NARCHI BULLETIN

Sir Ganga Ram Hospital, New Delhi, 2024-25

June 2024, Issue 1

THEME: OPTIMIZING PREGNANCY OUTCOMES

UPDATEKNOWLEDGEUPGRADESKILLSUPLIFTWOMEN'SHEALTH

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NARCHI DELHI CHAPTER

Institute of Obstetrics & Gynaecology, Sir Ganga Ram Hospital, New Delhi

You are well aware that the International Community Celebrates 11th July every year as World Population Day. The Govt. of India has been giving due emphasis to the issue of Population Stabilization and all states observe a month long campaign in the month of June and July every year.

The theme for this year World Population Day

"Healthy timing & spacing of pregnancies for wellbeing of mother and child".

The National Slogan for WPD 2024 has been themed as follows:

Viksit Bharat Ki Nayi Pehchan Parivar Niyojan har Dampati Ki Shaan

विकसित भारत की नई पहचान परिवार नियोजन हर दम्पति की शान

The activities are spread over two phases each lasting a fortnight, the **first one** dedicated to demand generation and **second one** dedicated to intensified service delivery.

The details of the fortnights to be observed are as follows:

Phase I: First Pakhwada (Fortnight) as the "**Dampati Sampark Pakhwada**" or "**Mobilization Fortnight**" from 27th June, 2024 to 10th July, 2024.

Phase II: Second Pakhwada "**Jansankhya Sthirta Pakhwada**" or "**Service Provisioning Fortnight**" from 11th to 24th July, 2024.

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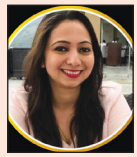
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FROM THE PRESIDENT'S PEN

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Warm Greetings to Everyone !

It is my great pleasure and privilege to thank our Patrons, Advisors, Seniors and colleagues who had faith in us, as we took over the charge of NARCHI Delhi Chapter.

Sir Ganga Ram Hospital took over the secretariat of NARCHI Delhi Chapter, a voluntary philanthropic service organization on 18/03/2024 amidst a great scientific bonanza.

I am extremely proud of my entire team which is guided by our far sighted Patrons Dr. B.G. Kotwani, Dr. M. Kocchar, Dr. P. Chadha. We are very lucky to have our advisors Dr. Kanwal Gujral, Dr. Abha Majumdar, Dr. Harsha Khullar who always give positive advice and directions to all our activities.

Our core team is young and vibrant with brand new ideas and innovations as Vice President Dr. Chandra Mansukhani - a great support, Secretary Dr. Kanika Jain – lively and enthusiastic, Scientific Chairperson Dr. Geeta Mediratta with Dr. Rahul D Modi who are our strong scientific pillars, Dr. Punita Bhadwaj - Chairperson of Out Reach Committee with great initiatives and enthusiasm Dr. Neeti Tiwari - Treasurer our most sought after personality. They all are adding strength to our core team.

Dr. Mamta Dagar, Dr. Ruma Satwik, Dr. Sakshi Nayar have happily taken the responsibility of spear heading the NARCHI Bulletins. We are all looking forward to have recent and focused scientific contents in all our bulletins with brand new ideas.

Among our strong supports are Dr. Debasis Dutta - Workshop & CME Coordinator, Dr. Sharmistha Garg - Joint Secretary with Dr. Shweta Gupta, Dr. Ila Sharma, Dr. Huma Ali, Dr. Bhawani Shekhar, Dr. Purvi Khandelwal, Dr. Sunita Kumar and Dr. Ashmita Jawa as well as Dr. Gaurav Majumdar. Our team is enthusiastically working hard to deliver good work with innovations and naïve plans.

We present our inaugural NARCHI Bulletin with the theme "Optimizing pregnancy care improving outcomes". We have excellent and exhaustive articles from experienced teachers like Dr. Kanwal Gujral and Dr. Manju Puri. The contribution from Dr. Aruna Nigam, Dr. Mamta Dagar and Dr. Ruma Satwik are really informative. The research articles and prized papers will add glitter to the academic contents of the bulletin. Hope this bulletin comes upto the expectation of all our members and will provide a great reading experience.

The medical science is advancing with leaps and bounds. Everyday we are enlightened with new protocols and guidelines. We desire that our bulletins will enrich our members with extensive knowledge and trends in recent advances so that they will be highly benefitted and updated with the latest scientific material.

Long live NARCHI Delhi Chapter !!

Dr. (Prof.) Mala Srivastava

FROM THE VICE PRESIDENT'S PEN

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Vice President of NARCHI Delhi Chapter
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Dear Members of NARCHI Delhi Chapter,

Warm Greetings to Everyone!

It is a great honour and pleasure to convey regards and express gratitude to our Patrons, Advisors, Seniors and Colleagues for having faith in us since we have taken over the charge of NARCHI Delhi Branch under the able leadership of Dr. Mala Srivastava as a president.

Our team includes Dr. Geeta Mediratta - Scientific Chairperson, a strong scientific pillar, Dr. Punita Bhardwaj - Chairperson of Outreach Committee with new ideas and enthusiasm, Dr. Neeti Tiwari - Treasurer a vibrant personality, Dr. Kanika Jain - a young enthusiastic secretary of NARCHI Delhi Chapter.

I am pleased to welcome all our esteemed faculty members and post-graduates to the launch of first edition of our NARCHI Delhi Chapter's Bulletin.

Dr. Mamta Dagar, Dr. Ruma Satwik and Dr. Sakshi Nayar have worked hard to fulfill the vision of disseminating knowledge and follow the highest ethical standards in presenting this inaugural copy of NARCHI Bulletin with aptly chosen theme "Optimizing Pregnancy Care Improving Outcomes".

Through this bulletin, we aim to share valuable insights, provide updates on recent developments and offer a platform for exchanging knowledge and best practices in the field of reproductive and child health.

I hope this collection of excellent scientific articles from experienced teachers will update and enrich our post-graduates and members regarding the latest guidelines and protocols.

Thanks and Best Wishes

Long Live NARCHI Delhi Chapter !!

FROM THE SECRETARY'S DESK

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(2024-26)

Greetings to all members of the association!

Hope you and your families are safe and doing well!

It's an honour to be writing this message as Secretary NARCHI-Delhi and a great pleasure to connect with every member of NARCHI through this platform. I Shall work hard to shoulder this responsibility bestowed upon me with the best of my capabilities.

This is the first quarterly Bulletin being brought out since we took over secretariat from Lady Hardinge Medical College from 1st April 2024. Our Editorial team members Dr Mamta Dagar, Dr Ruma Satwik and Dr. Sakshi Nayar, has worked very hard, putting their heart and soul into it, using innovative ideas and compiling great academic write-ups for the benefit of all members.

The theme of this bulletin is "Optimising Pregnancy Outcomes".

Under the Guidance of our Patrons and Advisors, Our team with Dr Mala Srivastava as president, Dr Chandra Mansukhani as VP and Dr Geeta Mediratta as Scientific Chair, is planning to hold the annual conference on 5th and 6th October 2024 in Hotel Lalit with 8 preconference workshops. We are preparing to welcome you all to this scientific extravaganza.

As the saying goes- "**Coming together is the Beginning, Keeping together is Progress, Working together is Success**"

Lets leverage the NARCHI-Delhi to synergize and promote excellence in Women's Health !!!

Regards,

Dr Kanika Jain

Secretary NARCHI-Delhi chapter

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Dear Reader

With great pleasure, we bring to you the first issue of NARCHI-Delhi Bulletin for the academic year 2024-25 which is dedicated to "Optimizing Pregnancy Outcomes".

This first issue features articles on Respectful Maternity Care, Care of an Obese Pregnant Woman; Robson's Classification of Caesarean Section; Optimizing Feto-Maternal Outcomes in Difficult Cesareans; Pregnancy Losses after ART treatments; and Journal Scan on The Fourth Trimester.

The salient feature of NARCHI bulletins this year would be an interesting prize-winning research article, presented at the NARCHI Annual Conference, as the editorial office's endeavour to recognize and encourage the awardees.

In designing the cover page, the message conveyed can be many. Here, we looked at a design that could have an instant connect with the audience and yet be meaningful. Therefore, we brought together real mother-child pairs in a collage. Each of these photographs depicts young fearless women who went against convention, bearing fierce hardships, to ensure that the children they are holding in their strong arms become what they are today: successful professionals: the gynaecologists, the perinatologists and the paediatriacians who work towards protecting that very precious mother-child bond which sustains societies. Incidentally, the children in the pictures happen to be the current office bearers of NARCHI. This issue is dedicated to all the mothers who are in this collage and who are not: the forces of nature around whom the family runs.

In the future, we hope to add more pictures to this collage with contributions from our esteemed readers.

Sincerely,

Mamta Dagar, Ruma Satwik, Sakshi Nayar

Respectful Maternity Care

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Introduction

Respectful maternity care is known as **"Humanization of Childbirth"**. This includes care of mother across antenatal, intranatal, and postnatal periods. It emphasizes the need to humanize childbirth, taking a woman centric approach and embeds the newborn care with maternal care. The transition from home-based care during pregnancy and childbirth to facility-based care with the aim to improve maternal and perinatal outcomes brought in with it, an increase in disrespect and mistreatment of mothers and newborns. This was also a transition for mothers birthing in their homes supported by their relatives to birthing alone surrounded by unfamiliar healthcare providers in unfamiliar surroundings of public facilities. RMC is an attitude that is expressed through verbal and non-verbal communication involved in the care of women and newborn during pregnancy, childbirth, and immediate postpartum period.

Respectful maternity care has been recognized as an important factor in promoting institutional births, improved birth outcomes and in determining patient and her family's future health seeking behavior. Disrespectful care is an important barrier in utilization of skilled birth facility-based care.

This phenomenon of mistreatment and disrespect is not confined only to low- and middle-income countries but is global. It is there in both private and public sector. This issue was highlighted globally in 2010 after a review published by Browser and Hill on major categories and drivers of abusive maternal care. [1] They identified seven categories of disrespect and abuse. These included physical abuse, non-consented care, non-confidential care, non-dignified care, discrimination based on specific patient attributes, abandonment of care, and detention in facilities.

WHO brought out a statement in 2014 on prevention and elimination of mistreatment during childbirth. [2] This was followed by a systematic review by Bohren (2015) which further raised the awareness across the world. [3] Since then many reviews have been published in literature.[4]

Components of RMC

WHO defines good quality maternal and newborn care as one that is 'safe, effective, timely, efficient, equitable and people-centered'. One of the very important yet overlooked aspects of maternity care is respect, dignity and emotional support using effective communication. A woman's experience with health care providers in Labour Rooms can either empower and comfort them or inflict long lasting damage and emotional trauma. Respectful Maternity Care is a universal human right that is due to every childbearing woman in every health system around the world. It includes providing dignity, autonomy, privacy, confidentiality, freedom from ill treatment and coercion and consideration for the preferences of mothers. An RMC charter on the universal rights of childbearing women was developed in 2011 by the International Human Rights Declarations and Conventions and later modified in 2019 to include the rights of the newborn as well. [1] (Table no 1)

Table1: Universal rights of women and newborn 2019

1	Right to freedom from harm and ill treatment.
2	Right to information and informed consent.
3	Right to a companion of their choice and preference during maternity care.
4	Right to privacy and confidentiality.
5	Right to be treated with dignity and respect.
6	Right to equality, freedom from discrimination and equitable care
7	Right to healthcare and highest attainable level of health.
8	Right to liberty, autonomy, self-determination, freedom from arbitrary detention, and refusal to informal payments
9	Right of every child to be with their parents or guardians.
10	Right to an identity and nationality from birth.
11	Right to adequate nutrition and clear water.
12	Right of women and newborn for timely and effectively grievance redressal.

Right to freedom from harm and ill treatment

One of the four pillars of ethics is first do no harm. Use of interventions which are not evidence based like episiotomy, induction of labour, caesarean sections, unnecessary antibiotics etc flout this component of RMC. Causing physical harm during shifting, insulting, intimidating, threatening or hitting the mother while performing procedures or during childbirth are examples of disrespect and violence under this category

Right to information and informed consent

All mothers have the right to have full information on the indications, risks and benefits, alternatives and details of all the procedures or interventions being offered to them. They have the right to make choices. This includes explaining the mother in an unbiased manner the management plan and procedures (e.g. Induction or augmentation of labour, CS) and take consent. Information and support on positions for labour and birth, fluid intake, emptying bladder regularly, exercises for labour, early initiation of breastfeeding etc must be provided to them.

Right to a companion of their choice and preference during maternity care

All mothers have a right to choose one birth companion to be with her during delivery both in private and public facilities. Government of India have laid down some conditions regarding this keeping in account the feasibility in heavy load public facilities. This includes allowing a female relative who has given birth to a child.

Right to privacy and confidentiality.

This includes keeping the patient records in a secure place inaccessible to general staff or visitors, not discussing personal details about any client publicly. The details include the personal information about the mother (e.g. HIV +ve or HBSAg +ve or marital status), progress of labour of a woman, or any complications etc.

Right to be treated with dignity and respect.

This right calls for separating eexamination tables and delivery beds with screens, exposing only appropriate body parts during examination, explaining and take consent before any examination, sharing examination findings with the woman and listening to the woman carefully.

Right to equality, freedom from discrimination and equitable care

This right calls for no discrimination based on caste, religion, socioeconomic status, education, HIV status, etc.

Right to healthcare and highest attainable level of health

This right calls for organization of emergency room, labour room and related areas in a manner that enables prompt, complete and quality care for every mother and new-born. It means that no mother is left unattended and ensuring that every mother and new-born receives the full packages of services at the right time in correct manner. It also means that healthcare providers observe re recommended practices for infection prevention for every client (use of PPE, avoiding unnecessary P/V examinations)

Right to liberty, autonomy, self-determination, freedom from arbitrary detention, and refusal to informal payments

This means that women have the liberty of decision making and should not be detained in the hospital against her wish. She must be discharged early if not

willing to stay after explaining the consequences. This also includes refusal to any informal payments demanded by the HCPs or support staff.

Right of every child to be with their parents or guardians

This includes keeping the mother baby dyad together after birth. It means no baby must be separated from the mother and kept in the nursery unnecessarily.

Right to identity and nationality from birth.

This includes providing the name and nationality to the baby at birth, especially in reference to babies born to unmarried mothers, surrogate mothers etc.

Right to adequate nutrition and clear water.

All mothers must have access to food and clean water during their stay at facility for childbirth and early initiation of breast feeding by the mother to the newborn

Right of women and newborn for timely and effectively grievance redressal.

Every facility must have a robust redressal system in place for any grievances.

Factors contributing to Disrespect and Abuse

These include factors related to individuals, community, policy, Governance, leadership, service delivery and providers. Disrespect and abuse during childbirth has been normalized given the lack of autonomy and empowerment to women by our society. Women and families from poor socioeconomic status do not have many options to choose from. There is no community engagement or any feedback. There is a lack of importance given to human rights and ethics in the national health policy, the enforcement agencies are weak and so is the legal redressal system. The health systems have been forever struggling with the provision of healthcare, especially in LMIC. Quality of care, especially the patient centric approach, has come to focus only recently. The health system is weak. There is a lack of standards of care provision, infrastructure, and training especially as regards RMC. The HCPs are overwhelmed with the workload and frustrated with the shortage of staff and poor infrastructure. They are often blamed for lapses in care instead of strengthening the system. There is no accountability or redressal system. Due to lack of any feedback, accountability and redressal RMC is missing.

Interventions to promote RMC [5-8]

Various interventions have been studied for establishing the practice of RMC in various healthcare settings. Some of the interventions which have shown to have a positive impact are listed as below:

1. RMC workshops including simulation-based training for HCPs including doctors' nurses and support staff to hone up their communication skills to provide support information and empathy during childbirth.
2. Antenatal classes on birth preparedness for antenatal women in third trimester of pregnancy
3. Establishing a quality improvement team and train HCPs in point of care QI methodology to work towards the improvement of mother-centred care through a plan-do-study-act (PDSA)
4. Have RMC monitoring and evaluation training teams for setting up triage room, ensuring privacy (curtains), essential drugs, display of protocols, recognize best performing HCP every month and provide continuous supportive supervision to quality improvement team.
5. Promote birth companions by sensitizing HCPs, pregnant women and their families by workshops, public forums, banners and posters in antenatal clinics and labour wards. Educate birth companions on their role by video program promoting birth companion
6. Display posters displaying universal rights of childbearing women developed by White Ribbon Alliances and infographics prepared by WHO outside labour rooms and antenatal clinics
7. Dissemination of evidence-based practices of positive birth experience. Minimize the use of non-evidence-based interventions like timing of childbirth by CS and IOL, overuse of antibiotics, procedures like episiotomy, birthing in lithotomy position etc

These interventions need to be implemented simultaneously at multiple levels including community level, facility level and policy interventions.

Conclusion

Respectful maternity care is the right of all pregnant women. It is the predictor of health seeking behavior of our future generations and should be in the DNA of all health systems. It can be provided without any additional resources. All mothers must be treated with respect, dignity and emotional support during

childbirth. RMC is a non- negotiable part of Health care. The Government, professional organization and community advocacy groups must take initiative to sensitize the HCPs and the beneficiaries to the charter of rights of mothers. The policy makers need to focus on this neglected but important aspect of childbirth. Health sectors need to have a structure where the process of care provision of care and experiences are interlinked. Experience of care includes effective communication with woman and her family, respectful and dignified care and woman has freedom to choose her emotional support at time of delivery [9].

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Care of an Obese Pregnant Woman

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Obesity is a global public health epidemic. In India, prevalence of obese or overweight married women (15 – 47 years) has risen form 11-15% to 20.61% as per NFHS survey 4.[1] Obesity perhaps today is the commonest medical condition affecting pregnancy. Maternal & fetal risks associated with an obese pregnant woman are[2]

Maternal Risks	Fetal Risks
➢ Miscarriage	➢ Congenital malformations
➢ RPL	➢ Macrosomia
➢ GDM	➢ Shoulder dystocia
➢ Pre-eclampsia	➢ Prematurity
➢ VTE	➢ Still birth
➢ Mental disorders	➢ NICU admissions
➢ Operative vaginal delivery	➢ Neonatal death
➢ Higher cesarean section rates	➢ Long term cardio-metabolic risks in offsprings
➢ Post partum haemorrhage	
➢ Post partum pyrexia	
➢ Anaesthesia related complications	

Care of an obese pregnant woman starts in pre conception period and continues till post partum period and thereafter too. Following are the salient features of five international guidelines – ACOG, FIGO, SOGC, RCOG and RANZCOG regarding care of an 'obese pregnant woman[(2-8)]

Preconception Care

- Measure BMI at first visit and classify obesity as overweight 25-29.9 kg/m^2, class I 30-34.9 kg/m^2, class II 35-39.9 kg/m^2 and class III > 40 kg/m^2.
- Check for co-morbidities such as hypertension, diabetes mellitus, renal dysfunction, liver dysfunction, cardiovascular disease, pulmonary disease, skin disease, signs of VTE and seek appropriate referral as indicated.
- Folic Acid supplementation at a dose of 1-5 mg atleast 1-3 months prior to planning pregnancy. 150 mg of Iodine is recommended by RANZCOG.
- Weight management by nutritional counselling, exercise and bariatric surgery as required.
- Monitor nutritional status and ensure adequate nutritional supplementation in women who have undergone bariatric surgery.
- Plan pregnancy after an interval of 12-18 months post surgery. SOGC & RANZCOG recommend a waiting period of 24 months.

Ante Partum Care

- Record BMI at first antenatal visit.
- Assess for associated comorbidities including mental health and seek appropriate referrals.
- **Gestational weight gain:** Target 5-9 kg for obese women, 6-11.3 kg for overweight, 0.5 - 2 kg

weight gain in first trimester and linear weight gain in second and third trimester.

- **Exercise:** Advise 150 minutes of aerobic activity or strength containing exercise per week. For previously sedentary women, walking for 25 minutes per day in early second trimester, extending by two minutes per session per week till a target of 40 minutes is achieved. Do not forget safety concerns and underlying medical conditions.
- **Nutrition :** 2100 kcal per day in first half of pregnancy and 2400 kcal after 20 weeks, daily carbohydrates at 40-55%, fats at 25-30% and proteins at 20-25%. Daily fibre consumption 20-35 grams.
- **Screening For Aneuploidies:** Use TVS for better evaluation of NT. Serum biochemical markers adjusted as per weight and calculate risk. Regarding NIPT : Counsel women that low fetal fraction can result in higher failure rates and repeat testing may be required. In case of uninterpretable test, combination of comprehensive ultrasound evaluation, and amniocentesis are the options.
- **Screening for fetal anomalies:** Obesity compromises images, hence use transvaginal ultrasound, umbilicus as an acoustic window, or tissue hormonic imaging.Combination of early anomaly scan and a repeat scan at 20 weeks usually suffices.
- **Fetal Surveillance**
  - Assess fetal growth 4 weekly at 28, 32 and 36 weeks.
  - Weekly assessment of fetal well being from 37-40 weeks.
  - Paucity of data for routine management of post term pregnancy.
  - Symphysis fundal height is inaccurate in obese women, specially at BMI$\geq$35 kg/m^2
- **Venous thromboembolism:** Assess risk and start appropriate prophylaxis.
- **Medications**
  - 0.4 to 5 mg Folic Acid for prevention of NTDs.
  - Iron and B12 as for non obese women.
  - Vitamin D 4,000 IU daily.
  - Iodine 150 mg daily.
  - Calcium 1-2 gm daily.
  - Aspirin 100-150 mg from 12 weeks onwards for prevention of preeclampsia as obesity itself is a risk factor for pre-eclampsia.
- **Mental health :** Assess for anxiety, depression, intimate partner violence, seek appropriate referrals and offer psychological support.

Intra- Partum Care

- No recommendation on mode and timing of delivery.
- Consider labour induction at 39-40 weeks.
- Seek early anaesthesia referral at admission in labour room.
- Place IV cannula early at admission.
- Continuous EFM during active labour. Consider internal fetal monitoring and intrauterine pressure if external fetal monitoring is not feasible.
- Be vigilant for shoulder dystocia.
- Early placement of epidural catheter if labour analgesia is asked for.
- Active management of third stage of labour.
- **Cesarean Section**
  - Consider elective cesarean section at EFW > 4.5 kg.
  - Skin preparation with alcohol based solution.
  - Vaginal cleansing with betadine in case of ruptured membranes or in labour cesarean section.
  - Pre operative antibiotics 15-60 minutes before skin incision.
  - Be aware of difficult entry and long induction delivery interval.
  - Abdominal incision - Transverse, supraumbilical, sub umbilical, supra-panniculus or infra-panniculus. No data to establish superiority of one over another.
  - Self retaining catheter or adhesive tapes on either side can facilitate surgical exposure.
  - Ensure good haemostasis.
  - Suture subcutaneous tissue of depth > 2 cm.
  - Intrapartum mechanical thromboprophylaxis for all cases, consider pharmacological thromboprophylaxis as per local protocol.
  - Post cesarean, monitor incision site for early signs infection, hematoma, seroma or dehiscence. Keep panniculus dry and clean.

Post – Partum Care

- Mechanical thrombo prophylaxis for all cases and continue till patient is ambulatory.
- Pharmacological thrombo prophylaxis on additional risk factor or as per local protocol.
- Low molecular weight (LMW) heparin instead of unfractionated heparin.
- Dedicated assistance for breast feeding, skin to skin contact.
- Reassess for mental health and give psychological support.
- Exercise and nutritional advice from trained personal for weight management.
- Follow up at 6 weeks, 12 weeks and perform appropriate tests for pregnancy complications such as pre eclampsia, gestational diabetes etc.
- Give appropriate contraceptive advice. Copper or levonorgestrel IUCD, sub dermal implants, DMPA, progesterone only pill all can be prescribed.
- Emphasize on annual health check up.

Health Care Facilities

- Experienced health care clinicians and appropriate equipments such as large wheel chairs, delivery beds, surgical tables, large sized BP cuffs, theatre gowns are mandatory health care facilities for handling an obese pregnant woman.
- Most importantly a warm, comfortable and welcome environment should await the obese parturient at entry to health care facilities.

Conclusion

Uniform protocol and multidisciplinary management of obesity during pre-conceptional, antepartum, intrapartum & post partum period can minimize complications resulting in favorable outcome for mother and her offspring.

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Robsons classification of caesarean section: Implications in reducing caesarean section

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Introduction

Caesarean sections (CS) are a life saving procedure when complications arise during pregnancy and labor. However, it's a major surgery and is associated with maternal and perinatal risks which have implications on future pregnancies as well. The use of caesarean sections has increased dramatically over the decades. The reasons are multifactorial and not completely understood.

Rising Caesarean Section Rates: A Major Public Health Concern

The increasing rates of Caesarean sections (CS) are a significant concern for obstetricians, women, and society as a whole. As CS rates continue to rise, it is imperative to reassess the factors contributing to this trend. Higher CS rates are associated with potential maternal and perinatal risks, cost issues, and inequity in access to care.

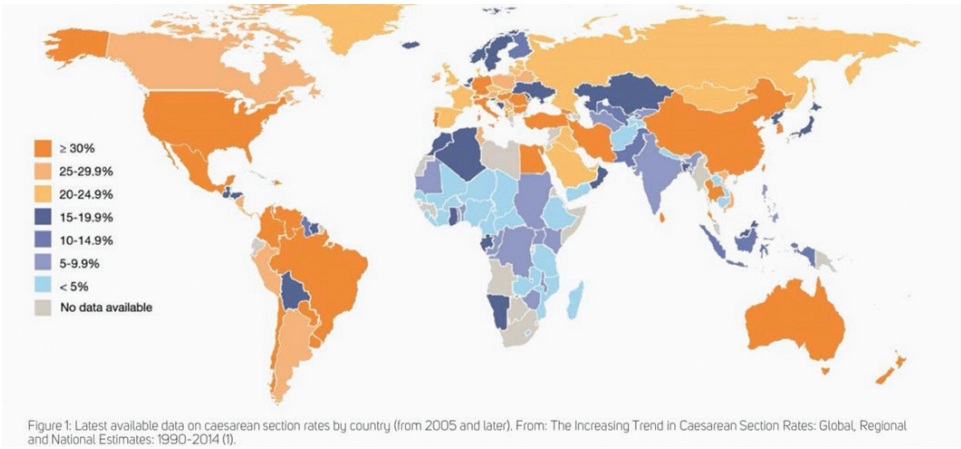

Figure 1: Latest available data on caesarean section rates by country (from 2005 and later). From: The Increasing Trend in Caesarean Section Rates: Global, Regional and National Estimates: 1990-2014 (1).

Figure 1-Cesarean section trends all over world

As seen in figure1, there is increasing trend in caesarean sections and section rate is more than 30 percent in many countries.[2]

Need for reducing current caesarean rates in present scenario

For nearly 30 years, the ideal rate for caesarean sections was considered to be between 10% and 15% all over the world. This was based on the statement by a panel of reproductive health experts at a meeting organised by the World Health Organisation (WHO) in 1985 in Fortaleza, Brazil: "There is no justification for any region to have a rate higher than 10-15%".[3] Beyond this threshold, higher CS rates do not correlate with reduced mortality rates.

According to a WHO systematic review, increasing CS rates up to 10-15% at the population level is associated with decreased maternal, neonatal, and infant mortality. Medically indicated CS can effectively prevent maternal and perinatal mortality and morbidity.[4] However, there is no evidence showing benefits for women or infants when the procedure is not medically necessary. As with any surgery, CS carries short- and long-term risks, potentially

affecting the health of the woman, her child, and future pregnancies, especially for those with limited access to comprehensive obstetric care.

According to the 2004-2008 WHO Global Survey on Maternal and Perinatal health, it was emphasized that nonmedically indicated caesarean sections are associated with an increased risk of adverse short-term maternal outcomes, sometimes permanent complications, disability and even maternal and perinatal mortality particularly in settings where improper facilities.[5]

Reasons For Increasing Caesarean Section Rate

Several factors contribute to the rising CS rates, which can be categorized into doctor factors, maternal factors, and fetal factors. (figure 2) Societal intolerance to poor outcomes, a culture of blame, and differing views on labor management all play a role. CS is often perceived as a procedure that safeguards both mother and baby, without adequate consideration of its inherent complications.

"D" (Doctor) factors	• D 1: 'defensive medicine'i.e. doctors take care aggressively and take immediate action in order to avoid litigations. • D2: Decreased practice of vaginal breech deliveries so as to avoid complications like brachial plexus injury and clavicle fractures. • D3: Decreased practice of vaginal twin deliveries to avoid higher risks to the second twin. • D4: Decreased trial of labour after cesarean (TOLAC), so as to avoid serious complications like scar dehiscence and rupture. • D5: Decreased use of instrumental deliveries to prevent perineal injuries, ocular trauma, nerve palsies and fractures. • D: 6 Increased induction of labor and thereby increased caesarean sections for failed induction.
Maternal factors	• Increased obesity in females leading to increased chances of macrosomia and thereby increased caesarean sections. • Decreased preference for VBAC. • Prefer a small family and therefore don't mind in having elective caesarean sections. • Increased incidence of maternal request for caesareans so as to avoid any last minute mishap and misfortune. • Tocophobia- fear of labor
Fetal factors	• Increased incidence of IVF pregnancies leading to increased chances of multiple pregnancies and therefore complications associated with it.

Figure 2 -Factors responsible for increased caesarean rates.

With the advent of these reasons, a classification system was devised to know the indication of pregnancy and make a generalised universal protocol for the same to decrease the rising trend of section rates.

Robson classification of caesarean section

WHO proposed the Robson Classification system to provide it as a global standard for assessing, monitoring and comparing caesarean section rates within healthcare facilities, and create a common approach among different facilities. The Robson classification allows standardised comparisons of CS rates across time and the prospective identification of specific groups of women which most contribute to the overall CS rate.[6]

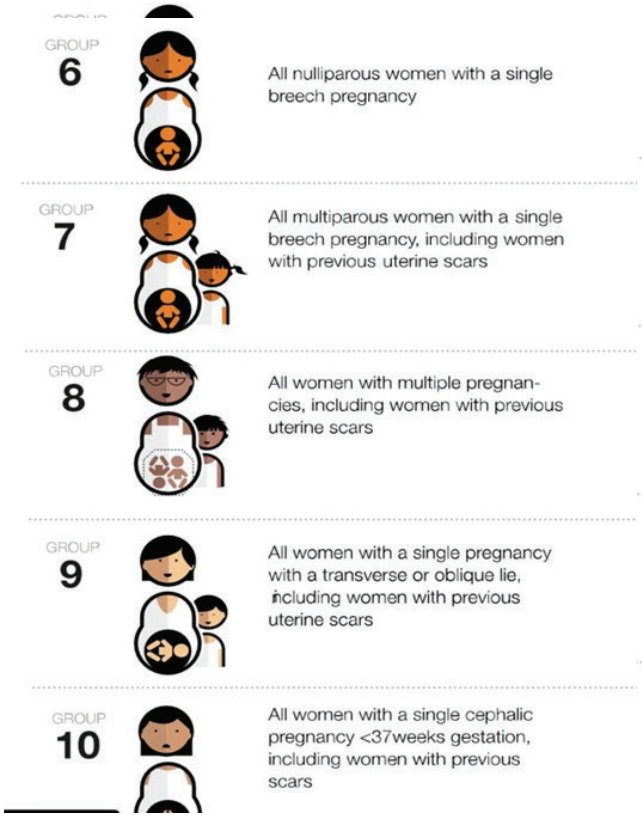

Figure 3-Robson Ten Group Classification System.

Step 1: All the deliveries in the hospitals are categorized according to Robson classification Step 2:After categorising it, the Robsons classification report table is made at the end of month (figure 4)

Step 3: Data is then analysed and compared with other facilities and among themselves within a group. (figure 5)

Setting name: *Hospital ABC*				period: *January 2016 to December 2016*		
Column 1	**Column 2**	**Column 3**	**Column 4**	**Column 5**	**Column 6**	**Column 7**
Group	Number of CS in group	Number of women in group	Group Size[1] (%)	Group CS rate[2] (%)	Absolute group contribution to overall CS rate[3] (%)	Relative contribution of group to overall CS rate[4] (%)
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
Total*	**Total number CS**	**Total number women delivered**	**100%**	**Overall CS rate**	**Overall CS rate**	**100%**

Unclassifiable: Number of cases and % [Number unclassifiable cases / (Total Number women delivered classified + unclassified) X 100]

* These totals and percentages come from the data in the table.
1. Group size (%) = n of women in the group / total N women delivered in the hospital x 100
2. Group CS rate (%) = n of CS in the group / total N of women in the group x 100
3. Absolute contribution (%) = n of CS in the group / total N of women delivered in the hospital x 100
4. Relative contribution (%) = n of CS in the group / total N of CS in the hospital x 100

Figure 4- Robsons Classification Report Table

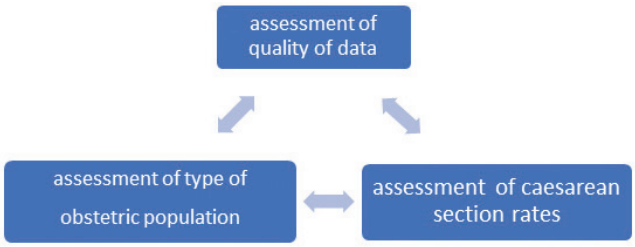

Figure 5- Steps for interpretation of Robson classification.

Advantages of Robsons classification

- Identifies and analyzes groups contributing most and least to overall CS rates, focusing on modifiable variables.
- Enables comparisons among groups with better outcomes, suggesting potential changes in practice.
- Assesses the effectiveness of strategies or interventions aimed at optimizing CS use.
- Evaluates the quality of care and clinical management practices by analyzing outcomes by group.
- Enhances data quality awareness and interpretation, promoting its effective use.[8,9]

Strategies to Reduce Caesarean Section Rates Using the Robson Classification

- Enabling Continuous support during labour and encouraging women to mobilise and take pains.
- Labor care guide should be used to monitor progress of labour of women in spontaneous labour with an uncomplicated singleton pregnancy at term and the progress should be charted accordingly.
- It has been observed that unindicated electronic fetal monitoring is associated with an increased likelihood of CS. When CS is contemplated because of an abnormal fetal heart rate pattern, in cases of suspected fetal acidosis, conservative measures should be tried first and decision should be made after evaluation of clinical scenario as a whole.
- Consultant obstetricians should be informed about the CS and the decision should be taken after their advice. Their experience prevents unnecessary CS and teaches juniors to interpret and make the decision.
- Women should be encouraged for external cephalic verssion in breech presentation and staff should be trained in conducting breech vaginal deliveries. (class 6 and 7)
- Women with an uncomplicated pregnancy should be offered induction of labour beyond 41 weeks as this reduces the risk of perinatal mortality and the likelihood of CS.
- Re-evaluating the indication of induction of labour so as to reduce the number of Emergency C-section for failed induction (class 2 and 4)
- Raising the awareness about the risks of C-sections, especially risks of repeated C-sections among health care providers and patients. mother can suffer from infection, heavy blood loss, longer recovery time, and injury to nearby organs, eg bladder and bowel. Although unlikely, maternal death and anaesthetic

complications may also occur

- Support junior doctors with workshops and practical training to build confidence in instrumental and complex deliveries.
- Ensure junior doctors have access to senior consultants for unbiased decision-making regarding CS.
- Standardize CS rate data collection to facilitate comparisons and identify areas for improvement, such as breaking down primary CS rates in "nulliparous, term, singleton, vertex" cases.

Evidence Supporting the Robson Classification in Reducing Caesarean Section Rates

A systematic review of four electronic databases (MEDLINE, Embase, CINAHL, and LILACS) identified six studies using the Robson Classification System as a tool to provide audit and feedback to healthcare providers in clinical audit cycles, leading to reduced Caesarean section (CS) rates. Five of these studies were conducted in countries with some of the highest CS rates globally (Brazil, Chile, and Italy). [10] All studies reported either a reduction or maintenance of CS rates without significant increases in neonatal morbidity or other adverse outcomes. Two notable studies are highlighted below:

- Brazil: Aguiar et al. implemented an audit and feedback intervention where monthly reports of the Robson classification tables were displayed and discussed with clinical staff. Over the 10-month intervention period, CS rates decreased from 34.6% to 13.5%. There were no changes in Apgar scores or perinatal mortality during this period.[10]
- Sweden: Blomberg et al. used the Robson classification to identify the target group—term, nulliparous women in spontaneous labour—and provided feedback to staff on a monthly basis for all term nulliparous women. They reported a decrease in the CS rate from 10.1% in 2006 to 3.1% in 2015, with no changes in neonatal outcomes and consistently high patient satisfaction.[10]

In all studies, the Robson classification system provided a stable framework for categorizing and analyzing data within the clinical audit cycle, either alone or in conjunction with other approaches.

Setbacks of the Robson Classification System

- Missing Data/Variables: If information on one or more variables is missing in the patient record, the patient cannot be accurately classified into any group.
- Misclassification: Due to common subdivisions in some groups, there is a higher chance of misclassification, potentially leading to incorrect interpretations.
- Lack of Consensus: There is sometimes a lack of consensus on the definitions of some core variables, which can complicate data interpretation.[11]

Conclusion

Caesarean sections should be performed when a clear benefit is anticipated, one that outweighs the higher costs and additional risks associated with the procedure. Healthcare professionals and patients should consider these additional risks when deciding on the mode of delivery. The main challenge related to Caesarean sections is optimizing their use. While CS is a crucial tool for reducing maternal mortality, overuse may be associated with increased risks of severe maternal outcomes.

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Caesarean Section in Previous Caesarean Section and in Second Stage of Labour: Optimising Fetomaternal Outcome

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Introduction

Ceasarean section is one of the commonest surgical procedures practiced worldwide[1]. Caesarean section can be difficult technically in some conditions and can be dangerous for both fetus and the mother. Various reasons for a CS to be "difficult" include difficult accessibility to lower segment of uterus, difficult fetal extraction, an abnormal placentation and various lacerations and visceral injuries in abdomen. In this article we will discuss the difficulties and solutions while doing cesarean section in previous CS and in second stage of labor.

Caesarean section in previous caesarean section

Previous caesarean section is one of the most common causes of repeat CS because of Craigin's mantra from 1916: "Once a caesarean, always a cesarean", which has now changed because trial of labour after CS (TOLAC). Now the dictum is 'once a caesarean section always a hospital delivery'. The American College of Obstetricians and Gynaecologists (ACOG) guidelines endorsed a policy that TOLAC can be done in women with history of one lower segment caesarean section[3]. However the general consensus now is that a repeat elective caesarean section needs to be done in women with more than one lower segment CS, with a history of uterine rupture, with a previous upper uterine segment vertical incision, and with placenta previa in current pregnancy.

What are the difficulties encountered while doing caesarean section in previous caesarean section?

1. **Difficult access to the lower uterine segment due to adhesions[4]:**

   Caesarean section in previous pregnancy manifests as the commonest cause of a difficult accessibility to the lower segment of uterus, in addition to leiomyoma and maternal obesity. After caesarean section or any kind of abdominal surgeries, adhesions are seen commonly. The degree and predictability of adhesions formed vary among people after any abdominal surgery. Postoperatively, adhesions usually alter the internal structures, such as, dislocation of the urinary bladder to the mid-position of the uterus or creation of dense adhesions between the uterine wall and the bladder.

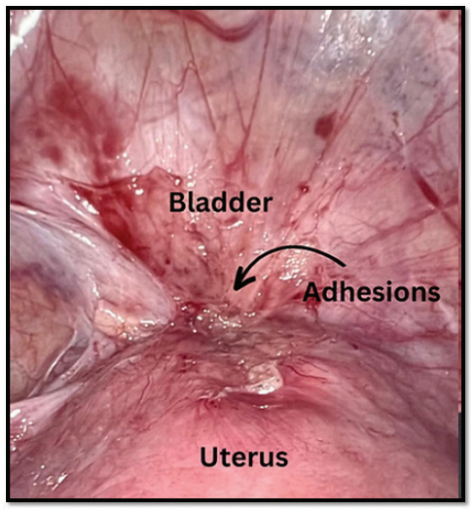

Fig 1: Caesarean section scar repair. Reproduced from Ashley S. Womack, MD

General considerations while doing caesarean section:

- On a repeat CS, peritoneum and

the abdominal wall fascia needs to be carefully incised in order to avoid grave injuries to bowel and urinary bladder, that could be adherent to these structures[5].

- The usual abdominal structures may be altered due to adhesions postoperatively.
- Proposed methods to prevent adhesion formation after CSs include:
  - Peritoneal closure: It is suggested by the evidence that adhesion formation may reduce after peritoneal closure, however recent randomized controlled trials did not find any advantage of this step in caesarean section.
  - Use of adhesion barriers: The adhesion barrier usage, routinely during a caesarean section is not supported by the current literature.
- Low transverse skin incision is the commonest incision used, but it limits the space available due to fibrous tissue formation due to previous CS and inadequate excision of the scar.
- Careful dissection of utero-vesical fold of peritoneum is important for appropriate incision on the uterus in relation to part presenting and for the protection of the bladder.
- Horizontal curvilinear incision or J shaped incision (inadequately formed lower uterine segment) is important to increase the space available.
- A low vertical incision or an inverted T shaped incision may be given in cases of impacted transverse lie.
- Document the case findings and counsel the patient for an elective repeat caesarean section in future.

2. Injury to bowel, bladder and ureters:

Bladder injuries

Dislocation of the bladder to the midposition of the uterus makes bladder prone to injury due to dense adhesions between the uterine wall and the bladder. Atypical location of the bladder if not recognized during surgery, inevitably damages the bladder. The prevalence of bladder injury is 0.13 percent during a primary CS and increases to 1.94 percent at the fifth CS[5]. On opening of the peritoneum urinary bladder gets mostly commonly damaged and in a large study, bladder injuries were 41.4 % during the first CS while they were 58.6% during a repeat CS[6]. A repeat CS increases the chances of injuries to the trigone and body of the bladder.

Precautions to be be taken include:

It is safe to open the peritoneum with "sharp" method (Pfannenstiel method).

The bladder flap can be created at least 1–2 cm above the edge of the bladder, by which the risk of injury to the bladder can be minimized.

Prompt identification and repair of bladder injury reduces the need for further complicated surgeries and prevents the development of serious complications.

Suspicion of bladder lesion should prompt the surgeon to perform minor tests, such as the bladder should be instilled with methylene blue or indigo carmine, through a urethral catheter. It enables the surgeon to identify the injury and its location if there is extravasation of urine. Extent of damage needs to be assessed and if it involves the bladder trigone or ureters, which can be beyond the obstetrician's competence, then there is need for urological reference.

In case of bladder damage smaller than 2 cm in size, a single layer of sutures (vicryl 3–0 absorbable suture) should be used on the wound. If the lesion is greater than 2 cm, the wound should be repaired in two layers (mucosa layer; submucosa and muscular layer). Delayed absorption (PDS 3–0 absorbable suture) continuous sutures are to be given. Bladder integrity may be confirmed by instilling indigo carmine or methylene blue dye in the bladder.

The urinary bladder trigone injury and urethral and/or ureteral injury can coexist; the urologist help may be required in these injuries. Continuous drainage of the bladder with Foley's catheter for 7–10 days postoperatively is recommended. The antibiotic prophylaxis during in-situ Foley's catheter is controversial.

Ureter injuries[4]

Ureteric injuries can occur in previous CS due to dislocated position of the ureters secondary to adhesions. Development of hematoma can occur around the injured ureter which may become infected or may cause fistula between the uterine cavity and the ureter. It was suggested by Rajasekar and Hall that exteriorising the uterus from the abdominal cavity during the CS can avoid blind haemostatic stitches to ureters and their injury.[7] The ureteral injuries are difficult to diagnose, most commonly they are identified in the post-operative period because

of nonspecific symptoms, like fever, nausea, abdominal pain, haematuria, and watery discharge through vagina. It is essential to recognize and repair the lesions early for optimal outcome , so as to avoid later complications like renal damage and genitourinary fistula. Guidelines for iatrogenic ureteral injury include:

- For needle or minor crush injuries conservative management is recommended.
- The ureteral ends should be closed by Primary closure over a stent (if injury is recognised during procedure).
- A non-suction drain should be placed adjacent to the injury externally.

It is recommended to stent the ureter for 2 to 6 weeks in case of ureteral injuries[8]. If injury diagnosed in post-operative period, first the stent insertion should be attempted. If unsuccessful, then the next step is to perform a percutaneous nephrostomy or an ureteroneocystostomy.

Bowel obstruction and injury:

Small bowel obstruction is determined by abdominal adhesions. The rate of bowel obstruction after 1 caesarean delivery is 0.5 per 1000 while it is 9 per 1000 after 3 caesarean sections.[5]

About 0.08% of bowel injuries occur during a caesarean section and the most frequently affected organ is colon.[9]

Intestinal accidents are mainly caused by adhesions after abdominal surgeries. Most of bowel injuries occur when the peritoneal cavity is opened and some occur while doing adhesiolysis.

About one-third of bowel injuries are diagnosed intra-operatively and being diagnosed during the procedure is of utmost importance. Because delay in diagnosis is likely to increase the risk of peritonitis, with morbidity associated and the need for colostomy. Intestinal closure by repair is recommended for small injuries to the large and small bowel, but extensive injuries need help of gastro-surgeons and may need colostomies.

Increased chances of placenta acreta[4]:

Repeat caesarean section increase the chances of Placenta-acreta-syndrome (PAS), a meta-analysis of the association of history of caesarean delivery with placenta praevia found a dose-response pattern for the relative risk (RR) of placenta praevia of 4.5 for one, 7.4 for two, 6.5 for three, and 44.9 for four or more prior caesarean deliveries.[10]

When diagnosis of placenta acreta syndrome is suspected, first it needs to be confirmed by imaging modalities then plan of action is discussed with the patient and the multidisciplinary team. A preterm caesarean hysterectomy should be planned and performed, and the placenta can be left in-situ in certain situations in order to avoid a massive haemorrhage. The line of management for PAS is beyond the scope of this article.

Caesarean section in second stage of labour

Decline in operative vaginal deliveries has resulted in the overall increase in the rates of caesarean deliveries and more so, increase in CS at the second stage of labour. A second-stage caesarean section is technically difficult because of engaged fetal head, which can lead to increased fetal morbidity such as, fetal injuries and fetal hypoxia and increased maternal risks like increased intraoperative haemorrhage and various surgical injuries.

Techniques for second stage of labour

To ensure safety while delivering the head of the fetus at the time of CS, different techniques have been described. These techniques depend on the position and location of the head of the fetus at the time of delivery. If the progress of the labour has been slow and the head of fetus is deeply impacted in the maternal pelvis, dis-engaging the impacted head can result in extension of incision into the broad ligament or the cervical part of uterus or vagina and may result in damage to uterine blood vessels and bladder respectively.[11]

Foetal head extraction and delivery can be achieved in this situation by using either a vagino-abdominal approach by pushing of head from the vagina or reverse breech extraction, in this technique feet or the buttocks of the baby are held and then delivering through the uterine incision, and the head of the baby is the last to be delivered.

Other techniques that have been described include the use of a fetal head pillow for dis-impaction of the fetal head or the Patwardhan technique, where the shoulders of the baby are first delivered, followed by the abdomen, buttocks, limbs and then the head is the last to be delivered.

When it is difficult to deliver the fetus through horizontal cut in the lower segment of uterus, the incision in the uterus may be given either as an inverted T shape or J shaped incision, or the incision can be given in the upper segment of the uterus. These incisions can have more complications, specifically during further pregnancies and

deliveries like PAS.[12]

Caesarean section at fully dilated cervix continues to be difficult technically and, a challenge to operating surgeon. Second-stage caesarean section has an increased risk compared to caesarean section in the early stage of labour[13]. The consent advice, the complexity of the procedure and the trauma associated with the primary emergency caesarean section (pEMCS) when the head of the fetus head is low should be discussed with the patients. The complications associated with pEMCS are massive post-partum haemorrhage (PPH) which usually requires blood transfusion, risk of visceral injuries increases as the number of previous caesarean sections increase as well uterine tears and sepsis[14,15]. Disengagement of the deeply impacted fetal head during pEMCS can be difficult and traumatic. This is sometimes associated with increased risk of cervical spine injury or skull fractures in the fetus[16]. Intraoperatively chances of complications are 4.6 times more in the second stage as compared to that at the first stage of labour. Blood loss (more than 1 liter) and need for blood transfusion is 3.1 times and 2.9 times more respectively. Surgeons should anticipate that the head of the fetus cannot easily be dislodged during second stage and should follow a step-wise plan as explained in Box 1[17]. The plan discussed can be incorporated into the WHO checklist so whenever pEMCS is to be undertaken, all the members of the operating team are well acquainted with dangers of potential complications.

Box 1[17]: Ten steps for the delivery of the head of the fetus at second stage of labour by caesarean section

What to do in case fetal head is deeply engaged:
1. Lowering the operating table or stand on a step.
2. Ensure the reverse trendelenberg's position with the woman's head down.
3. Absence of contraction while taking out fetus.
4. Occipito-transverse position should be attempted for the delivery.
5. Senior help should be sought.
6. Opposite hand should be used for delivery.
7. Subcutaneous terbutaline 250 micrograms or a general anaesthetic should be administered.
8. Fetal shoulder pressure should be applied.
9. Fetal head should be pushed upwards vaginally.
10. Make a T shaped incision or a J-shaped incision and deliver the fetus as breech.

- Operator should remain calm and there should be clear communication between the obstetrician, neonatologist and anaesthetic team, whenever dealing with such cases or if the surgeon faces difficulties during the procedure
- Senior help should be called sooner. Posters showing steps to deal such situations should be placed in the theatres.
- Surgeon should wait for the cessation of contraction, if it prevents the hand to reach below the fetal head, so as to avoid struggling against the uterine activity.
- Once the uterine relaxation takes place, advance the hand caudal to the head so as to flex and lift it into the uterine incision, avoid lateral movements while delivering the head because that can extend the incision at uterine angles. The opposite hand can be used if the dominant hand fatigues.
- Prepare with measures as discussed in the box 1 above which should be in-corporated. In contracted uterus, tocolysis with subcutaneous terbutaline 250 micrograms can be used, with the anticipation and preparation for postpartum haemorrhage.
- Deliver the fetus as breech if the head of the fetus cannot b delivered by undertaking above measures. The length of the incision on uterus should be assessed for adequacy before delivery and consider the J or inverted T shaped incision to ease the access. Various studies suggest that the 'pull' method results in lesser maternal injury than the 'push' method, while extracting the deeply impacted head of the fetus during CS[18].
- The surgeon should pass the hand along the fetal back to reach to the breech, thereby, the breech is flexed and brought into the incision and the fetus is delivered in breech as depicted in the figure below.

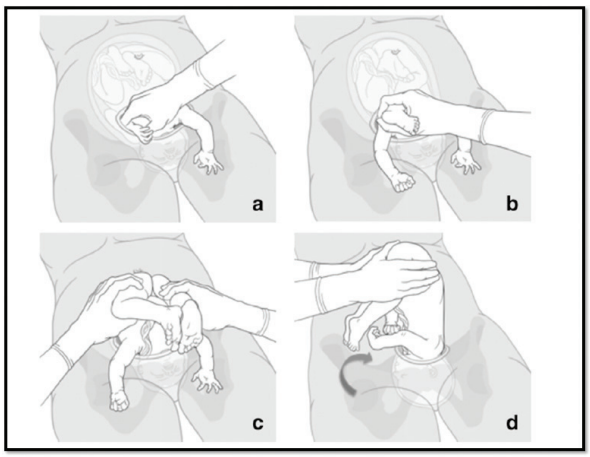

Fig 2(a): Occipito posterior position (Reverse breech technique). A) Take out both upper limbs of of fetus; B) Hold the foot of fetus and extract the leg; c) Take out the body of the fetus by pull on both the legs; D) deliver the head of the fetus by screwing on the body and the shoulders simultaneously. Reproduced from[19].

- An alternative approach known as Patwardhan has been used in such cases, where the assistant pushes head of the fetus up to the pelvis vaginally, so as to deliver fetus through uterine incision. Fingertip pressure must be avoided to prevent skull fractures. In this technique shoulders which are coming in the incision line are delivered first followed by trunk and limbs and the head is delivered in the end.

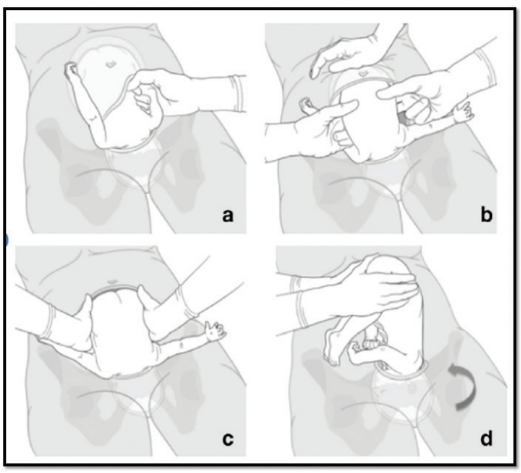

Fig 2 (b): Patwardhan technique of delivering the fetus when the head is deep inside in second stage of labour. Reproduced from.[19]

- Various devices are available in the market which are used to elevate the head of fetus through vagina, like the fetal pillow20, safety and effectiveness of these devices is yet to be proved. Further research needs to be done before making the use of these devices universal.
- These second stage caesarean sections also require more operative skills and advanced surgical training. Implementation of training drills should be incorporated for all the concerned staff to understand the challanges which could be faced while doing such procedures. Simulations can be used for training purposes to deliver the impacted head of the fetus at second-stage caesarean section,; for example, the Debra 21 simulator has been developed recently.
- Fetal pillow as shown below, has been seen new in the market that can be used intravaginally to disimpact the fetal head in case of deeply impacted head.

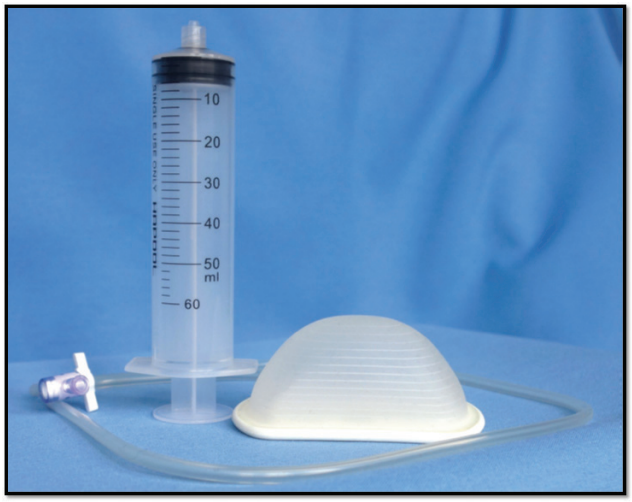

Fig 3: Fetal Pillow. Reproduced from[22]

Conclusion

Decision regarding the delivery of primigravida should be best made by the mother and obstetrician. Mothers need to be counselled about the pros and cons of vaginal delivery and the short and long term complications of CS which could be avoided in primary vaginal deliveries. VBAC has many substantiated benefits and women need to be counselled about the same.

The procedures for deeply impacted head should be performed in supportive environment, where there is availability of advanced training and expertise. Second stage CS is difficult to perform and needs proper advanced training and expertise to optimise fetal and maternal outcome.

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How are IVF pregnancies different from naturally conceived pregnancies? Part 1

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Introduction

Number of IVF conceived pregnancies as a proportion of all conceptions has been increasing the world over with one of 20 babies born in some countries of Europe being conceived through IVF. The corresponding figure for Australia and New Zealand is one in 25, the US is one in 52 and China is 1 in 60. The International Committee for Monitoring Assisted Reproduction Techniques (ICMART) estimates that 12,000,000 babies have been born through Assisted Reproductive Technologies since its onset in 1978. With a worldwide right-ward shift in average female age at first birth and the growing accessibility and affordability of IVF treatments, these numbers are only likely to grow exponentially. Therefore, the concern for its safety for the mother and the child has been raised in various fora. Especially for the Obstetrics practitioner, it becomes essential to update themselves on whether these pregnancies behave any differently from those conceived naturally at the maternal, embryonic and/or the perinatal level. And if they do, what are these differences and where do they stem from? Whether they are a consequence of the ART procedure per se or a result of infertility factor or are due to intrinsic maternal factors like age, body mass index, metabolic disturbances etc.

This article is the first review in a three-part series that reviews the latest evidence to find answers to questions on pregnancy losses after IVF. The perinatal effects of ART and fetal congenital anomalies are considered in the second and third part to be published later.

Are there differences in spontaneous pregnancy loss rates in IVF conceived versus naturally conceived pregnancies?

The risk of spontaneous pregnancy loss among ART pregnancies is reported with some variation. Studies from fertility centres report a prevalence ranging from 13 to 32 %, , (Pinborg et al, 2013; Sunkara et al, 2014; Satwik et al, 2021). In comparison, the rate of early pregnancy loss amongst naturally conceived pregnancies is reported to be between 15 – 20 % following a positive urine HCG test, . These differences between studies looking at different modes of conceptions could stem from inclusion of different definitions of pregnancy losses: pre-clinical and clinical pregnancy losses, or from the a possibility that infertility or infertility treatments themselves incur a higher pregnancy loss risk.

Definitions: Spontaneous pregnancy loss is an encompassing term that includes loss of any type of pregnancy at any gestational age including pre-clinical and clinical pregnancy losses. The term miscarriage however is limited by both its leftward and rightward gestational limits and its site of implantation. Miscarriages are pregnancy losses of up to 22 weeks after establishment of evidence of intrauterine pregnancy in the form of a gestational sac seen on ultrasound. (ICMART 2017). In this article, I use the term spontaneous pregnancy losses to define loss of any pregnancy up till 22 weeks of gestation. Thus, there are four kinds of pregnancy losses considered: Preclinical or biochemical pregnancy losses, first

trimester clinical pregnancy losses, second trimester pregnancy losses and ectopic pregnancies. Each one of them is individually considered below.

Biochemical pregnancy losses represent conceptions defined by pregnancies with two increasing values of serum bhCG more than 5-10 mIU/ml that fail to progress to gestational sac visibility on ultrasound. In healthy women attempting natural conceptions, using high sensitivity immunoradiometric assays for hCG detection in consecutive urine samples, collected at the expected implantation time; the rate of biochemical pregnancy loss has been estimated to be between 22% and 25%, . This is a relatively high rate of loss suggesting that up to 1 in 4 or 5 pregnancies are lost pre-clinically even before the woman can recognize that she is pregnant. If these high sensitivity tests are not used at the time stated above which roughly corresponds to day 7-21 after ovulation, most of these losses would go unrecognized. IVF pregnancies on the other hand are monitored closely and therefore the possibility of detecting early attempts at implantation can be monitored and their losses be recorded. Using the same cut-offs, the biochemical pregnancy losses estimated in IVF cycles using top quality embryos is between 16-22%. De Neubourg et al conducted a study of a total of 370 single top quality embryo transfers in patients younger than 38 years of age. Total pregnancies were 192 (51.9%) and 30 (15.6%) ended in biochemical pregnancy loss. In frozen embryo replacement cycles, Salumets et al reviewed the outcome of 1,242 frozen embryo transfers and found that their pregnancy (positive hCG) and biochemical pregnancy loss rates were 25.2% and 18.4%. In another study looking to compare loss rates between women undergoing their first IVFs for infertility with women conceiving naturally but having a history of recurrent pregnancy losses, the biochemical loss rate was 22.5% among those who had IVF/ICSI treatment and 5% among those who conceived spontaneously. The authors explained the difference thus: "The apparently higher rate of biochemical loss in the former group could be a consequence of increased surveillance of women undergoing IVF. In most IVF units, Beta hCG is measured 14 days after oocyte retrieval with the result that biochemical pregnancy is more likely to be detected. This is in contrast to women with recurrent miscarriage who wait until a few days after a missed period to do urine pregnancy test. By this time a significant proportion of biochemical pregnancy may have escaped detection." Endometrial factors, maternal age, oocyte factors, environmental stress, and sperm DNA fragmentation have been proposed as possible aetiological mechanisms for biochemical pregnancy losses.

Clinical pregnancy losses are defined as those that fail after establishment of gestational sac visibility on ultrasound. And include both blighted ova and missed abortions. These can be of two kinds depending upon the gestational age at which pregnancies are lost: first trimester and second trimester losses.

First trimester clinical pregnancy loss rates reported after IVF conceptions in various large scale studies are 14.7% (Schieve et al., 2003; n=62,228), 16.7% (Baker et al., 2010; n= 86,479), 15 % (Hipp et al., 2016; n= 249,630) and 11.8% (Rishede et al, 2019; n= 10,011) .

A longitudinal multicentre cohort study (Brandes et al, 2011, n=1809) aimed to identify the role of the conception mode in infertile couples in first trimester pregnancy loss. 286 (15.8%) pregnancies ended in a first trimester clinical pregnancy loss. These rates for the different conception modes were as follows: spontaneous 14.5% (125/864), IVF 16.3% (31/190), intracytoplasmic sperm injection 14.9% (30/202) and frozen embryo transfer (FET) 26.2% (16/61). The authors reported a significantly higher loss rates for FET conceptions

The risk of **second trimester pregnancy losse**s decreases markedly. Some large studies on naturally conceived pregnancies have shown that second trimester clinical pregnancy loss rate is between 0.5 – 1 %, . A similar large 2019 study compared second trimester clinical pregnancy loss rates of singleton pregnancies conceived through IVF/ICSI (n=10,011) versus pregnancies conceived naturally (n=1,46,932). It used data between 2007 to 2011 from Danish ART database and Danish Fetal Medicine Database. Second trimester clinical pregnancy loss rates after IVF was 0.8%, similar to those reported for natural pregnancies (0.6%).

The risk of **ectopic pregnancies** after IVF-ICSI is between 2 to 8% as per some old reports with tubal factor infertility being an independent risk factor for ectopic pregnancy increasing the risk by 4 times over general population.. But with improvements in embryo transfer techniques, use of soft vs firm catheter, reliance on ultrasound guidance versus clinical touch, increasing incidence of frozen embryo transfer and a practice towards single blastocyst transfer; this incidence now has consistently gone down to <2% in various centres of the world,. This rate appears to be consistent with the 1-2% found in general population.

In a population-based study from Australia and

New Zealand looking at outcomes of 44,102 IVF conceived pregnancies, between Jan 2009 and December 2011, the overall rate of ectopic pregnancy was 1.4%. Compared with fresh blastocyst transfer, the likelihood of ectopic pregnancy was 30% higher for fresh cleavage stage embryo transfers (AOR 1.30, 95% CI 1.07–1.59) and was consistent across subfertility groups. Transfer of frozen blastocyst was associated with a significantly decreased risk of ectopic pregnancy (AOR 0.70, 95% CI 0.54–0.91) compared with transfer of fresh blastocyst.

Possible aetiology of spontaneous pregnancy losses after IVF

As per several cohort studies that look at the prevalence of aneuploidy in abortuses of IVF conceived pregnancies, the chromosomal abnormality rate is not any different from normally conceived pregnancies. Bingol et al 2012 detected cytogenetically abnormalities in 47.9% (34/71) of non male factor ICSI group and 50.6% (41/81) of the control group, (p=NS). Kim et al, 2010 found cytogenetic abnormality in 48.4% of miscarriages after naturally conceived pregnancies, 54.3% of miscarriages after ICSI and 55.3% after conventional IVF (p = 0.503). In another study Pendina et al 2014, analyzed a total of 499 miscarriage karyotypes. In the patients aged <35 years, the incidence of abnormal miscarriage karyotype was lower in the IVF group (37.04 % vs 62.43%). In the patients aged ≥ 35 years, the incidence of miscarriages with cytogenetic pathology did not differ between the NC and the IVF group (75.70 % vs 58.56%). Therefore it can be said that IVF does not increase the risk of aneuploid conceptions. To establish the cause of any increase in pregnancy losses one must look at other mechanisms, like causes for euploid pregnancy losses.

De Neuborg et al achieved conception rates of 50% and 52% respectively in IVF and ICSI cycles after transfer of single top quality embryo and reported first trimester loss rates: biochemical + clinical pregnancy losses of 19% and 10% respectively. After multiple regression analysis, the authors concluded that this difference in losses originated from differences in female age rather than from technique related factors. Brandes et al attempted to establish significant risk factors for spontaneous early pregnancy losses in IVF cycles. After adjusting for female age, male age, hospital, obstetric history, female smoking habit, male alcohol use, menstrual cycle type and infertility diagnosis, the spontaneous pregnancy loss rate after frozen embryo transfers was significantly increased (odds ratio 2.2, 95% CI 1.14–4.19) compared with spontaneous conception. Other fertility treatments like ovulation induction, IUI, IVF or ICSI did not show an increased odds for early pregnancy losses. Whereas Sahu et al, while looking at predictors of first trimester pregnancy losses after IVF found that BMI was significantly higher and AFC was significantly lower in women who experienced miscarriages compared to those having ongoing pregnancies. However, the discriminative ability of both BMI and AFC for the prediction of miscarriage was low as indicated by AUCs of 0.617 and 0.588 respectively on ROC curve analysis. In a systematic review and meta-analysis looking at the role of sperm DNA fragmentation in pregnancy losses after IVF-ICSI, (n=1549 cycles, 11 studies) the odds for miscarriage with high sperm DNA fragmentation were significantly high: 2.48 (95% CI 1.52, 4.04, P < 0.0001).

Conclusions

This review on spontaneous pregnancy losses after ART treatments suggests that the rates at which pregnancies are lost in IVF-ICSI conceived cycles may be marginally higher that those conceived naturally when same methods are used to establish pregnancy and similar definitions are used to describe different types of pregnancy losses. These differences, if any are seen as a higher incidence of first trimester rather than second trimester losses. With the exception of frozen embryo transfers (FET) these differences may stem from female age, cause of infertility and sperm factor rather than IVF procedures themselves. However, FET might be an independent risk factor for increase in first trimester pregnancy losses. The mechanisms for increased losses are not aneuploidy. Therefore, causes for euploid losses like epigenetic errors, need exploration.

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FORTH COMING ACTIVITIES FOR 2024

- Gurukul classes organized by Institute of Obstetrics & Gynaecology, will be held for post graduate students at Sir Ganga Ram Hospital on 5th – 7th July, 2024.
- CME on Contraception will be held at Sir Ganga Ram Hospital, New Delhi on 11th July 2024 to celebrate world population day.
- **30th Annual Conference NARCHI Delhi Chapter organized by Institute of Obstetrics & Gynaecology, Sir Ganga Ram Hospital will be held from 4th to 6th October, 2024 at The Lalit Hotel, New Delhi.

JOURNAL SCAN

The Fourth Trimester : a Time for Enhancing Transitions in Cardiovascular care

Eunjung Choi, Brigitte Kazzi, Bhavya Verma et al

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Introduction

The fourth trimester concept, defined as the first 12 weeks after delivery (and beyond), has been proposed as a critical window of time for clinicians to intervene to optimize women's cardiovascular health after pregnancy. Data from the Centers for Disease Control have shown that 18% of maternal deaths occur between 1 and 6 days postpartum, 21% between 7 and 41 days postpartum, and 13% after 42 days . The American College of Obstetricians and Gynecologists (ACOG) recommends an initial postpartum evaluation within the first 3 weeks after delivery and a complete biopsychosocial evaluation within the first 3 months to optimize inter-conception and long-term health. In this review, we aim to discuss major maternal cardiovascular risk factors such as hypertensive disorders of pregnancy (HDP), gestational diabetes mellitus (GDM), postpartum weight retention, postpartum depression, and lactation. Additionally, we will review different outpatient interventions used for improvement of transitions in cardiovascular care during the fourth trimester.

Hypertensive Disorders of Pregnancy

Hypertensive disorders of pregnancy (HDP) complicate up to 20% of all pregnancies and include pre-eclampsia, eclampsia, chronic hypertension and pre-eclampsia super-imposed on chronic hypertension. HDP, especially pre-eclampsia, has been associated with cardiovascular complications such as myocardial infarction including spontaneous coronary artery dissection, coronary vascular accidents (CVA) and peripartum cardiomyopathy. For women with HDP, it is important to have continued heightened surveillance in post partum period for these "red-flags" that hallmark pre-eclampsia with severe features such as pulmonary edema, new onset headache, visual disturbances, kidney or liver dysfunction, and/or thrombocytopenia. One third of Eclampsia occurs postpartum with half within the first 48 h of delivery. There are more antihypertensive options available during the postpartum period as there is no concern for adverse fetal outcomes. Some of the antihypertensive medications that are preferred in breastfeeding women include calcium channel blockers (nifedipine, amlodipine, diltiazem, verapamil), beta blockers (labetalol, metoprolol, propranolol), angiotensin-converting enzyme (ACE) inhibitors (captopril, enalapril, benazepril), diuretics (hydrochlorothiazide, spironolactone), and methyldopa. It is important to follow women longitudinally if there is new initiation of antihypertensive medications during pregnancy as the majority of these women have resolution of hypertension by 3 months.

Gestational Diabetes Mellitus

Gestational diabetes mellitus (GDM) is diagnosed based on detection of new hyperglycemia at 24 to 28 weeks of gestation. GDM not only increases the risk of maternal complications but also affects the health of the offspring by increasing the risk of larger birth size, obesity, and diabetes mellitus. The estimated risk of developing type 2 diabetes

after GDM is approximately 20% at 10 years and further increases with time. American Diabetes Association (ADA) recommends regular glucose monitoring starting a few days after delivery, at 2–6 months postpartum and every 1–3 years thereafter. Women with GDM should be advised to maintain regular physical activity and healthy dietary habits with a focus on avoiding excessive weight gain. Importantly, exclusivity and longer duration of breastfeeding has also been shown to reduce the risk of GDM progression to type 2 diabetes.

Excessive Gestational Weight Gain and Post Partum Weight Retention

Excessive weight gain during pregnancy is a modifiable risk factor for future obesity. Factors associated with postpartum weight retention include higher body weight gain during pregnancy, Black race, and lower socioeconomic status. The relationship between gestational weight gain and postpartum weight retention has been described as a vicious cycle as retained excess weight gain from first pregnancy can affect the next pregnancy. Similar to other cardiovascular risk factors, postpartum weight retention increases future metabolic risk including development of type 2 diabetes mellitus, and thus postpartum weight management should be a target for preventive efforts.

Postpartum Depression

It has been found that nearly 1 in 3 women with a history of peripartum cardiomyopathy report symptoms of clinical depression and have poor attendance at medical follow-up visits. Therefore, recognition of postpartum depression is particularly important in women with preexisting medical conditions and cardiovascular risk factors to improve clinical outcomes.

Lactation

Pregnancy is associated with significant cardiometabolic changes including weight gain, elevated circulating lipids, insulin resistance, vasomotor sympathetic activity, and renin–angiotensin–aldosterone activation in order to support fetal growth. In the long-term, they may confer an increased risk of CVD. Breastfeeding is posited to lead to more rapid reversal of the cardiometabolic changes of pregnancy, and possibly to a reduced risk of both cardiovascular risk factors and CVD later in life. In a recent systematic review and meta-analysis, it was found that women who breastfed had a relative risk reduction of 11% (95% **CI**, 5–17%) for incident CVD, 17% for fatal CVD events (8–24%), 14% for coronary heart disease (5–22%), and 12% (1–21%) for stroke.

Post Partum Cardiovascular Complications

The postpartum period is a time for critical monitoring of maternal cardiovascular morbidity and mortality for women, especially those with heart failure, pulmonary hypertension, or valvular heart disease. In women with established CVD, readmissions within the first 7 weeks postpartum are common. Women at high risk should thus be monitored inpatient for 72 h or greater and be followed up in clinic within 3 to 6 days post-discharge. To ensure maternal safety, patients should also receive appropriate guidance on self-monitoring and identification of high-risk features that should prompt seeking medical care. These symptoms include chest pain, dyspnea, orthopnea, cough, edema, tachycardia, non-vagal syncope, headache, visual changes, hypotension, hypertension, exertional dyspnea, orthopnea, paroxysmal nocturnal dyspnea, edema, and chest tightness. Sudden onset dyspnea should prompt evaluation for pulmonary embolism as the incidence of venous thromboembolism is approximately five times higher during the postpartum period as compared to during pregnancy and the highest during the first 3 weeks after delivery.

Models for Improvement

Multi-Disciplinary Team Approach

The responsibility of identifying, counseling, and managing long-term risks should be shared by a multidisciplinary Cardio-Obstetrics team. It is important to plan a seamless hand-off from obstetric care to primary care, and potentially also to outpatient cardiology care.

Home Based Post-Partum Care

Approximately 40% of women do not attend postpartum visits due to stress, fatigue, caring for a newborn, lack of social support, lack of transport, or a language barrier. Telemedicine is an alternative solution for individuals unable to attend in-person visits. Telehealth visits have been shown to be effective in various aspects of peripartum care such as blood pressure management, tobacco cessation counseling, postpartum depression and postpartum weight management.

Lifestyle Interventions

Involvement of behavioral health coaches for postpartum weight reduction has been found to be feasible and well accepted. Internet-based weight loss program may be feasible and effective in postpartum women. Remote monitoring

intervention using wearable activity trackers has been shown to be effective in increasing daily physical activity during the postpartum period.

Contraception

It is important for women with cardiovascular risk factors to have an opportunity to optimize their health before another pregnancy. The AHA recommends all women with a history of HDP and other adverse pregnancy outcomes (APOs) to have contraception counseling. Careful planning of future pregnancy is particularly imperative for women with pre-existing cardiac conditions that require teratogenic pharmacotherapy such as warfarin or ACE inhibitors. Shared decision-making regarding the method and duration of contraception should take place between the patient and her cardio-obstetrics team during the fourth trimester and regularly thereafter.

After the Fourth Trimester : Long Term Cardiovascular Risk for Women

For many women, their increased cardiovascular risk does not end after delivery. Maternal and fetal complications such as HDP, GDM, pre-term birth, and SGA newborns have been associated with future CVD risk development . These conditions, known as adverse pregnancy outcomes (APOs), are important in identifying a population that should be targeted for preventive efforts. Counseling women on lifestyle changes including diets rich in vegetables/fruits, 150 min/week of moderate intensity aerobic activity during pregnancy and postpartum, and smoking cessation during could mitigate the risks of women who have experienced APOs.

Conclusion

Women face major physiologic and emotional changes during the postpartum period. Development of a comprehensive postpartum care plan with careful consideration of each patient's risk profile and access to resources is critical in improving maternal morbidity and mortality as well as improving the long-term cardiovascular health for women. Supporting postpartum wellbeing of women during this transition period requires a multidisciplinary approach and planning should start before delivery.

Awarded Second Prize in E-Poster Presentation in Narchicon-2023

Bilateral Ovarian Teratomas Mimicking Malignant Ovarian Mass: An Unusual Presentation

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Introduction

Dermoid cyst commonly known as mature cystic teratoma is a well differentiated germ cell tumours comprising of all the three germ cell layers.[1] Majority of them are unilateral but may have bilateral presentation in 10-15% of the cases.[2] It can undergo malignant transformation in 0.1-0.2% of cases.[3] Unlike other germ cell neoplasms, dermoid cysts can occur at any age.[4] Still, these tumours are more prevalent in reproductive age group accounting for 70% of all benign ovarian neoplasms.[5] Dermoid cysts are slow growing tumours and are often asymptomatic.[6] However, asymptomatic patients can possibly become symptomatic when the tumour reaches a considerable size or is bilateral and the most common symptom is lower abdominal pain and abdominal fullness.[7] Clinical assessment is difficult hence ultrasound (USG) helps in establishing the diagnosis. USG along with Magnetic Resonance Imaging (MRI) gives additional information regarding the tumour size, location, number and nature of lesion in relation to the surrounding structures. We present this case because of its unusual presentation as malignant ovarian mass. Identifying ovarian cyst is very crucial in women of reproductive age group due to the fear from sterility and developing malignancy. These bilateral ovarian tumours presenting in young females may pose diagnostic dilemma and management issues concerning fertility.

Case Report:

24 years old nulliparous female presented in Gynaecology OPD with complaint of pain in lower abdomen and history of weight loss and decreased appetite since 3-4 months. She also had complaint of constipation and burning micturition with dysuria. Clinical examination revealed a large abdomino-pelvic mass of approximately 20 weeks size which was felt separate from uterus with firm consistency, non-mobile and non-tender. On investigating further, her laboratory parameters revealed raised values of tumour markers i.e. CA-125 was 298 U/ml and CA 19-9 was 3038 U/ml while germ cell markers (Beta HCG, AFP and HE4) were normal. A clinical diagnosis of adnexal mass was made. MRI Abdomenwas done which was suggestive of bilateral large complex adnexal masses with mild ascites, peritoneal and omental thickening and caking and involvement of mesentery along with focal involvement of caecum and ascending colon on the right side and sigmoid colon and descending colon on left side which appeared to be stuck to abdominal component with poor fat planes raising the suspicion of malignancy. After taking informed consent, she underwent staging laparotomy. Intra-operative findings were: upper abdomen normal and there was mild ascites. Uterus was normal appearing. Bilateral large cystic masses with solid component and regular margin in right and left adnexa of approx. 20x18 cm and 8x7 cm respectively were excised. Right salpingo-opherectomy with left ovarian mass excision with preservation of grossly normal appearing ovarian stroma was done. Main ovarian vasculature

on left side was spared. Both the masses were sent for frozen section which reported mature teratomas. Omental and peritoneal biopsy was also taken. All the specimen were sent for final histopathological examination. Cytology of ascitic fluid was negative for tumour cells. Omental and peritoneal biopsy reported negative for malignancy. Final histopathology confirmed both the masses to be bilateral mature teratoma. Patient is under close surveillance and is being followed up every 6 monthly with pelvic sonography and CA 125 since last 2 years. Last follow up was done on 21/6/24. Her CA-125 and CA 19-9 reported 9.7U/ml and 23U/ml respectively and ultrasound reported normal study. She has regular menstrual cycles with normal amount of blood flow, however her ovarian reserve was low (AMH- 0.9U/ml).

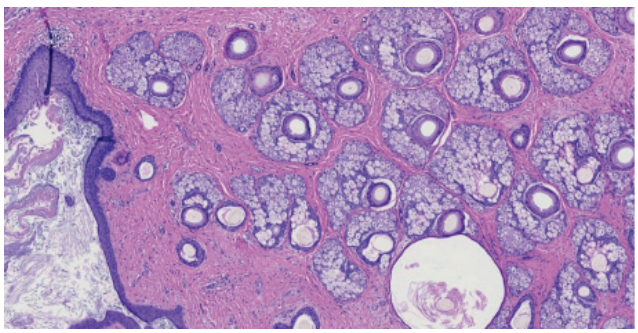

Figure 1: HPE slide showing skin, keratin nodules, hair follicle and adipose tissue.

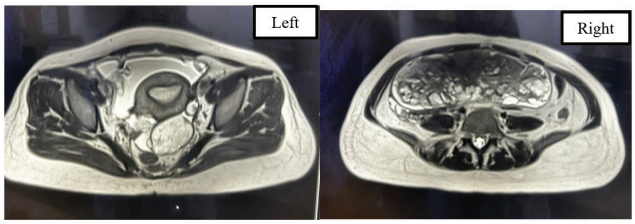

Figure 2 And 3 showing MRI image of left and right ovarian involvement with ovarian dermoid .

Discussion

The actual meaning of the word teratoma or dermoid is 'monster' and was derived from the Greek word 'teratomas' and was first mentioned by Virchow in 1863.[8] The most common teratomas is sacro-coccygeal(57%) followed by mediastinal(3%). In gonads, the most common location is ovarian followed by testis.[9] Ovarian teratoma is a common tumour which account for 20% of adult tumours and 50% of paediatric tumours.[10] They are well differentiated tumours and arise from germ cells which comprise of endoderm, mesoderm and ectoderm. It is common to see macroscopic teeth, hair, skin elements, sebaceous and foul smelling material within the cyst. It is most commonly seen in women less than 30 years of age.[11] Teratoma is mostly unilateral except in 10-15 % of cases where they have a bilateral presentation.[2] These bilateral ovarian tumours presenting in young females not only may pose diagnostic dilemmas but also management issues concerning fertility.

They are mostly asymptomatic and are incidentally detected on ultrasound. The symptoms vary according to the size of the cyst. When symptomatic, they present with lower abdominal pain.[4] Other symptoms include dysmenorrhoea, abdominal pressure, bloating, a palpable abdominal mass, pressure symptoms like bladder disturbances and gastrointestinal complaints.[12] Ultrasound is the preferred modality of imaging. Typically ovarian dermoid on ultrasound appears as unilocular cystic adnexal mass with partially or diffusely echogenic mass with posterior acoustic shadowing. It may also show 'tip of iceberg' sign which comprise of partial or diffuse echogenic mass and usually demonstrates sound attenuation or shadowing due to the presence of sebaceous material and hair within the cyst.[13] Hyper echoic Rokitansky nodules and presence of fluid- fluid levels which represent sebaceous material floating on fluid may be seen. CT scan can be a good option to detect ovarian dermoid in young girls especially where dermoid cyst is comprised of fluid-fluid or fat-fluid levels. Fat along with bones and teeth are well seen on CT as compared to ultrasound.[6] CT is suggested when patients have symptoms that suggest malignancy where they can be used to optimally stage the malignancy.[14] MRI can detect ovarian dermoid with a sensitivity of 100% and specificity of 99%[6]. Therefore it is particularly useful during pre-operative work up a patient prior to surgery.[7] It gives additional information regarding the tumour size, location, number and nature of lesion in relation to the surrounding structures. Laboratory tests include tumour markers like CA-125 and CA-19-9. Studies have shown elevated levels of CA 19-9 in 100% cases of bilateral dermoid and 85% cases of unilateral dermoid.[15] CA 125 can be done in ovarian dermoid cases to rule our malignancy. This tumour marker is generally used in post menopausal women, since malignant ovarian tumours are more common in older women. The most common complication is ovarian torsion(16%) where patient presents with acute abdomen. Other complications include infection(1%), autoimmune haemolytic anaemia(<1%).[10] It can also undergo malignant transformation in 0.1-0.2% of cases.[3] Rupture of cyst is another complication, which usually occurs when the cyst is more than 10 cm, which may lead to shock or haemorrhage with acute chemical peritonitis.[16] Expectant management can be done

in asymptomatic patients with small dermoid cyst with follow up ultrasounds to monitor the growth, appearance and complications of ovarian dermoid cysts as they grow slowly at a rate of 1.8 mm/year.[17] Mostly cystectomy or oophorectomy is the mode of patient management. Treatment depends on age, fertility, requirement of ovarian reservation, or whether one or both ovaries are involved. Laparotomy is usually performed when the tumour size is more than 10 cm and there is a suspicion of malignancy. Laparoscopy can also be performed when the tumour size is small. Advantages include less chances of infection, less post-operative adhesions, reduced post-operative pain, decreased hospital stay and improved cosmetic results.[7] However spillage of contents is more in laparoscopy especially when cyst is more than 8 cm in size. Tumour recurrence may occur after 1-15 years after surgical removal. Major predictive factors for tumour recurrence are young age, bilateral presentation, and tumour size more than 8 cm. Tumour recurrence increases to 21.6 % post-surgery in patients if all these three factors are present.[18] Therefore, patient needs to be under close surveillance even after surgery.

In our case, the challenging aspect was that the patient was a 24 year old unmarried women with bilateral ovarian dermoid which were mimicking malignant ovarian mass. The presence of mild ascites, peritoneal and omental thickening and caking could be due to persistent small leak from the cysts over a long period of time which might have lead to granulomatous peritonitis. In addition to imaging, tumour markers i.e CA 125 and CA-19-9 were also raised. These features along with clinical presentation of the patient raised a suspicion of malignancy. Laparotomy was performed as there were bilateral complex ovarian masses by giving midline vertical incision. Right ovary could not be saved as the whole ovary was involved. However we were able to save the left ovary by retaining significant amount of ovarian stroma for future fertility and menstrual function. The patient is being followed up every 6 monthly with CA 125 and ultrasound to look for tumour recurrence and has resumed her normal menstrual cycles.

Conclusion

Although ovarian teratoma are common and have an indolent course, but we present this case as all the features were suggestive of malignant ovarian mass but came out to be benign mature teratoma. Due to higher chances of recurrence, regular follow up should be advised with tumour markers and pelvic sonography.

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QUIZ TIME

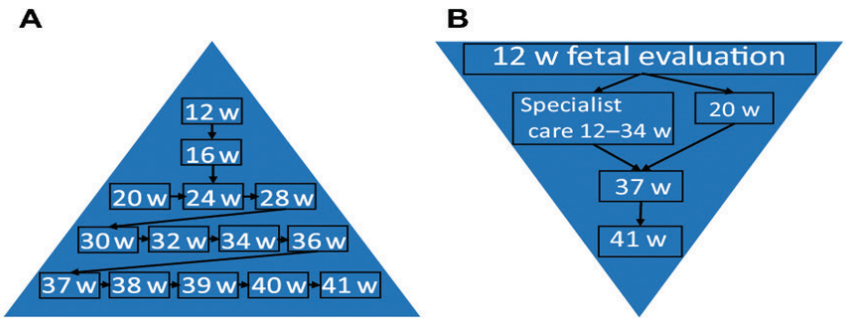
1. QUESTION. At what cervical dilatation should the documentation of labour care guide be initiated ?
   a) 3cm
   b) 4cm
   c) 5cm
   d) 6cm

2. QUESTION. Clenched fist with overlapping fingers in fetus on Ultrasound are seen in which syndrome ?
   a) Patau's syndrome
   b) Down's syndrome
   c) Turners syndrome
   d) Edwards syndrome

3. QUESTION. What is the mean sac diameter cut off on transvaginal approach at which missed abortion is confirmed ?
   a) 20 mm
   b) 22 mm
   c) 25 mm
   d) 27 mm

4. QUESTION. What is the full form of CHAP trial ?

5. QUESTION. What does the below picture signify ?



Q1. (C) 5 cm, Q2. (D) Edwards syndrome, Q3. (C) 25 mm, Q4. Chronic Hypertension and pregnancy. Q5. Inverted pyramid of antenatal care

ACTIVITIES HELD UNDER NARCHI IN APRIL 2024

HANDING OVER CEREMONY OF NARCHI DELHI OFFICE FROM TEAM LHMC TO TEAM SGRH

FIRST EXECUTIVE MEETING HELD ON 10TH APRIL, 2024

First hybrid executive meeting was held at Sir Ganga Ram Hospital on 10th April 2024.

We were honoured to have with us (physically)very senior veterans like Dr Mukherjee, Dr Maya Sood, Dr Chitra, Dr Swaraj Batra, Dr Bakshi, Dr Achla, Dr Manju Puri, Dr Abha Singh, Dr Indu Chawla, Dr Anita Sabharwal, Dr Latika Bhalla (Adolescent child specialist), Dr Anjeleena (anaesthetist), Dr Sumita Mehta. Besides team Sgrh. Many senior members joined via Zoom platform too.






PUBLIC AWARENESS LECTURES HELD ON 15TH APRIL, 2024

NARCHI Delhi chapter organized its first Public Awareness Lectures on Respectful Maternity Care Initiative on 15th April at Sir Ganga Ram Hospital.

About 10 couples attended the session. They were told about the journey of pregnancy as well as the destination of labour what they should expect. They were guided about nutrition, exercises as well as the labour analgesia.

The program was well appreciated. These initiatives are planned once every month and pregnant mother actually looks forward for these educative and interactive sessions.



CAMP HELD ON 18TH APRIL, 2024

We are pleased to inform you that **"Public Awareness & Health Camp"** was organized by Institute of Obstetrics & Gynaecology, Sir Ganga Ram Hospital on 18/04/2024 under the aegis of NARCHI Delhi Chapter jointly Organized by Institute of Obstetrics & Gynaecology, Sir Ganga Ram Hospital and Public awareness committee of FOGSI, AOGD at Sri Aurobindo College, Delhi University, Malviya Nagar.

The camp was conducted by our enthusiast doctors - Dr. Punita Bhardwaj, Dr. Huma Ali & Dr. Lakshaya (Intern) together with Dr. Anita Sabharwal of Public Awareness Committee of FOGSI, AOGD.

About **150 delegates** participated in this camp. This endeavor was highly appreciated and request was for more such activities in the future.

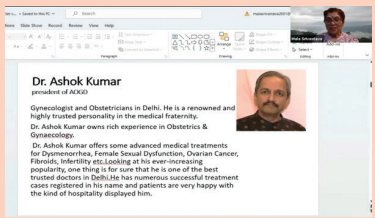
WEBINAR HELD ON 24TH APRIL 2024

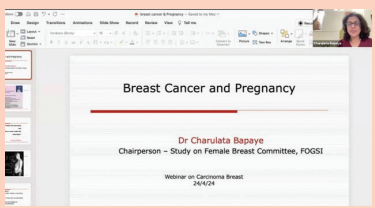
On April 24th, 2024, a webinar on Breast Cancer was conducted under the aegis of the NARCHI Delhi Chapter and the Oncology Committee of FOGSI. The webinar was participated by approximately 67 delegates.

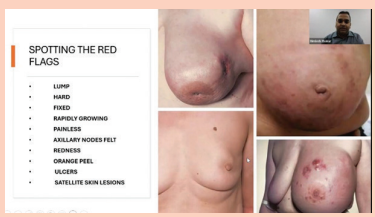
There were deliberations on Breast Cancer, what a gynecologist should know, imaging of Carcinoma, Pregnancy & Breast Cancer, Newer Modalities in management of Carcinoma Breast and Fertility Preservation in Carcinoma Breast. We had eminent and star speakers for the event like Dr. Bimlesh Thakur, Dr. Mahendra KM, Dr. Charulata Bapaye, Dr. Deepika Gupta, and Dr. Saloni Chadha.

We were blessed by our chief guests Dr Kamal Buckshee, our Guest of Honor Dr Jayashree Sood and Dr. Ashok Kumar.

This webinar was very well appreciated and all the attendees requested to hold such webinars frequently in the future.







PUBLIC AWARENESS LECTURE HELD ON 30TH APRIL, 2024

Public awareness lecture on Menstrual Problems was held on 30th April 2024. It was organized under the aegis of NARCHI Delhi Chapter. We were blessed by Dr Archana Verma, Past Vice President of FOGSI who was our Chief Guest. Dr Jayashree Sood, Vice Chairperson of the Board of Management, Sir Ganga Ram Hospital, and Dr Kanwal Gujral, Chairperson of the Institute of Obstetrics & Gynaecology were our Guest of Honour. They also blessed the gathering with their pearls of wisdom.

Dr. Sharmistha Garg and Dr. Renuka Brijwal spoke on Menstrual Disorders and Menstrual Hygiene. The lectures were attended by 1st year, 2nd year and 3rd year nursing students. The students and their tutors enjoyed the session. They requested for more such public awareness lectures. About 76 students attended this public awareness lecture and had a great interactive session. There was a Quiz & Video session at the end of the program and students won the prize for the Quiz.

ACTIVITIES HELD UNDER NARCHI IN MAY 2024

PUBLIC AWARENESS LECTURES ON THALASSEMIA DAY HELD ON 8TH MAY, 2024

NARCHI Delhi chapter organized Public Awareness Lectures on Thalassemia on the occasion of Thalassemia Day on 8th May 2024 at Sir Ganga Ram Hospital, New Delhi.

We were blessed by our Chief Guest - Dr Achla Batra – National President of NARCHI & Guest of Honor - Dr. Jaya Sood - Vice Chairperson, BOM SGRH & Dr. Monica Rana. We had inputs from experienced chairpersons like - Dr. Renu Saxena, Dr. Latika Bhalla, Dr. Pankaj Garg & Dr. Mala Srivastava. We were lucky to have star speakers who enlightened us on topics of "Overview of Thalassemia by Dr. Achla Batra", "Genetic in Thalassemia by Dr. Veronica", "Thalassemia : Problems & Solutions" by Dr. V. K. Khanna. The public awareness lectures were attended by approximately 57 delegates.

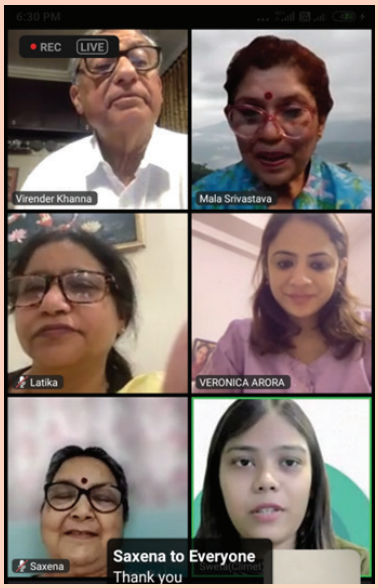
It was an interactive session with lots of take home messages.

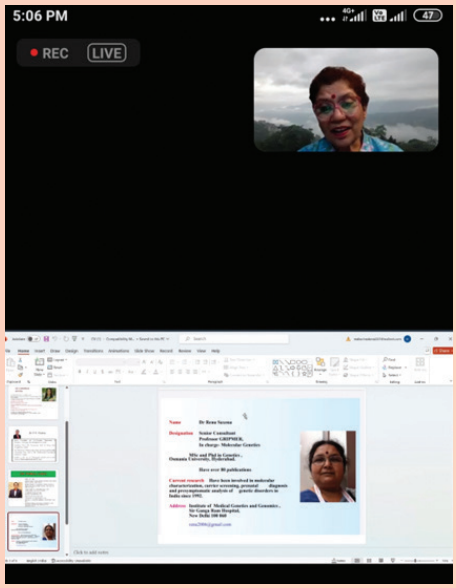
WEBINAR HELD ON 12th May 2024

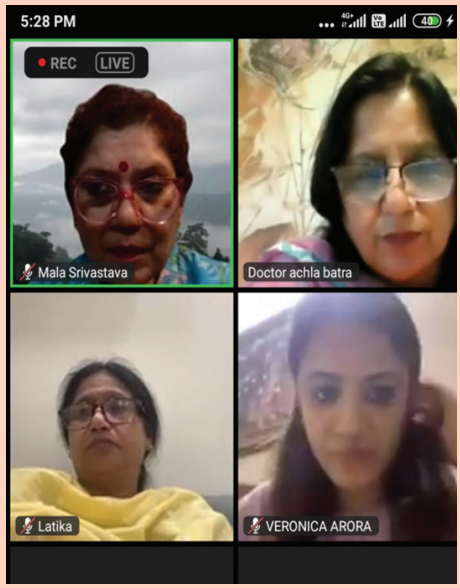
On May 12th, 2024, a webinar on Thalassemia was organized on occasion of "Mothers Day" under the aegis of the NARCHI Delhi Chapter by Institute of Obstetrics & Gynaecology, Sir Ganga Ram Hospital, New Delhi. The webinar was attended by approximately 75 delegates.

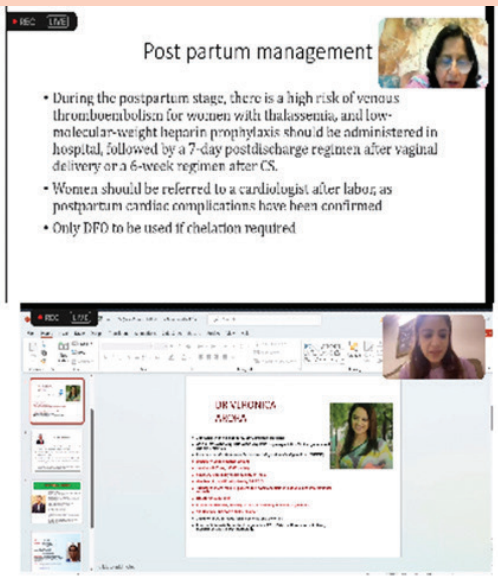
We were blessed by our chief guests Dr. Achla Batra, National President of NARCHI. We were happy to have Senior and experienced chairpersons, who enriched the learning with their inputs and experience - Dr. Renu Saxena, Dr. Latika Bhalla, Dr. Pankaj Garg & Dr. Mala Srivastava.

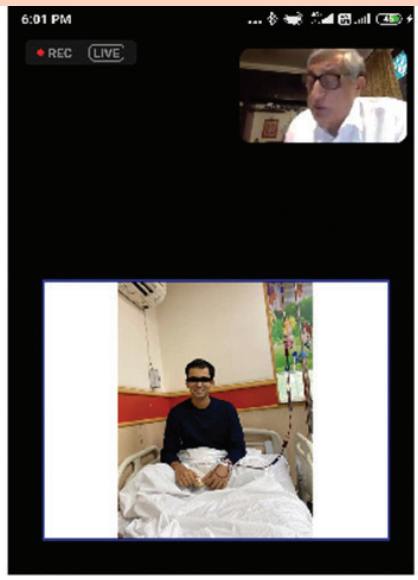
This webinar was very well appreciated and all the attendees requested to hold such webinars frequently in the future.











PUBLIC AWARENESS LECTURES ON RESPECTFUL MATERNITY CARE HELD ON 14TH MAY, 2024

NARCHI DELHI CHAPTER - Together with Institute of Obstetrics & Gynaecology and Institute of Anaesthesiology, Pain & Perioperative Medicine, Sir Ganga Ram Hospital, New Delhi organized Public Awareness Lectures on Respectful Maternity Care at **Sir Ganga Ram Hospital, New Delhi on 14th May 2024.**

It was attended by 12 antenatal patients along with their husbands. An interactive session was held where

basic "Antenatal Care" was presented by Dr. Sharmistha Garg, "Introduction To Labour Analgesia" was presented by Dr. Anjeleena Gupta, "Dietary Management" was presented by Ms Shipra, "Physiotherapy In ANC" was presented by Dr. Indu, "Breast Feeding" was presented by Mrs. Priya Gandhi & "Labour Care Bundle" was presented by S/N Sarita Samul. The topics were discussed in detail and all the related queries were answered. This sessions of Public Awareness Lectures were highly appreciated.

It was an interactive session and all the delegates really appreciated the event.

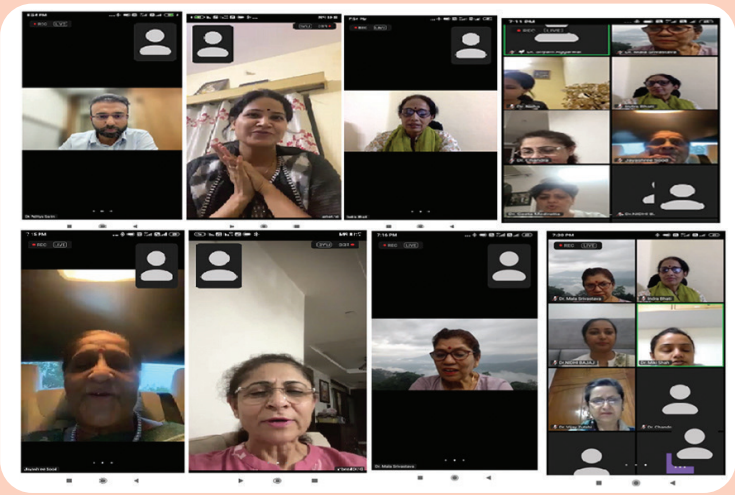


WEBINAR HELD ON 22nd May 2024

On May 22nd May, 2024, a webinar on Gestational Trophoblastic Neoplasia (GTN) was conducted under the aegis of the NARCHI Delhi Chapter & Oncology Committee of FOGSI by Institute of Obstetrics & Gynaecology, Sir Ganga Ram Hospital, New Delhi. The webinar was participated by approximately 72 delegates.

We were blessed by our chief guests Dr. Jaya Sood, Guest of Honors Dr. Shyam Agarwal, Dr. Geeta Mediratta, Dr. Chandra Mansukhani. We were happy to have Senior and experienced chairperson, who enriched the learning with their inputs and experience - Dr. Nidhi Bajaj, Dr. Indira Bhati, Dr. Piyush Vadalia, Dr. Prasad Halkarnikar, Dr. Vandana Gupta & Dr. Neha Seehra. We were lucky to have star speakers like Dr. Vijay Zutshi, Dr. Mala Srivastava, Dr. Aditya Sarin who gave very informative and exhaustive scientific deliberations.

This webinar was very well appreciated and all the attendees requested to hold such webinars frequently in the future.



ACTIVITIES HELD UNDER NARCHI IN JUNE 2024

CME ON CERVICAL CANCER PREVENTION HELD ON 9TH JUNE, 2024

NARCHI Delhi chapter organized CME on Cervical Cancer Prevention on 9th June 2024 at Sir Ganga Ram Hospital, New Delhi.

We were blessed by our Chief Guest – Dr. S.N. Mukherjee & Guest of Honor - Dr. Kamal Buckshee, Dr. Achla Batra, Dr. Kanwal Gujral & Dr. Harsha Khullar. We had inputs from experienced chairpersons like - Dr. Anita Rajorhia, Dr. Geeta Mediratta & Dr. Chandra Mansukhani. We were lucky to have star speakers who enlightened us on topics of "HPV-Vaccination by Dr. Mala Srivastava", "Screening of Cervical Cancer by Dr. Shweta Balani". Case based Panel Discussion on Pre invasive lesions of cervix under expert guidance of Dr. Sunita Malik, Dr. Gauri Gandhi & Dr. Harsha Khullar, moderated by – Dr. Sumita Mehta and panelists were Dr. Anshul Rohatgi, Dr. Shruti Bhatia, Dr. Pakhee Aggarwal & Dr. Kanika Chopra. The CME was attended by approximately 50 delegates.

It was an interactive session with lots of take home messages.

ANM TRAINING ON IUCD/PPIUCD INSERTION ON 13TH JUNE, 24 at HIMSR & HAHC HOSPITAL, JAMIA HANDARD, DELHI

The department of Obstetrics and Gynecology, HIMSR in collaboration with National Association For Reproductive and Child Health of India (NARCHI) Delhi, organised training of ANM for Intra-uterine contraceptive device insertion on 13th June, 2024. It was attended by approximately 35 ANM and Dr Stuti, In-charge family planning, Medical Officer, Southeast district Saket apart from the faculty, senior residents and postgraduates.

There was a pre-test followed by Lecture on various contraceptive methods by Dr. Asma Khanday and Dr Garima Maan. The Lecture was followed by demonstration of Interval IUCD and PPIUCD insertion by faculty, Senior residents and Post graduates. ANM were explained the correct insertion by hands-on training on dummies and models.

PUBLIC AWARENESS LECTURES ON RESPECTFUL MATERNITY CARE HELD ON 14TH JUNE, 2024

NARCHI DELHI CHAPTER - Together with Institute of Obstetrics & Gynaecology and Institute of Anaesthesiology, Pain & Perioperative Medicine, Sir Ganga Ram Hospital, New Delhi organized Public Awareness Lectures on Respectful Maternity Care at **Sir Ganga Ram Hospital, New Delhi on 14th June 2024.**

It was attended by 8 antenatal patients along with their husbands, an interactive session was held where basics of "Antenatal Care" was taken by Dr. Sharmistha Garg, "Introduction To Labour Analgesia (Dietician)" was taken by Dr. Anjeleena Gupta, "Dietary Management" was taken by Dr. Vandana, "Physiotherapy In ANC" was taken by Dr. Indu (PT) & Dr. Deepti Pandey (PT), "Breast Feeding" was taken by Ms. Neha along with Mrs. Priya Gandhi & "Labour Care Bundle" was taken by S/N Sarita Samul. The topics were discussed in detail and all the related queries were answered. This sessions of Public Awareness Lectures was highly appreciated.

It was an interactive session and all the delegates really appreciated the event.


REPORT OF INTERNATIONAL YOGA DAY HELD ON 21st JUNE, 2024

On the international Yoga Day on 21st June, 2024, how could NARCHI and Sir Ganga Ram Hospital stay behind. Under the aegis of NARCHI Delhi Chapter, Yoga Day was held at Sir Ganga Ram Hospital under the superb guidance of Yoga Guruji Mr. Ramesh. It was attended by a number of doctors working at Sir Ganga Ram hospital and this endeavor was really appreciated by all.

WEBINAR ON GYNAE ONCOLOGY was held on 27th June 2024 by the Institute of Obstetrics & Gynaecology, Sir Ganga Ram Hospital under aegis of NARCHI Delhi Chapter and Oncology Committee of FOGSI. The Chief Guest was eminent

We were blessed by our chief guests Dr. Jaya Sood. We were happy to have Senior and experienced Guest of honors Dr. Geeta Mediratta, Dr. Chandra Mansukhani and Dr Priti Kumar, who enriched the learning with their inputs and experience. The convener was Dr. Mala Srivastava, President of NARCHI Delhi Chapter. Dr. Pallav gave a wonderful lecture on Immunohistochemistry in Oncology under the superb guidance of Chairpersons – Dr. Udayan Sarkar, Dr. Shabana Sultana and Dr. Sabya Sachi Ray. Following this was a very interesting lecture by Dr. Ratna Puri on Genetics in Oncology under the experts chairpersons – Dr. Monica Singh, Dr. Kanika Jain and Dr. Mamta Dagar. The webinar was attended by many delegates and it was well very appreciated.

Organizing Team