	POAG	PACG	PIGMENTARY	PSUEDOEXFOLIATIVE	ABSOLUTE	STEROID INDUSED	NVG	PHACOMORPHIC	TRAUMATIC	
< = 50 M	15	14	0	0	0	0	6	0	1	4
F	8	12	0	1	0	1	7	0	2	2
51-60 M	21	3	0	4	3	2	3	2	0	0
F	7	4	0	4	2	2	1	3	0	0
61-70 M	14	5	0	3	4	1	7	4	1	1
F	7	5	0	4	2	1	0	2	0	1
71-80 M	19	1	0	2	1	0	2	0	0	0
F	7	3	0	0	0	0	0	0	0	1
> = 80 M	3	0	0	1	0	0	0	0	0	1
F	1	0	0	0	0	0	0	0	0	0

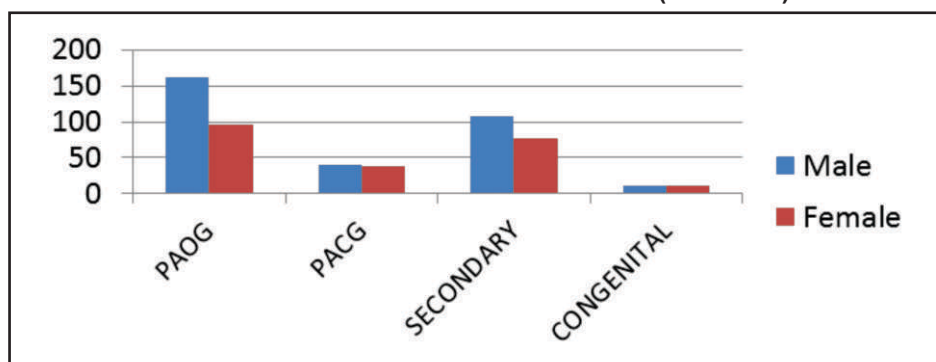
AGE & SEX WISE DISTRIBUTION OF GLAUCOMA-YEAR 2017 (TABLE-5)

MONTH	PRIMARY GLAUCOMA		SECONDARY GLAUCOMA							CONGENITAL GLAUCOMA
	POAG	PACG	PIGMENTARY	PSUEDOEXFOLIATIVE	ABSOLUTE	STEROID INDUSED	NVG	PHACOMORPHIC	TRAUMATIC	
< = 50 M	20	9	1	6	0	1	2	0	9	3
F	7	7	5	4	0	2	2	0	0	4
51-60 M	26	4	4	6	0	0	1	0	1	1
F	27	0	8	7	0	0	2	0	0	2
61-70 M	22	2	2	9	1	0	2	0	1	0
F	17	5	0	6	0	4	2	0	0	0
71-80 M	15	2	4	7	0	0	1	0	0	1
F	10	0	2	0	0	0	1	0	0	1
> = 80 M	7	0	3	2	0	0	1	0	0	0
F	6	2	0	0	0	0	0	0	0	1

OVERALL GLAUCOMA PROPORTION(CHART-1)



SEXWISE GLAUCOMA DISTRIBUTION (CHART-2)



GLAUCOMA	MALE(PROPORTION %)	FEMALE(PROPORTION%)
POAG	162(62.54)	97(37.46)
PACG	40(51.28)	38(48.72)
SECONDARY	108(58.37)	77(41.63)
CONGENITAL	11(47.82)	12(52.18)

CONCLUSION

- In our study, highest proportion of glaucoma was found of POAG with male preponderance and lowest proportion was of developmental glaucoma.
- These estimates are important in guiding the designs of glaucoma screening, treatment, and related public health strategies.
- Glaucoma and eye diseases awareness continues to be a major public health issue even in the most developed countries and for our health care systems.
- In general higher awareness could lead to improved detection because the health-seeking pattern of an aware population is likely to be more robust. The current level of awareness does not seem to translate into this ideal state, and reasons for this could be due to failure of subjects to report for routine eye health screenings, high health care costs, or failure of strategy used in public awareness programs. This indicates that there is a specific need to look into the strategies and approaches that could help overcome this deficit.

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Case Report

A Rare Case of Recurrent Fistula in Ano with the Pin Worms in the Fistula Tract

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Keywords : Recurrent Fistula in Ano, Pin worms

ABSTRACT

Enterobius vermicularis is an obligate parasite residing in the host colon. The route of transmission is faecooral with the life cycle starting with ingestion of viable eggs, which hatch in ileum and the larvae maturing in the caecum. The gravid adultworm then migrates to the perianal region where it lays its eggs. A 35 year old male, farmer by profession came with the complain of pus discharge from opening over perianal region since last 10 days. Fistulectomy of patient was done two times in last two months suggestive of recurrent anal fistula. Intraoperatively worm was found in fistula tract accidentally which was sent for microbiology examination and confirmed as *enterobius vermicularis*.

INTRODUCTION

Enterobius vermicularis is a helminthic infection, affecting almost 1 billion people worldwide from all socioeconomic classes. There is high prevalence rate among children, homosexuals and family contacts.

Prevalence in children is reported to be 0.2-20%. In adults, it occurs because of transmission from their children aged 5-9 yrs.

CASE REPORT

A 35 year old male, farmer by profession, came with the complain of pus discharge from opening over perianal region since last 10 days which was painless, intermittent in nature, associated with complain of reduced appetite, not associated with fever or weight loss.

Patient had the surgical past history of fistulectomy for similar complains two times in the past two months.

Patient had no significant family or personal history other than reduced appetite.

On Examination : Well built and moderately nourished and vitally settled with no pallor/cyanosis/clubbing/edema/lymphadenopathy/icterus.

On Local Examination, external opening of fistula in ano was found at 9 o'clock position with active pus discharge coming out from same opening. Skin surrounding opening was edematous, with mild redness. No sentinel tags / haemorrhoids seen. No active bleeding per rectum present, while internal opening of fistula in ano was present at 10 o'clock position approximately 1.5 cm from anal verge. Anal sphincter tone was normal and digital

examination was painless. On proctoscopy, active pus discharge seen coming out of internal fistulous opening. No active bleeding points seen.

INVESTIGATIONS

All blood reports were within normal limits.

Ultrasonography of perianal region: 26mm long and 6 mm wide tract noted in perianal region at 9 o'clock position and approx. 20*16 mm sized collection noted adjacent to it.

MRI of perianal region was suggestive of intersphincteric fistula in ano.

PER OPERATIVE FINDINGS

Anal fistulous tract with its external opening at 9 o'clock and internal opening at 10 o'clock, which was 1.5 cm from anal verge was found.

During the dissection of tract, worms were found in the fistula tract as an accidental finding which were sent for microbiology examination and were confirmed as *enterobius vermicularis* and whole of the fistula tract was then excised and sent for tissue HPE. (Fig II)

DISCUSSION

Threadworms or pinworms are known to migrate to ectopic sites and have been reported in the female urogenital tracts as well as noted in within granulomas seen in liver, spleen, mesentery, and even in association with inguinal hernia^{1,2,3}. These parasites are thought to migrate through pre existing tracts, breaches in the intestinal mucosa and also to penetrate healthy intestinal wall^{1,2}.

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I : Intraoperative picture

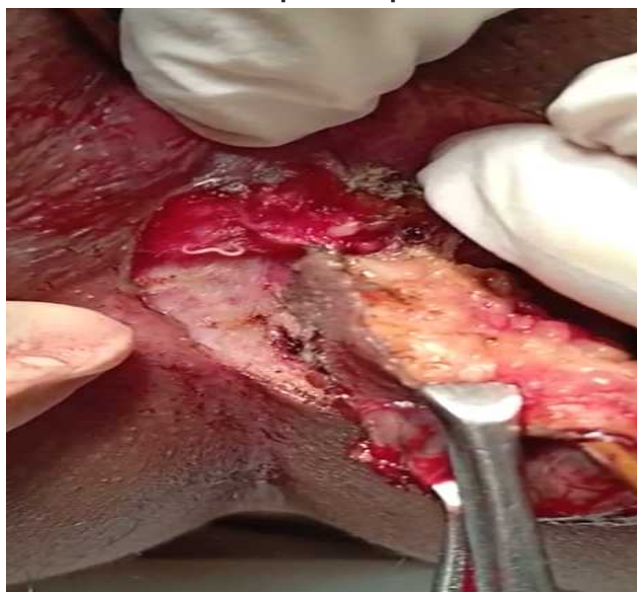


Fig I : Pinworms seen as an accidental finding in fistula tract intra-operatively.

II : HPE finding

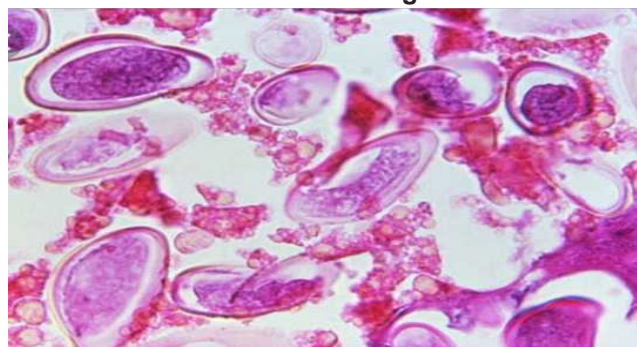


Fig II : Histopathological examination showing pinworm eggs confirming pinworm infection in fistula tract.

Several large series of perianal sepsis in children make no mention of this parasite^{5,6,7}. The first report of such an association was provided by Mortenson⁸ who reported amotile threadworms in an abscess cavity and documented an acute inflammatory response with a number of threadworm ova in the abscess wall. No pathophysiological mechanism for the abscess development was, however, proposed.

Hallisay has drawn attention to the association of *Enterobius vermicularis* with perianal sepsis but the two cases described were only confirmed on proctoscopic examination which revealed viable adultworms in the area of the anal crypts and there was no histological confirmation of direct involvement^{6,7}.

One possible explanation for the involvement of *enterobius vermicularis* in recurrent fistula in ano is direct migration of parasite through the healthy mucosa into the

perianal tissue where they may cause focal irritation culminating in abscess formation. A more plausible explanation consistent with the finding in our patient is the parasites opportunistically enter pre existing fistula and glandular crypts abscess result either from occlusion of openings of glands or fistula or from reaction to ova deposited in the wall or to parasites within the lumen. Avolioetal and Mattia presented compelling support for this theory by demonstrating a perianal granuloma associated within a deep crypt and normal surrounding squamous surface epithelium supporting the hypothesis of worm entry by way of a crypt. They further postulated that,as an extension of this process,granulomata separate from the crypts making identification of origin via this route extremely difficult Reports of this aetiology are rare but should be suspected when there is a marked reaction around perianal collection as well as when abscesses occur recurrently.

CONCLUSION

Presentation of pinworm in recurrent anal fistula in adults, a rare finding, is mainly per operative finding rather than found in any other investigations. Treatment is to give anti parasite medications after excision of whole fistulous tract.

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Case Report

Incidental Finding of Huge Serous Cystadenoma of Ovary in A Patient With Menorrhagia

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Keywords : Ovarian Serous cystadenoma, Tumor presentation, Epithelial Neoplasm, Tumor markers.

ABSTRACT

Ovarian tumors are common in age of 40-60 years. While the most common presentation is pelvic discomfort, we report the case of a 41-year-old female presenting with menorrhagia which is an unusual initial complaint for a large ovarian tumor. Females of 40-50 years of age who present with heavy menstrual bleeding initially undergo assessment to rule out a uterine cause like fibroid, adenomyosis or medical disorder like hypertension all of which can be a common cause leading to menorrhagia at this age. In this case, careful history and physical examination helped in making a quick diagnosis and management. Radiological investigations like Ultrasound of abdomen and MRI abdomen showed a huge cystic mass due to serous cystadenoma of the ovary.

INTRODUCTION

Epithelial neoplasms of ovary accounts for 60% of all ovarian tumors and 40% of benign tumors. Ovarian cystadenomas are common benign epithelial neoplasms which carries excellent prognosis.^[1] The most frequent 2 types of it are : serous and mucinous. Benign serous tumors of ovary represents 16% of all ovarian epithelial tumors and majority of ovarian tumors. They occur in adults of all ages but its Epidemiology prevalence peaks between 40-60 years of the human lifespan. It has a very superficial resemblance to the most common type of ovarian cancer (serous carcinoma of the ovary) under the microscope; however, (1) it is virtually impossible to mix-up with its malignant counterpart (serous carcinoma), and (2) does not share genetic traits of indeterminate serous tumors, also called serous borderline tumors, that may transform into serous carcinoma.^[2] Serous ovarian cystadenocarcinomas account for ~25% of serous tumors.^[3] They are bilateral in 10-20% of cases. Most common presentation is pelvic discomfort and pelvic pain. Chances of malignancy are 40%.

CASE REPORT

A 41 year old P1L1 female patient presented with complaint of menorrhagia since 7 years with no complaint of pelvic pain or discomfort. She was having of regular, heavy menses for 7-8 days (4-5 pads/d) with passage of clots in every cycle. She had one full term vaginal delivery 24 years back with no significant past, medical, surgical or family history.

On examination per abdomen mass of 26-28 weeks size,

soft, cystic consistency felt. On per speculum examination : cervix was taken up and deviated to right side. On per vaginum examination : uterus was 26-28 week size and not felt separate from mass with both fornices free and clear

On her investigation Hb :10.8 gm/dl, Total count : 8300/cumm, Platelets : 2.3 lacs. All other routine investigations were done which were normal. Ovarian tumor marker were also done. All were normal in range including : CA 125 – 23 U/ml, LDH – 853.2 U/ML, AFP – 4.0 NG/ML.

On radiological investigations : USG Abdomen suggested : Uterus bulky, anteverted with multiple fibroids in fundus and anterior wall pushing endometrial thickness anteriorly, largest measuring 43x38mm in anterior wall. Approx. 21x12cm size cystic lesion with single septation is noted in right adnexal region in abdomen, right ovary not seen separately from it possibility of – serous cystadenoma of right ovarian origin. MRI Abdomen shown Uterus is bulky with multiple fibroids in anterior and posterior wall, largest measuring 35x41x40mm in anterior wall. Approx. 14x21x25mm sized well defined unilocular cystic lesion is noted in pelvis extending to epigastrium, right ovary is not separated from lesion suggestive of Benign right ovarian cyst, possibility of – Ovarian Serous cystadenoma.

Patient underwent laparotomy under general anesthesia for cyst removal with Total abdominal hysterectomy with bilateral salpingo-oophorectomy.^[Fig.1] Per operatively we found cyst was arising from right ovary, right fallopian tube adherent to cyst. Post operatively patient was vitally

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stable. Suture was removed on 10th post operative day and patient was discharged.

Histopathological report shown multiple cysts and papillae lined by non stratified or stratified cuboidal to columnar cells resembling to fallopian tube , PSAMMOMA BODIES seen suggestive of - benign serous cystadenoma of ovary.^[Fig3]

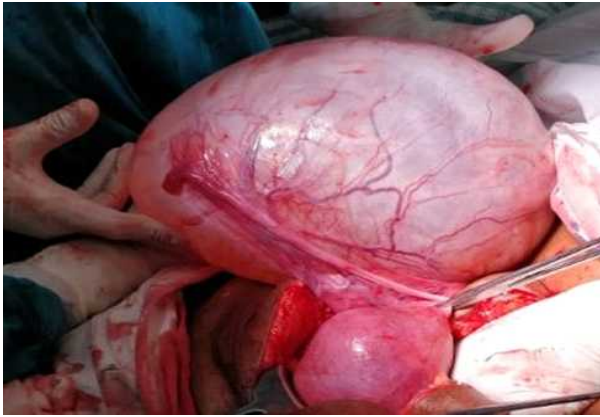


Fig 1 : Per operative photo of ovarian cyst with Fallopian tube adherent to it.



Fig 2 : A huge ovarian cyst measuring 26x28cm and weighing 4.8kg.

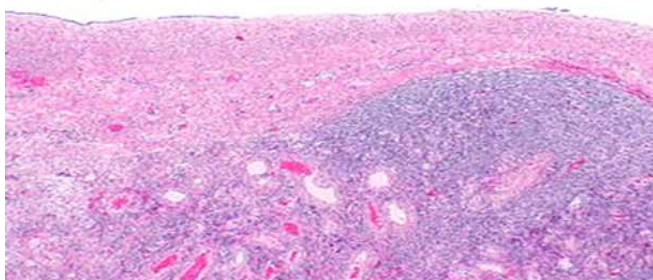


Fig 3 : Benign serous cystadenoma : Simple epithelial lining with underlying fibrous wall, no atypia or invasion is seen.

DISCUSSION

Here we report the case of a 41-year-old female presenting with menorrhagia which is an unusual initial complaint for a large ovarian tumor. Patient with ovarian

tumors most commonly present with the complaint of lower pelvic pain or pelvic discomfort, while menorrhagia is unusual presentation of ovarian tumors. Radiological investigation like USG used to diagnose the causes of heavy uterine bleeding.^[4]

Here, in this case careful physical examination suggested need for additional radiological intervention like MRI to aid in diagnosis and other investigations like ovarian tumor markers. Huge Ovarian serous cystadenoma can lead to life threatening complication called ovarian torsion if not diagnosed timely . Other complications are rupture of the cyst and malignant transformation.

A study conducted in 1994 mentioned that abdomen and transvaginal ultrasonogram should be part of the initial evaluation of menorrhagia^[8] in females, since ovarian cystadenomas have a tendency to grow large. Earlier detection would prevent life-threatening complications such as ovarian torsion. Whether to add abdominal sonogram to the initial evaluation steps is dependent on the physical examination finding and the resources available. Detailed history taking and conducting a thorough physical examination were the keystone in managing this patient, in addition to following guidelines in managing females with menorrhagia.

CONCLUSION

So early detection and intervention can prevent the complication of ovarian tumor like torsion or rupture of cyst or malignant transformation.

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Case Report

A Case Report on Optic Nerve Sheath Decompression

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Keywords : Optic nerve sheath decompression(OSND), Idiopathic intracranial hypertension(IIH), Best corrected visual acuity(BCVA)

ABSTRACT

Aim : Optic nerve sheath decompression has been shown to improve or stabilize visual function in patients with Intracranial hypertension.

Methodology : A 60 year male with Malignant intracranial hypertension and visual loss underwent Optic Nerve Sheath Decompression. The main outcome measures included Best corrected visual acuity, pupillary light reflex and resolution of papilloedema which was evaluated preoperatively and at follow up at 4 days, 2 weeks, 1 month, 3 months and final follow up.

Results : Following ONSD, significant improvement was observed in BCVA and pupillary reflex occurred over 3 month follow up period. Surgical success was evaluated by resolution of papilloedema.

INTRODUCTION

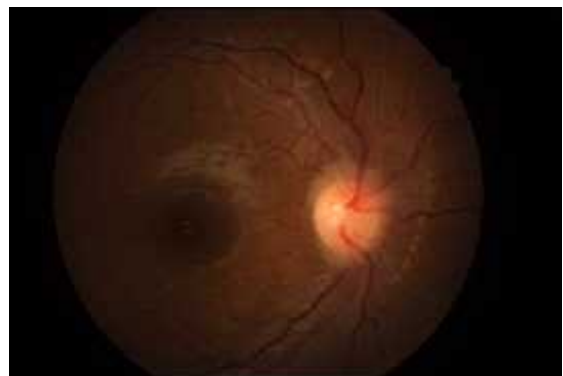
Intracranial hypertension(IH) is a multifactorial syndrome characterized by severe headache,nausea, vomiting, transient visual obscuration and diplopia. Idiopathic intracranial hypertension(IIH) is the terminology used when no underlying aetiology is detected. It is termed secondary IH when an underlying cause is detected like cerebral venous thrombosis(CVT) or a space occupying lesion.

Severe vision loss is significant complication of IIH. The natural history of chronic papilloedema leads to headache, Visual field loss and loss of visual acuity occurs later. Intractable headaches and visual field loss are indications for treatment. Headache is usually treated with oral acetazolamide or frusemide and intravenous mannitol to reduce intracranial pressure (ICP). Intravenous methylprednisolone is given for damage occurred to optic nerve. Cerebrospinal fluid(CSF) shunting procedures are definitive treatment for intracranial hypertension. However in cases of sudden loss of vision a direct approach to the distal optic nerve by ONSD is the treatment of choice.

METHODOLOGY

A 60 year male came to our institution with complaints of bifrontal and bitemporal headaches and sudden loss of vision within 4 days. He consulted an ophthalmologist

where visual acuity (V/A) was recorded on day 1 for Right Eye 6/24 Left Eye 6/36 day 2 as Right Eye 6/60 Left Eye 3/60 and on day 3 as Right Eye counting fingers 2meter Left Eye counting fingers 1meter and came to our institute



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on 4th day with Both Eye NO PL vision. Pupillary reaction shows Both Eye relative afferent pupillary defect(RAPD) grade 4. On fundus examination revealed florid bilateral disc edema and marked edema of peripapillary retina. Patient was diagnosed as having papilledema with severe impairment of vision most probably secondary to intracranial malignant hypertension.

CSF opening pressure was found to be 350 mmHg and other lab investigations of CSF were within normal limits. MRI shows increase in optic nerve sheath diameter. Relevant investigations were done to detect any metabolic, endocrine, or hematological cause for raised ICP. Optic nerve sheath decompression was performed using a medial transconjunctival approach under general

anesthesia in one eye. When one nerve was decompressed, pressure in that nerve sheath dropped and in addition pressure in the unfenestrated sheath dropped due to fluid communication across the chiasma.

Pre operatively a five day course of intravenous methyl prednisolone 1 gm/day in 100cc NS over 3-5 hrs was started. Patient was discharged on 5th post operative day having visual acuity of counting fingers 3 meters. Patient came for follow up after 1 month with visual acuity of counting finger 6 meters vision in both eye. Then patient was lost to follow up.

RESULTS

Visual acuity was improved to Counting Finger 3 meters in both eye on 5th post operative day. Fundus examination shows resolution of papilledema. Patient came for follow up after 1 month with visual acuity of counting finger 6 meters vision in both eye. Then patient was lost to follow up.

DISCUSSION

These cases should be taken up for surgical management at the earliest to give good functional results. Malignant intracranial hypertension has poor prognosis but early treatment is beneficial for visual outcome.

Case Report

A Rare Case of Esophageal Leiomyoma

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Keywords : Esophageal leiomyoma, leiomyosarcoma, benign tumors of esophagus.

ABSTRACT

The majority of esophageal submucosal tumor is benign, of which leiomyoma is the most common type, accounting for about 90%. The development of endoscopic ultrasonography and thoracoscopic techniques has opened the door for the diagnosis and treatment of esophageal leiomyoma widely.^{1,2}

Esophageal leiomyomas are the most common benign mesenchymal tumors of the esophagus. These tumors originate in the smooth muscle cells. The etiology and pathogenesis are unclear.^{3,4}

They are rare lesions that constitute less than 1% of esophageal neoplasms. Approximately two-thirds of benign esophageal tumors are leiomyomas; the others are usually cysts and polyps.

We came across one such rare case in a 10 year old child diagnosed as esophageal leiomyoma for which Ivor Lewis Esophagectomy with gastric pullup was done.

CASE REPORT

A 10 year old boy presented with difficulty in swallowing solid food for past one month. He had no associated history of vomiting, fever, weight loss or appetite loss. On examination he was vitally stable and abdominal examination was unremarkable. All blood investigations were normal. Ultrasonography abdomen was unremarkable. HRCT Thorax showed dilated air and content filled esophagus in its entire extent from D1 – D12 vertebral level with maximum diameter of dilated esophagus measuring approximately 54mm at D8-D9 vertebral level. Dilated esophagus shows thickened, irregular wall with abrupt cutoff noted at D10 vertebral level. UGIs copy revealed dilated upper esophagus with some liquid residue. Luminal compromise due to external compression seen in lower esophagus from 30 to 36 cms from incisors with GE junction seen at 36 cms from incisors. Scope could be negotiated across it with some maneuvering. Extrinsic bulge seen in cardia of stomach. CECT Abdomen and Thorax revealed possibility of primary malignant mass involving mid and lower third of esophagus and OG junction most likely leiomyosarcoma. EUS guided biopsy showed a submucosal gastro-esophageal lesion likely spindle cell neoplasm-leiomyoma.

Ivor Lewis Esophagectomy was done. Right posterolateral thoracotomy done and tumor involving lower third of esophagus removed. Stomach tube

constructed based on right gastric and right gastroepiploic vessels. Feeding jejunostomy (FJ) done.

Patient was started on FJ feeding on postoperative day 3. Patient was started on oral feeds on postoperative day 8. Postoperative period was uneventful and patient was discharged on postop day 15. Histopathological examination which showed benign spindle cell tumor-Intramural leiomyomatosis longitudinally involving distal esophagus wall, GE junction and part of gastric wall. Distal cut end (gastric cut end) is free of tumor. Proximal cut end (esophageal cut end) shows involvement by leiomyomatosis.

Patient came for follow up after 15 days and was symptomatically improved. Patient was followed up every month.

DISCUSSION

Leiomyomas are the most common benign mesenchymal tumors of the esophagus. There is a higher incidence of leiomyoma of the esophagus in men when compared to women ratio of 2:1. The most frequent occurrence is usually between the ages of 20 to 50 years. The most typical location of these tumors is in the lower two- third of the esophagus. The occurrence of these tumors in the upper one-third of the esophagus accounts for only 10% of all leiomyomas of the esophagus. Majority of the tumors are detected when they are less than 5 cm in size. Rarely they grow to be larger than 10 cm and then, they

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are called giant leiomyoma of the esophagus. These occur as single or multiple tumors. Leiomyomas of the esophagus rarely cause symptoms when they are smaller than 5 cm in diameter. When these tumors grow larger, they become more symptomatic in patients. The most common symptoms are dysphagia, chest pain, vague retrosternal discomfort, heartburn, and occasional regurgitation. Rarely they can cause gastrointestinal bleeding when the tumor erodes through the mucosa. There appears to be no consistent pattern of symptoms according to the anatomical location of the tumor.^[5,6] Giant leiomyomas of the esophagus may present as a mediastinal mass.

Leiomyoma of the esophagus is known to be a slow growing tumor with low malignant potential. The most frequent site of occurrence of this tumor is the lower two-thirds of the esophagus, and its distribution reflects the relative amount of smooth muscle cells present along the wall of the esophagus. When the leiomyomas situated in the distal esophagus reach a large size, they can press on the cardia of the stomach.

On histopathological examination, the esophageal leiomyomas appear as circumscribed lesions composed of intersecting fascicles of bland spindle cells with abundant cytoplasm. These well differentiated smooth muscle cells which are of the spindle type are arranged as

braids. This tumor is thought to have a low malignant potential.

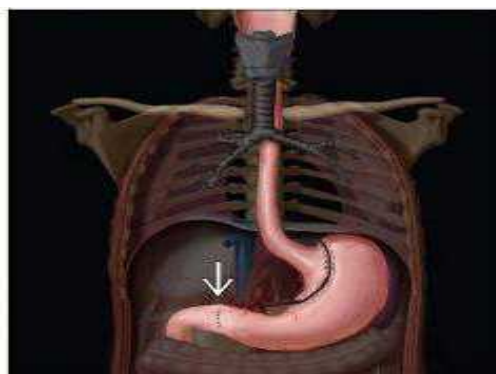
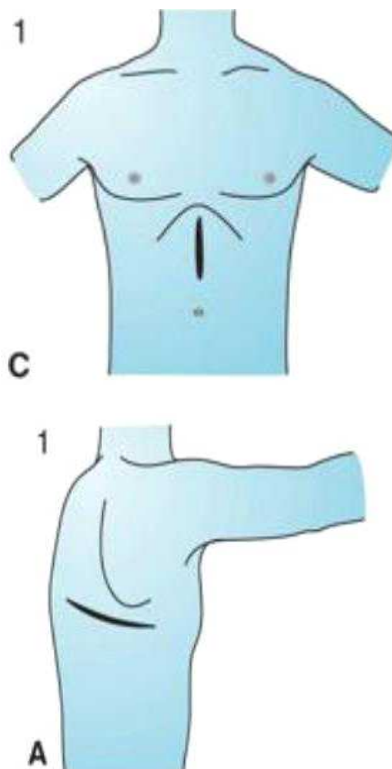
Often a diagnosis of esophageal leiomyoma is made as an incidental finding during routine investigation or screening for upper gastrointestinal (GI) pathology. In a Barium contrast series of the upper GI tract, an esophageal leiomyoma will be seen as a filling defect projecting into the lumen of the esophagus.

When an upper GI endoscopy is performed, these tumors can be identified as relatively mobile submucosal swellings protruding into the lumen of the esophagus, with normal looking mucosa covering the swelling. Currently Endoscopic ultrasonography (EUS) has become a critical investigation for diagnosis of esophageal leiomyoma.

Diagnosis of esophageal leiomyomas requires both endoscopic and radiologic examinations. Treatment depends on tumor size and location.

Once the clinical diagnosis of leiomyoma is established, tumor size and location are important, but also the patient's symptoms, general condition, and comorbidities should be taken into account. The surgical indications for tumor removal include unremitting symptoms, increased tumor size, mucosal ulceration, histopathologic diagnosis, and facilitation of other surgical procedures. A leiomyoma should be removed when diagnosed even

IVOR LEWIS ESOPHAGECTOMY



when asymptomatic, because there is always the possibility, rarely though, of malignant transformation.

Endoscopic approaches appear possible in case of small pedunculated tumors of 2-4 cm originating from the muscularis mucosae. Usually endoscopic mucosal resection (EMR) or endoscopic submucosal dissection (ESD) are done. Symptomatic small leiomyomas <5 cm can be enucleated either by open surgery or by means of video-assisted thoracoscopy (VATS). Transthoracic extramucosal blunt enucleation via a left- or right-sided thoracotomy is the most common procedure for small- to mid-sized esophageal leiomyoma, which is easier, faster, and safer compared to resection. Low tumors and tumors of the esophago-gastric junction can be approached via upper midline laparotomy. After enucleation, the muscular wall should be closed to avoid diverticular-like mucosal bulging and for the preservation of the muscular propulsive activity. The muscular wall should be repaired with pedunculated pleural film, diaphragm valve, or omentum, lung, pericardium. For giant esophageal leiomyoma esophageal resection and reconstruction is preferred. To perform partial or subtotal resection of the esophagus, and esophagogastric anastomosis, the results are satisfactory. Minimally invasive approaches or video - assisted thoracoscopic

surgery (VATS) have progressively gained acceptance in the last few years.

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Case Report

Eosinophilic Pleural Effusion: A Rare Manifestation of Hypereosinophilic Syndrome

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Keywords :

ABSTRACT

Several cases of eosinophilic pleural effusions have been described with malignancy being the commonest cause. Hypereosinophilic syndrome is a rare disease and very few cases have been reported of HES presenting as eosinophilic pleural effusion. We report a case of 36 year old male who presented with dry cough and shortness of breath. He had bilateral pleural effusion with marked peripheral eosinophilia. This patient represents a very unusual presentation of HES with bilateral pleural effusion.

INTRODUCTION

Eosinophilic pleural effusion is defined as fluid with 10% or more eosinophils. Eosinophilic pleural effusions are uncommon with an incidence of 7.2% of all pleural effusion. The pathogenesis of eosinophilic pleural effusion involves increased production of eosinophils in the bone marrow, migration to the lungs, and extended survival of the eosinophils due to impaired apoptosis by IL-5, IL-3 and GM-CSF. The causes of EPE in order of frequency include malignancy (34.8%), infections (19.2%), idiopathic (14.1%), posttraumatic (8.9%), miscellaneous (23%).

Hypereosinophilic syndrome is defined as peripheral eosinophilia of $1.5 \times 10^9/L$, evidence of end organ involvement, and lack of evidence for other causes of eosinophilia. HES can be classified as myeloproliferative HES, lymphocytic HES, undefined HES, and idiopathic. Treatment of HES is based on control of peripheral eosinophilia.

CASE REPORT

A 36 year old Asian Indian male presented with complaints of dry cough and shortness of breath for over 8 months. He was previously healthy and presented with peripheral blood eosinophilia and bilateral effusion, 6 months back. Pleural fluid tapping was done multiple times but failed to demonstrate eosinophilia in the earlier reports. Reports showed an exudative effusion with normal ADA, with lymphocyte predominance and cytology report was negative for malignancy. Patient was

given a trial of steroids and antihelminthics for 10 days initially to which the peripheral eosinophilia responded. He was started on empirical antituberculous treatment and continued it for 4 months. CECT thorax showed bilateral effusion, right > left, with mild pericardial effusion. Ultrasonogram of abdomen and 2D echo showed normal study. Studies for parasitic infection were negative.

Patient came to us after 5 months of his initial presentation. We did a thoracoscopy on right side and pleural biopsy was taken. Pleural fluid reports was also sent. Pleural biopsy was suggestive of eosinophilic lung disease. Pleural fluid reports showed marked eosinophilia this time (70%). Pleural fluid CEA was normal. A diagnosis of hypereosinophilic syndrome was made by exclusion. Therapeutic tapping was done on the left side. Right side ICD was removed after 2 days and patient was discharged on steroids. Oral prednisolone 40 mg per day was started. He followed up after 1 month. Patient responded well to the treatment. Blood eosinophil counts were markedly reduced and chest radiograph showed marked improvement.

DISCUSSION

Idiopathic HES is a rare disorder first described in 1968 by Hardy and Anderson. HES is now recognized as a clinically heterogeneous syndrome with a wide range of disease severity. HES is presence of hypereosinophilia together with eosinophilic tissue infiltration and organ damage (in the absence of other identifiable cause). Although persons of any age and maybe affected

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1. Initial Chest X-Ray



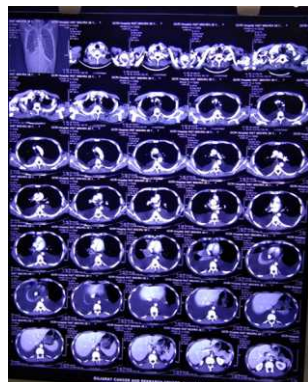
2. Post Thoracoscopy



3. After steroid treatment



4. Cect thorax



,disease onset is common between 20 and 50 years of age. Involvement of virtually every organ system has been described.

Several distinct clinical variants of HES have been recognized. Three of the most common are: i) myeloproliferative variant (primary /neoplastic HES) ii) lymphocytic variant (secondary, reactive HES), iii) idiopathic variant. In myeloproliferative variant, clonal expansion of eosinophils occurs and most common chromosomal abnormality is deletion of 4q12 leading to fusion of genes and activation of tyrosine kinase fusion protein F1P1L1-PDGFR α . Lymphocytic variant occurs in 30% of the cases where clonal expansion of Th2 T cells with abnormal surface antigen occurs. Skin and soft tissue involvement are predominant. Idiopathic variant is noted in 50% of cases where disturbances noted in previous variants are lacking but end organ damage is present.

Proper diagnosis of the subtypes has implications for choosing therapy for the disease. The tyrosine kinase inhibitor imatinib mesylate (400 mg per day) is the first line therapy for patients with PDGFR α -positive variant of HES. Patients with cardiac involvement should receive

Table I : Serial pleural fluid analysis reports of patient

Pleural Fluid	27/9/19	20/11/19	26/12/19	2/1/19
Glucose	43	86	74	-
Protein	5.90	6.80	5.60	-
Cell count	150	350	4200	-
Neutrophils	70%	90%	80%	1%
Lymphocytes	30%	10%	20%	29%
Eosinophils	-	-	-	70%
ADA	14.2	18.1	47	-
Cytology	Negative for malignancy	Negative for malignancy	Negative for malignancy	Eosinophil rich effusion

concomitant steroids to avoid further cardiac damage potentially induced by imatinib. A mainstay of therapy for persons with HES and organ involvement who lack FIPILI/PDGFR α fusion include corticosteroids such as prednisolone 1mg/kg/d for several weeks ,with taper of dose attempted to every other day regimen once eosinophil levels are reduced. Interferon α (IFN- α) can be tried as a second line agent among patients with HES who

fail to respond to steroid treatment or as a steroid sparing agent. Mepolizumab, anti IL-5 may reduce symptoms and eosinophilic organ involvement in patients with high IL-5 levels according to some studies. Case reports have demonstrated efficacy of anti-CD-52 antibody alemtuzumab that targets eosinophils and T-cells in the lymphocytic variant HES. Hydroxyurea (0.5 to 1.5 g per day) may be added to regimen if there is evidence of

further disease progression or steroid toxicity. Other chemotherapeutic agents like vincristine, etoposide, chlorambucil may be effective alternative agents for cases that are refractory to steroids.

Before the discovery of therapy, prognosis of HES was poor. Overall, without therapy, average survival was 9 months, and 3 to 4 year survival was estimated to be 10-12%.

Pulmonary involvement can be seen in 40%–60% of cases. The most common respiratory symptom is chronic, persistent cough. Patients may be misdiagnosed as having asthma. Pulmonary involvement may also be secondary to congestive heart failure or emboli originating from right ventricular thrombi or may reflect primary eosinophilic infiltration of lung parenchyma. HES rarely presents with eosinophilic pleural effusion. If pleural effusions are present in HES, they typically result from heart failure due to cardiac involvement. However our patient had a normal 2D echo. The diagnosis of HES was made by exclusion of other causes and fits in the idiopathic variant. Our patient responded well to steroids.

CONCLUSION

Pulmonary involvement can be seen in 40%–60% of cases of hyper eosinophilic syndrome. The most common respiratory symptom is chronic, persistent cough and can be misdiagnosed as asthma. HES rarely presents with pleural effusion. Early diagnosis often lead to appropriate management. Identifying the subtypes is also important as it has implications for choosing therapy for the disease.

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Case Report

A Case Report On Abdominal Wall Scar Endometriosis

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Keywords : Endometriosis, Scar Endometriosis, Cesarean Section Scar

ABSTRACT

Endometriosis is the presence of functional endometrial tissue outside the uterus. While it commonly involves the pelvic viscera and peritoneum, it can also occur at extra-pelvic sites. Scar endometriosis or incisional endometriosis is an infrequent occurrence of endometriosis at the site of a previous surgical scar, mostly following an obstetrical or gynecological procedure. It typically presents as swelling and abdominal pain at the scar site at the time of menstruation. USG is an accessible and reliable diagnostic tool, although in doubtful cases CT-scan or MRI may be required. Surgical excision offers diagnostic confirmation, therapeutic benefit as well as prevents recurrence. This is a case report on cesarean section scar endometriosis, managed at a tertiary level center with emphasis on its diagnosis and treatment.

INTRODUCTION

It is a chronic gynecologic disorder where the functional and morphological endometrial glands and stroma are present outside the uterine cavity.^[1] The most frequent sites of implantation are in the pelvic cavity such as the ovaries, posterior cul-de-sac, uterine ligaments, pelvic peritoneum, bowel, and recto-vaginal septum but it can also be found in extra-pelvic sites such as nervous system, thorax, urinary tract, gastro-intestinal tract, and in cutaneous tissue. Scar endometriosis is an infrequent type of extra-pelvic endometriosis, occurring in old surgical scars, mainly from obstetrical and gynecological procedures. The symptoms are non-specific, typically involving swelling and abdominal pain at the scar site at the time of menstruation. Diagnostic imaging includes USG and CT-scan or MRI in doubtful cases. Most cases need to be managed with surgical excision which provides confirmation of diagnosis, therapeutic relief and prevents recurrence.

CASE REPORT

A 35 year old female patient, Para-2, Abortion-1, Live issue-2, presented with complaint of cyclical abdominal pain with swelling at the site of previous cesarean section scar since 2 years. Initially, she had complaint of dysmenorrhea which started about 4 years back. Her obstetrical history was suggestive of two full-term emergency Cesarean sections performed 10 years and 5 years back.

On per-abdominal examination, about a lemon-sized swelling was felt between skin and uterus below the subcutaneous fat plane. Per-vaginally, uterus was found

to be anteverted, adherent to the anterior abdominal wall, which gave the impression that the mass in the scar may be connected to the uterus.

On imaging, USG showed a 53 X 13 mm sized ill-defined heterogeneously hypo-echoic lesion without internal vascularity at the suture site in the inter-muscular plane anterior to uterus which appeared to communicate with uterine wall, suggesting the possibility of scar site endometriosis.



A complementary MRI report revealed 14 X 60 X 50 mm sized ill-defined altered signal intensity lesion at the site of previous CS scar in lower abdominal wall in the rectus abdominis muscle.

The clinical history, physical examination and radio-imaging led to the diagnosis of scar endometriosis.

Plan of management was decided and patient was posted for surgery under spinal anesthesia. Abdomen was opened through the transverse scar of previous 2 cesarean sections. In the middle 1/3rd of scar, about 4 X 5

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cm sized thick, indurated, black colored tissue with chocolate colored fluid was noted.^[fig.1] Uterus and bladder were found to be adherent to the anterior abdominal wall scar. The patch of endometriosis extended upto the anterior uterine wall.^[fig.2] Peritoneum was opened from the lateral side. Sharp dissection was done to separate uterus and bladder from the anterior abdominal wall. Total Abdominal hysterectomy was done. Ovaries were normal and were preserved. On exploration, no other lesions of endometriosis were found. Patch of endometriosis involving the rectus muscle from upper and lower sides was resected.^[fig.3] All the suspicious tissue was thoroughly removed from the scar site and the tissue obtained was sent for histological examination.

Post-operative period was uneventful. Biopsy report confirmed the presence of scar endometriosis. Patient



Fig. 1 :
Patch of endometriosis in the middle 1/3rd of scar



Fig. 2 :
Endometriosis involving anterior wall of uterus



Fig. 3 :
Patch of endometriosis involving rectus Muscle being resected.



Fig. 4 :
Resected patch of endometriosis

was discharged after stitch removal and was called for follow-up at 6 monthly intervals. Follow-up at 12 months after surgery revealed no recurrence of complaints.

DISCUSSION

Scar endometriosis is a rare entity reported in the gynecological literature, and presents in women who

have undergone a previous abdominal or pelvic operation.^[2] The incidence has been estimated to be only 0.03% to 0.15% of all cases of endometriosis.^[3]

Although many theories have been postulated regarding its pathogenesis, the most accepted is direct mechanical implantation of endometrial tissue to the wound edge during abdominal or pelvic surgery, most commonly a cesarean section.

Classically, patients present with cyclical increase in the intensity of pain and size of the endometrial implants. However, majority of the patients have non-specific complaints like tenderness on palpation or a raised scar, which makes the diagnosis challenging.

Although this is ultimately a histopathologically-confirmed diagnosis, preoperative imaging including ultrasound, computed tomography, and magnetic resonance imaging may be helpful in the diagnosis and assessment.^[4]

Management includes both surgical excision and hormonal suppression.^[5, 6] Hormonal suppression using oral contraceptive pills, progestational and androgenic agents like danazol can be tried but these agents have been found to be only partially effective with high risk of recurrence. The treatment of choice is always total wide excision of the lesion, which is diagnostic and therapeutic at the same time.^[7]

CONCLUSION

This patient was successfully managed with surgical approach alone without any adjuvant medical treatment with no recurrence.

With rising incidence of cesarean sections and various other gynecological surgeries, the occurrence of scar endometriosis can be expected to rise. Hence, for such patients, history taking and physical examination should be done thoroughly keeping in mind the possibility of scar endometriosis as a delayed post-operative complication.

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Case Report

Rare Case of Posterior Fossa Glioblastoma Multiforme

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Keywords : Glioblastoma Multiforme, Brainstem Glioma, High Grade Astrocytoma

ABSTRACT

In general, Glioblastomas multiforme frequently occurs in supratentorial region but in less than 4% occur in the posterior fossa predominantly in the cerebellum. We presents case of male with posterior fossa glioblastoma. MRI is the study of choice with high sensitivity and specificity for diagnosis, after that they underwent biopsy and the results of pathology described GBM. The treatment of election is surgery, radiotherapy plus chemotherapy while the prognosis is poor even with treatment, thats is why we need to identify new therapeutic strategies; We currently believe it is necessary to use genetic platforms to identify possible therapeutic targets.

INTRODUCTION

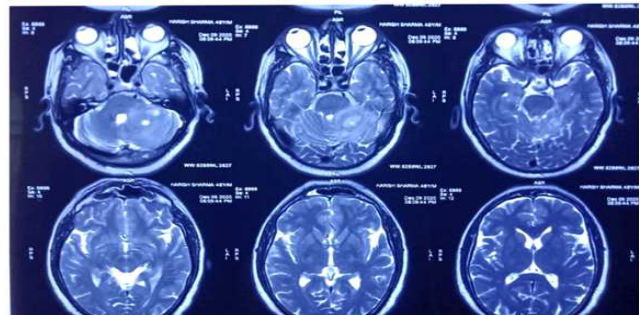
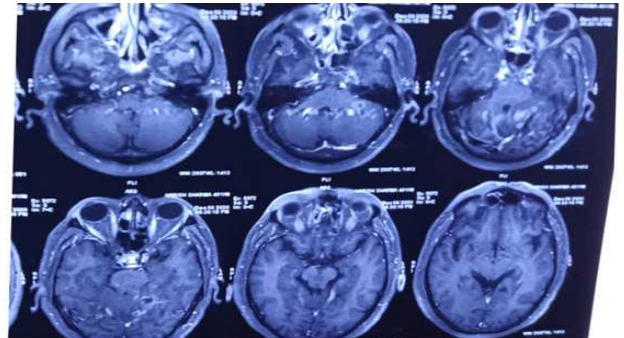
Glioblastoma (GBM) is the most frequent tumor of the central nervous system representing 50% - 60% of all brain tumors, they occur most frequently from 50 - 70 years and their most frequent location is supratentorial; posterior fossa glioblastomas are very rare and represent a challenge for diagnosis since they are confused with metastatic lesions, this location correspond to 0.24% to 1% of the total glioblastomas. GBMs located in the posterior fossa can cause various cerebellar symptoms such as headache, gait disorders, ataxia, nausea and vomiting. These findings may suggest the existence of a massive lesion in the posterior fossa. Surgery remains the treatment of choice if possible; followed by adjuvant treatment with Temozolomide (TMZ), -Radiotherapy in the case of a recurrence palliation remains the alternative of choice including biological therapy. The presentation of glioblastoma in cerebellum is extremely rare, and few reports of clinical cases with these characteristics have been published. Its etiology and prognosis are poorly clarified due to lack of data in the literature. We present clinical cases of glioblastoma with location in the posterior fossa.

CASE

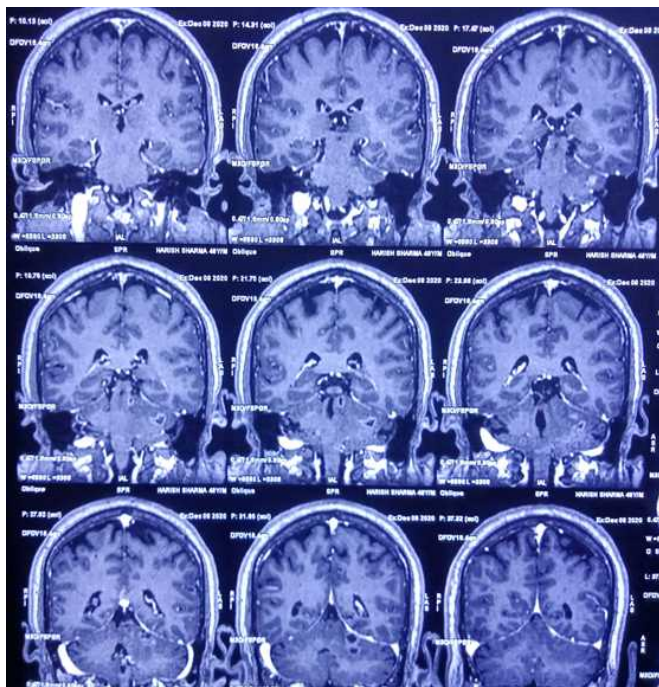
48 year male history of sudden imbalance while walking since 10days History of tremors in left hand since 10 days
Neurology

- Gait having appendicular ataxia
- Pronator test left upper limb outwards
- Left side dysdiadochokinesia
- Dysmetria
- Intention tremors
- Horizontal nystagmus more on left side
- Tandem gait absent
- No staccato speech

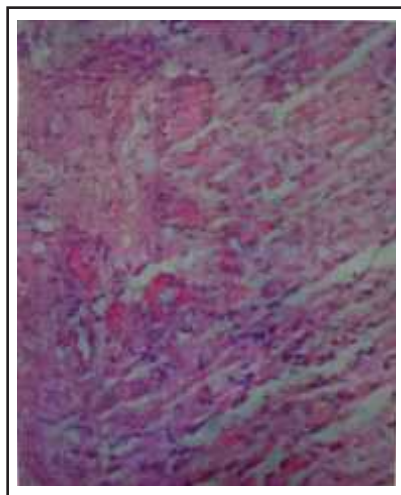
All cranial nerves within normal limits



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Patient was operated in prone position and skin incision kept over left paramedian region and after muscle incised and suboccipital craniectomy done, dura incised in cruciate fashion and transcerebellar approach was planned and tumor excision done gradually from petrosal part of cerebellum which seem intraoperatively to be either tuberculoma or metastasis; but on biopsy report came out to be glioblastoma multiforme.



HISTOPATHOLOGY

(GLIOBLASTOMA MULTIFORME WHO GRADE 4)

DISCUSSION

Glioblastoma, the most frequent tumor among all primary tumors of the central nervous system in adults, has a frequency of 50%. However, adult cerebellar is extremely rare, accounting for 0.24% to 3.8% of all intracranial

glioblastomas. From 1975 till 190 articles and abstracts about cerebellum glioblastoma were published, according to a search of the Medline database. The male-to-female ratio is 2:1. Cerebellar glioblastoma can be seen in all age groups. About 70% of lesions occur in adults with a median age of 46.7 years while 30% were noted in children (Demiret al2005; Mattos et al 2006). As with our patient, localization is generally median or paramedian with a possible extension to the fourth ventricle.

The clinical features of patients with cerebellar GBM are similar to those of other aggressive fast growing infratentorial tumors. Signs and symptoms include headache, nausea, vomiting, and cerebellar dysfunction including ataxia, imbalance and unsteady gait. Non-enhanced CT scan findings of GBM may include a heterogeneous poorly marginated mass; internal areas of low or fluid attenuation that are the foci of necrosis (present in as many as 95% of GBMs); internal areas of high attenuation that are the foci of hemorrhage or, rarely, calcifications. There may be significant mass effect and perilesional edema. Enhanced CT scans display significant enhancement with findings such as irregularity and heterogeneity.

The imaging features of cerebellar GBM are described as nonspecific. Lesions may occur laterally in the cerebellar hemispheres or in the midline within the vermis. The lesions are typically infiltrating with indistinct margins. Signal characteristics are heterogenous, often with necrotic and cystic components. A thick and irregular wall is commonly seen. However, irregular peripheral enhancement is consistently described following contrast administration. Edema is usually present and obstructive hydrocephalus is common. This is in contradistinction to the imaging findings in our case where the features of perilesional edema and contrast uptake were subtle.

Additionally, MRI has a highest degree of confidence in the diagnosis of glioblastoma multiforme (GBM; malignant glioma). MRI findings demonstrate a heterogeneous mass that is generally of low signal intensity on T1-weighted images and high signal intensity on T2-weighted images. There are internal cystic areas, areas of high signal intensity on T1 (hemorrhagic foci), neovascularity, necrotic foci, significant peritumoral vasogenic edema, and significant mass effect. Irregular but intense enhancement after the administration of gadolinium-based contrast material (same pattern as with enhanced CT scanning) is also

found. However, the patient being presented did not conform to these described findings. Magnetic resonance imaging (MRI) demonstrated a midline cerebellar mass that was hyperintense on T1 with minimal adjacent edema, blooming on gradient sequence and no restriction with diffusion. The mass had minimal enhancement with gadolinium contrast.

The histology and biology of cerebellar GBM is similar to that of cerebral GBM. This includes malignant tumor cells, mitoses, hypercellularity, pleomorphism and neoangiogenesis. The presence of necrosis helps differentiate GBM from anaplastic astrocytoma or from well-differentiated astrocytoma (Luccarelli et al 1980; Georges et al 1983; Katz et al 1995; Rizket al 1994). The case being presented exhibited these features as well as considerable nuclear and cytoplasmic pleomorphism, with multinucleated, giant cells and hemosiderin-laden macrophages.

As with any GBM and any malignant brain tumor, cerebellar GBM has a very poor prognosis. This is attributed to rapid tumor progression, locally aggressive behavior as well as the common findings of CSF pathway spread. Early intervention including aggressive surgery as well as aggressive radiation and chemotherapy have been advocated to increase the disease free interval and to prolong survival. Despite these measures; however, survival of patients with cerebellar GBM is very poor, in the range of 3-22 months.

This case is an unusual presentation due to the presence of significant hemorrhage, well-defined margins, minimal contrast enhancement and minimal edema. There were few features helpful in making the correct specific prospective diagnosis of glioblastoma multiforme. However, GBM should be included in the differential diagnosis of a hemorrhagic infratentorial mass with rapid progression of clinical findings as well as imaging findings considered atypical for the common entities that occur in the posterior fossa.

CONCLUSION

In general, the presentation of glioblastomas occurs in the supratentorial region but in less than 4% of cases occur in the posterior fossa particularly in the cerebellum, there are very few cases reported. Its pathogenesis and prognosis are not yet fully clarified, there are some data that suggest a worse prognosis. The differential diagnosis with metastatic posterior fossa tumors or cerebellar abscess is a challenge for the doctor due to the similarity in the location, for this the magnetic resonance

imaging (MRI) is mandatory as well as the pathological anatomy and the molecular diagnosis. The treatment for these lesions is like the supratentorial GBM, knowing that surgical resection is conditioned by its location and the implications in neurological sequelae, which is why it is very limited.

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Short Communication

Fatty Liver- No Longer Benign !

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Keywords : Fatty liver, Cirrhosis, NASH

Fatty Liver - Changing Concepts

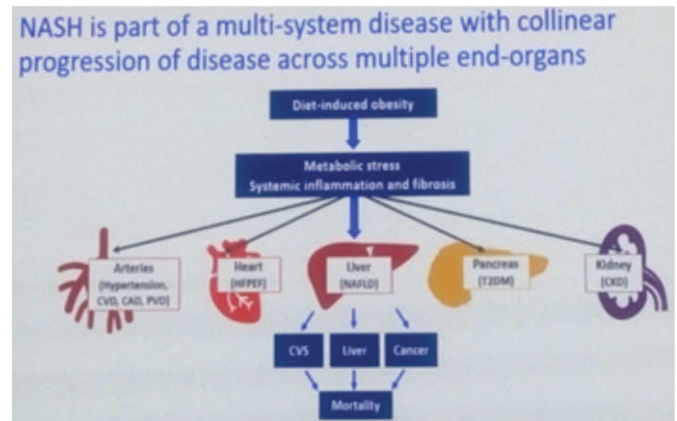
◆ NAFLD (Nonalcoholic Fatty Liver Disease) :

- NAFLD is the most common cause of chronic liver disease in Western nations
- 4th – 6th decades of life
- Men > Women
- Hepatic manifestation of metabolic syndrome
- Evidence of excessive fat accumulation in the form of triglycerides (steatosis) in the liver by histology (> 5% of hepatocytes) or imaging (> 33% of hepatocytes)
- There should be no causes for secondary hepatic fat accumulation

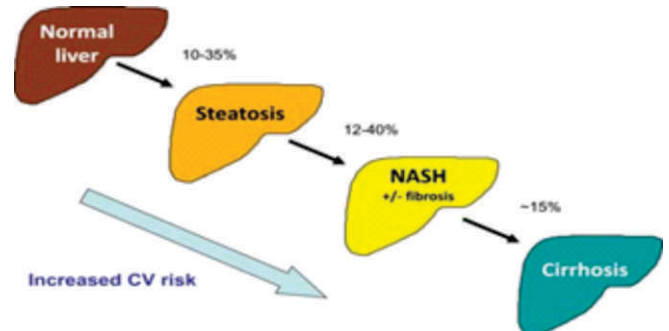
- >80% of NAFLD pts have an increased BMI
- 30-40% are obese
- ~50% show signs of insulin resistance
- 20-30% have type 2 diabetes
- 80% show hyperlipidemia

Table 2. Common Causes of Secondary Hepatic Steatosis

Macrovesicular steatosis	
- Excessive alcohol consumption	
- Hepatitis C (genotype 3)	
- Wilson's disease	
- Lipodystrophy	
- Starvation	
- Parenteral nutrition	
- Abetalipoproteinemia	
- Medications (e.g., amiodarone, methotrexate, tamoxifen, corticosteroids)	
Microvesicular steatosis	
- Reye's syndrome	
- Medications (valproate, anti-retroviral medicines)	
- Acute fatty liver of pregnancy	
- HELLP syndrome	
- Inborn errors of metabolism (e.g., LCAT deficiency, cholesterol ester storage disease, Wolman disease)	



• Natural history of NAFLD •



- Most common cause of death in patients with NAFLD is cardiovascular disease.
- HCC (Hepatocellular carcinoma) and liver related events in NAFLD largely occur in advanced fibrosis and cirrhosis.

• When to suspect NAFLD?

A. Presence of risk factors:

- Overweight-obesity
- Features of metabolic syndrome- T2DM

Prevalence of NAFLD			
India	Asia	West (USG + Biopsy)	
Ultrasound		NAFLD	46%
9-30 %	15-30%	NASH	12.2%
		NAFLD	NASH
Patients with bariatric surgery		91%	37%
Diabetes		60-76%	22%

NASH (Non-alcoholic steatohepatitis)

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B. Liver injury without other causes:

- Abnormal AST, ALT

C. Direct evidence of increased hepatic fat:

- Imaging (US, CT scan, MRI)

SYMPTOMS	SIGNS
1. None (48 - 100%) 2. Vague RUQ pain 3. Fatigue 4. Malaise	1. Hepatomegaly (75%) 2. Splenomegaly 3. Spider angiomata 4. Palmar erythema

◆ **Laboratory Investigations:**

- 2 to 4 time ↑ of serum ALT and AST levels (Invariably below 250 IU/l)
- AST/ALT ratio < 1
- S. alkaline phosphatase slightly elevated (1/3)
- S. bilirubin, S. albumin and PT usually Normal
- Elevated serum ferritin level (20-50%)

◆ **Imaging :²**

A. Hepatic Ultrasound: Fatty liver

B. Hepatic CT Scan

- Steatosis decreases CT attenuation of the liver (10 or more Hounsfield units lower than spleen on a noncontrast-CT)

C. MRS (Magnetic resonance spectroscopy) is the best modality.

D. None of these methods can diagnose steatohepatitis or accurately assess the stage.

◆ **Is Intervention needed?**

Table 85-A – Risk Factors for Advanced* Nonalcoholic Fatty Liver Disease

Clinical
Older age (>50 years)
Obesity
Diabetes mellitus/insulin resistance
Hypertension
Laboratory
AST/ALT ratio > 1
Serum ALT level > twice the upper limit of normal
Serum triglyceride levels > 155 mg/dL
Histologic
Severe steatosis
Necroinflammatory activity (hepatocyte ballooning, necrosis)
Stainable iron

◆ **Noninvasive Markers of Fibrosis in NAFLD**

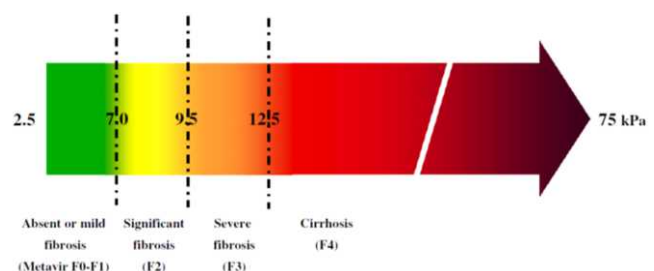
A. Fibrosis (FIB) – 4 score³

$$FIB-4 = (Age \times AST) / (Platelets \times \sqrt{ALT})$$

- Fib-4 score < 1.30 = F0-F1
- Fib-4 score > 2.67 = F3-F4
- Liver biopsy could have been avoided with **86%** accuracy.

B. Transient elastography (Fibroscan)⁴

- Uses ultrasound waves to **quantify liver stiffness** and **estimate fibrosis**
- Works well in determining extremes of liver disease - minimal scarring from cirrhosis.
- **Liver stiffness: 2.5 to 75 kPa (kilo-pascals)**
- **Cut off for cirrhosis is 12.5 kPa**
- Results operator-independent



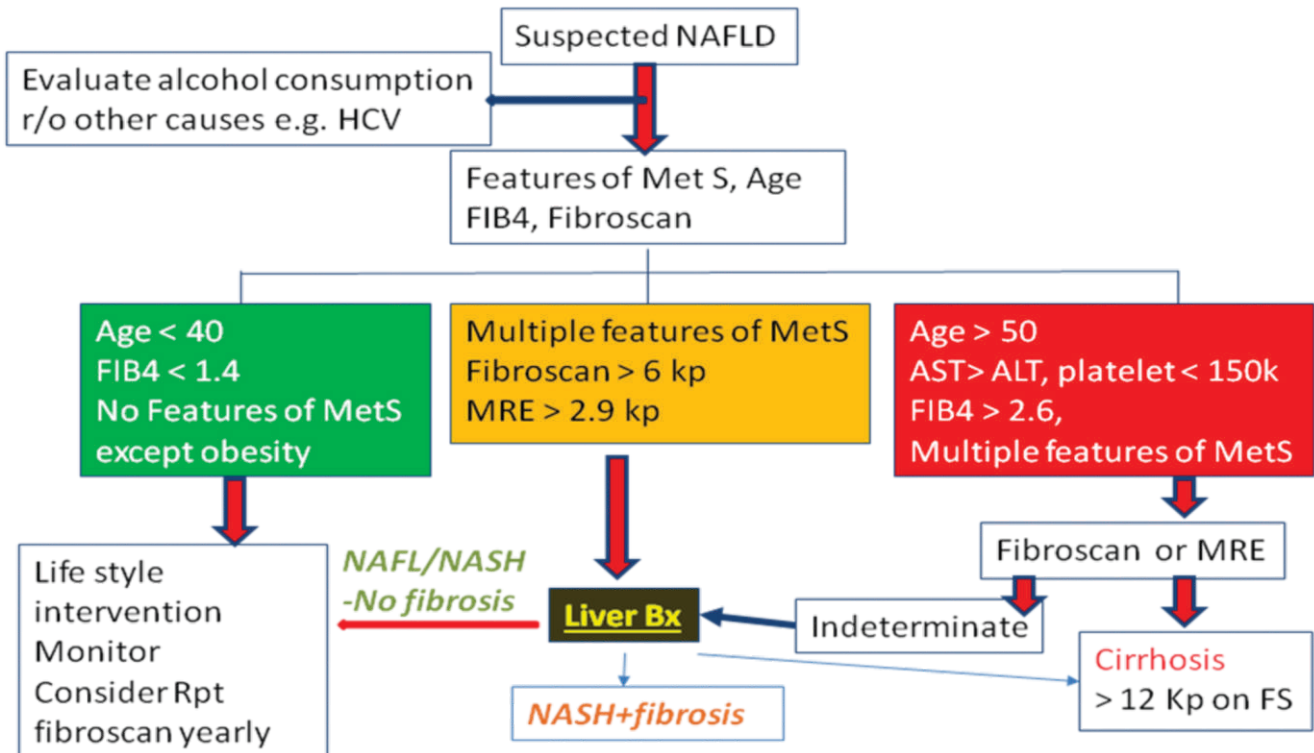
◆ **NAFLD & Liver Biopsy⁵**

- Histology – **only proven method to distinguish NASH from steatosis**
- Gold standard for **fibrosis grade and stage**
- **Advantages:**
 - Allows **diagnosis** & provides **prognosis**
 - Selection for **surveillance for Cirrhosis & HCC**
- **Limitations:**
 - Potential for clinical risk and **potential false negatives**
 - **Variation in interpretation**
- **RECOMMENDATION for Liver Biopsy**
 - NAFLD who are at **increased risk to have steatohepatitis and advanced fibrosis.**
 - Suspected NAFLD in whom **etiologies** for hepatic steatosis and co-existing **CLD** cannot be excluded without a liver biopsy

◆ **Goals of therapy⁶**

- Improve all cause mortality, quality of life and functional outcomes:
 - **Cardiovascular outcomes**
 - **Liver related outcomes**
 - **Cancer related outcomes**

Work up of NAFLD: Risk stratification and who to biopsy



◆ Dietary Modification⁷

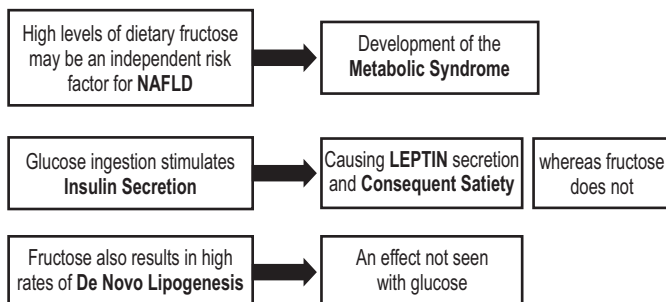
♣ Total calorie restriction: ((1,200-1,500 cal/d)

- Most important goal for steatosis → Leads to weight loss

♣ Macronutrient modification:

- Low carbohydrate diet vs. Low Fat diet
 - ▣ Both similar to lower liver fat, serum ALT and induce weight loss.
- Low carbohydrate diet (50% whole grain)
 - ▣ Better in improving insulin sensitivity in pts. with glucose intolerance
- Low fat diet (35% total energy): Less saturated fat, More Polyunsaturated Fat

◆ Dietary Modification- Fructose avoided



- ✓ High Dietary FRUCTOSE should be avoided
- ✓ Modest amounts of naturally occurring sources such as fruit are permissible.

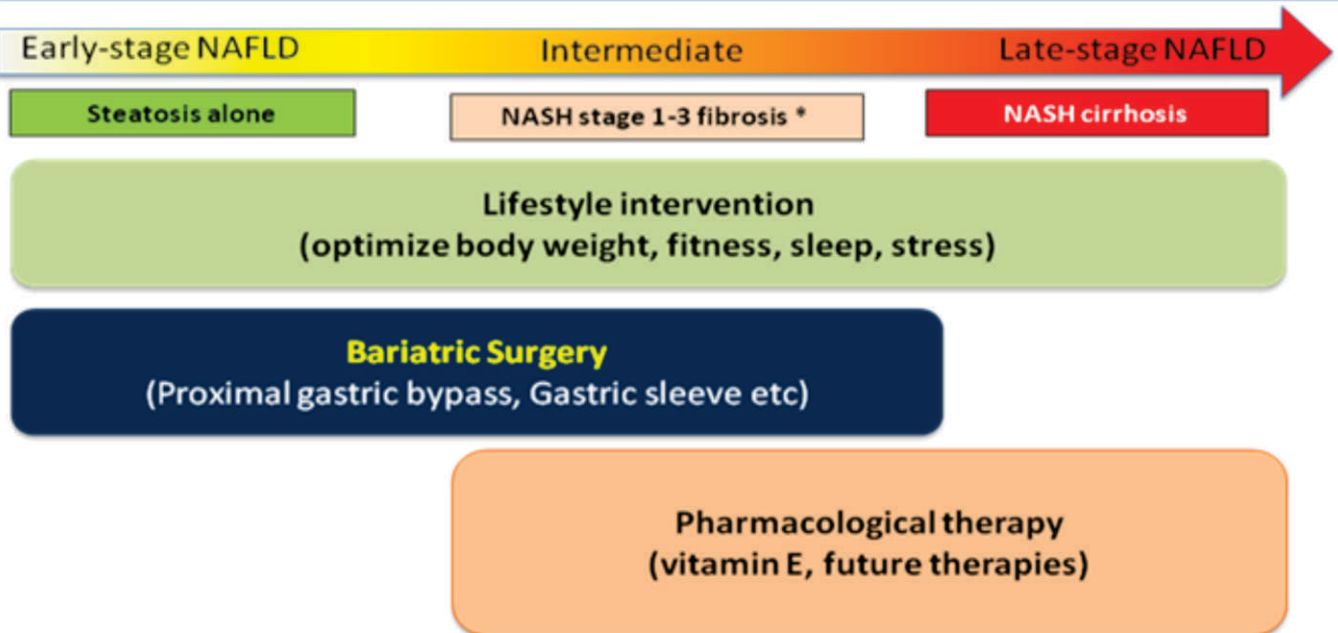
◆ Weight loss intensity is strongly associated to improvement of histological parameters in patients with NASH after 52 weeks of lifestyle modification⁸

- 5% weight loss improves steatosis
- 7% weight loss improves steatohepatitis
- 10% weight loss improves fibrosis in 45% of patients at 1 year

◆ Vitamin-E:⁹

- Vitamin E 800 IU/day improves liver histology in **biopsy-proven NASH**
- **Should be considered as a first-line therapy**
- **Vitamin E is not recommended to treat**
 - ✓ NASH in diabetic patients
 - ✓ NAFLD without liver biopsy
 - ✓ NASH cirrhosis/Cryptogenic cirrhosis

A stage-based approach to the treatment of NAFLD



* Biopsy confirmed but may change to non-invasive profile

❖ Drug therapy of NASH must be provided only in those with documented and established NASH

Screening for HCC and oesophageal varices

◆ Other Therapies (Not proven benefits)

- Ursodeoxycholic acid (UDCA)
- S-Adenosyl Methionine
- N-acetylcysteine
- Statins
- Metformin
- Omega-3 Fatty acids

◆ Liver Transplantation

- NAFLD with ESLD should be evaluated for liver transplantation
- Outcome in these pts is good, although NAFLD can recur after transplantation

◆ Future Drug therapies for NAFLD

1) Elafibranor

- PPAR α/δ agonist – Peroxisome proliferator activated receptor

2) Saroglitazar

- Dual PPAR α and γ agonist

3) Obeticholic acid

- Semi-synthetic bile acid

4) Licoglitflozin

- SGLT 1/2 Inhibitor (Sodium dependent Glucose cotransporters)

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