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and Reproductive Biology**

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Perinatology and Reproductive Biology**

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# Obstetric Sepsis: Changing Trends in the Management, Controversies and the Way Forward

**Hiralal Konar**

Maternal sepsis is a life threatening condition. It often ends with an organ dysfunction resulting from infection during pregnancy, child birth, post abortion or post partum period. Globally sepsis is the lead cause of maternal morbidity and mortality. Worldwide 25-40% of maternal deaths and 50% of perinatal deaths are due to sepsis.<sup>1,2</sup> Maternal mortality survey in India (2013), revealed, sepsis is the third important cause of maternal deaths.<sup>3</sup>

Sepsis has a complex pathophysiology. Physiological changes in pregnancy mimic the changes of sepsis, with this often there is delay in the diagnosis and initiation of management. Physiological changes in pregnancy affects almost all the body system mainly the cardiovascular, respiratory, renal, coagulation and the metabolic systems. These adaptations are designed to support the growth of the fetus. However these changes impair maternal defense capacity to respond against sepsis. There is upregulation of prostaglandins (PGE2) and Nitric Oxide (NO) due to high levels of estradiol in pregnancy. This causes abrupt development of maternal hypotension and organ dysfunction.<sup>4</sup>

Author's experience in the management of obstetric sepsis, started since the work at NRS Medical College hospital, Calcutta as the registrar. This institute has the very long term study over the years, in the management of septic abortion cases. One such study<sup>5</sup> from this Medical college Hospital (1993) revealed significant maternal deaths (15.6%) in cases with septic abortion. Visceral injury was present in 25% of cases.<sup>2</sup> Selective and timely surgical intervention, could bring down

the death rate from 25% (1976) to 6.2%<sup>6</sup> (1990). All the cases of septic abortion were associated with severe type of polymicrobial infection. Presence of visceral injury made the control of sepsis very difficult. Initial management was the medical and surgical management was considered only at the late phase. Finally, it was changed to combined approach of medical and aggressive surgical as on priority. This change in practice established a significant improvement in survival outcome in such cases. This institute was pioneer to start the management of anaerobic organisms by metronidazole (Flagyl) rectally, as IV preparations were not available those days.<sup>7</sup>

Global Maternal Sepsis Study (GLOSS) WHO 2017, has developed strategies for prevention, early detection and effective management for women with sepsis in low and middle income countries (LMIC) and high income countries (HICS).<sup>8</sup> Sequential Organ Failure Assessment (SOFA) or Obstetrically modified qSOFA score allowed a rapid clinical assessment. Such a score > 2 is associated with high risk of mortality.<sup>9</sup> Other scoring system, modified early warning scores (MEWS) is also used as an important tool to identify an ill patient. Use of prophylactic antibiotic for prevention of sepsis (NICE) is introduced in most of the institutes.<sup>10</sup> Antibiotic resistance is a global problem. Overall, 10 million deaths are estimated globally by 2050 due to antibiotic resistance.<sup>11</sup> Identification of pathogen is commonly done by blood culture. It is positive in 20-40% of cases with severe sepsis. Moreover it is time consuming. Currently DNA sequencing of multiple pathogens and identification

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of resistance genes from blood samples are possible. Matrix-assisted laser desorption / ionization (MALDI) to identify wide spectrum organism could be one. Different biomarkers of sepsis are used for assessment of severity of pathology. Commonly used parameters are: procalcitonin, serum lactate, C-reactive protein and others. Levels of serum lactate  $> 4$  mmol/L is associated with higher mortality (46%). Raised serum lactate indicates tissue hypoperfusion and hypoxia. Pathophysiology of sepsis is a complex one. Activation of pro inflammatory cytokines (IL-1,6,8,12,TNF) complement systems, coagulation system is evident. Release of biomediators like NO, CD4, cytotoxic cells, generation of immunological response and production of antibodies make the situation more complex.<sup>12</sup>

Control of sepsis with appropriate antimicrobial agents are essential. Clinicians need to think beyond the traditional concept of pathogens. Based on the current understanding therapy with immunoglobulin (IV Igs) are made as an adjuvant to antibiotics. IV Igs therapy found to improve the survival outcome of patients with sepsis. It improves endothelial dysfunction, hypotension and inhibits the pro inflammatory cytokines. Overall morbidity and mortality are reduced.

Incorporation of extracorporeal membrane oxygenation (ECMO) is found to improve the survival rate significantly (80%) in cases with septic shock associated with respiratory failure.<sup>13</sup> Levosimendan a new pressor drug has been observed to improve the hemodynamic profile and organ dysfunction. Vasopressors are needed for patients admitted in intensive care unit with severe shock. Commonly used drug is noradrenaline. Currently Levosimendan, has been found to improve the hemodynamic profile and organ function. It is found to be a noble inotropic drug with vasodilatory properties. Additionally it has anti inflammatory and anti oxidative properties against anaerobic oxidative metabolism.

Controversies in management remain in many areas such as selection of antibiotics, initiation of intensive care management and optimum glycemic status. Pregnancy is a state of abnormal glycemic control with insulin resistance. Most intensivists consider a level of  $<180$  mg/dl is optimum. Use of corticosteroids in the management of septic shock is a long term debate. Forty two such randomized control trials favored its use and reduction of maternal mortality. Many reviews stated that the quality of evidence was low. RCOG guidelines do not consider its use in sepsis.<sup>14</sup> Use of corticosteroids for fetal lung maturity, for women with asthma or connective tissue disorder need to be maintained with caution. Recent studies did not reveal any adverse effects on fetal outcome on repeated doses of corticosteroids.

Benefits of steroids as shown with several RCT. Corticosteroids have been used as an anti inflammatory agent for patients with systemic inflammatory response syndrome (SIRS) or with adrenal insufficiency. Other proposed advantages of corticosteroids are:

(a) stabilization of lysosomal membranes (b) Counteracts the anaerobic oxidative metabolism (c) improves regional blood flow (micro circulation) (d) positive inotropic effect to the myocardium and as a vasopressor agent.

Current research opens the new horizon. Universal detection of genes (genomics), mRNA (transcriptomics), proteins (proteomics), and metabolites (metabolomics) in biological specimens (blood, urine, amniotic fluid, cervico vaginal fluid) is possible through 'Omic' technologies. It is being studied extensively in the present days.<sup>15</sup> Currently there is a shift to an individualized approach clinical care. It is done by studying the individual's biological response to the pathogens.<sup>16</sup>

Otherwise precision medicine is the way forward. Transnational research and clinical trials are expected to help the understanding of the pathogenesis of sepsis in pregnancy, labor and puerperium. Personalized medicine is the future health care.

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# Respectful Maternity Care: A Holistic Approach

Usha Sharma\*

**“In India we have great respect for Mothers”**



**Do we show the same respect for “mother to be” during pregnancy and childbirth?**

## Introduction

In every country and community worldwide, pregnancy and childbirth are momentous events in the lives of women and families and represent a time of intense vulnerability. The concept of “safe motherhood” is usually restricted to physical safety, but childbearing is also an important rite of passage, with deep personal and cultural significance for a woman and her family.

Holistic approach in medicine means treatment of the whole person taking into account mental and social factors, rather than just the symptoms of a disease. In a pregnant patient holistic approach to RMC entails good antenatal, intrapartum and postpartum care of the mother and the baby. This approach also includes care of the emotions and psychological needs of the pregnant woman. It also includes involving the family and the society.

\*President ISOPARB [2020-22]

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Every woman around the world has a right to receive respectful maternity care. In November 2000, the International Conference on the Humanization of Childbirth was held in Brazil, largely as a response to the trend of medicalized birth, exemplified by the global cesarean section epidemic, as well as growing concerns over obstetric violence. Advocates emphasized the need to humanize birth, taking a more holistic approach.

<https://www.mhtf.org/topics/respectful-maternity-care/maternalhealthtaskforce>

## History

The journey toward respectful maternity care began in the late 1940s with the Universal Declaration of Human Rights. In the 1990’s, the United Nations issued the “Declaration on the Elimination of Violence against Women” and a movement gained force in Latin America which was termed “humanization” of childbirth. Growing awareness of often unaddressed issues of emotional, physical and psychological harm to women during facility-based childbirth required greater consideration.

In 2011, White Ribbon Alliance published the Respectful Maternity Care Charter: The Universal Rights of Childbearing Women, a document utilized in many countries as an advocacy and program tool. The World Health Organization released a statement in 2014 reasserting the fundamental human rights of women in childbirth. The field of respectful care has continued to grow with increased focus, as evidenced by numerous studies and publications.

**White Ribbon Alliance | October 2011**  
**World Health Organization | October 2014**

## Obstetric Violence

The concept of “obstetric violence” gained momentum in the global maternal health community during the childbirth activism movement in Latin America in the 1990s.

In 2007, Venezuela formally defined “obstetric violence” as the appropriation of women’s body and reproductive processes by health personnel, which is expressed by a dehumanizing treatment, an abuse of medicalization and pathologization of natural processes, resulting in a loss of autonomy and ability to decide freely about their bodies and sexuality, negatively impacting their quality of life.

<https://www.mhtf.org/topics/respectful-maternity-care/>

## Rights of Childbearing Woman

Brower & Hill in 2010 has described the 7 rights of childbearing woman as universal human right admitted to any health facility.

### Corresponding Rights

- Freedom from harm and ill treatment
- Right to information, informed consent and refusal, and respect for choices and preferences, including companionship during maternity care
- Confidentiality, privacy
- Dignity, respect
- Equality, freedom from discrimination, equitable care
- Right to timely healthcare and to the highest attainable level of health
- Liberty, autonomy, self-determination, and freedom from coercion

## Disrespect And Abuse (D&A) – Global Scenario

Disrespect and abuse (D&A), a concept closely related to obstetric violence, has been documented in many different countries across the globe.

In a 2010 landscape analysis, Bowser and Hill described 7 categories of disrespectful and abusive care during childbirth:

### Category of Disrespect and Abuse

1. Physical Abuse

2. Non-consented care
3. Non-confidential care
4. Non-dignified care (including verbal abuse)
5. Discrimination based on specific attributes
6. Abandonment or denial of care
7. Detention in facilities

**Bowser, D., and K. Hill. 2010. Exploring Evidence for Disrespect and Abuse in Facility-based Childbirth: Report of a Landscape Analysis**

**A 2015 systematic review updated this framework to include:**

1. Physical abuse
2. Sexual abuse
3. Verbal abuse
4. Stigma and discrimination
5. Failure to meet professional standards of care
6. Poor rapport between women and providers
7. Health system conditions and constraints

<https://www.mhtf.org/topics/respectful-maternity-care/>

## Disrespect And Abuse (D&A) – Indian Scenario

The highest reported forms of ill-treatment were non consent, verbal abuse, threats, physical abuse, and discrimination. Sociocultural and environmental factors were identified as determinants of ill-treatment. The analysis also identified the need to achieve comparability across settings by developing tools, consistent methodologies, and standardized definitions.

In conclusion, there is a nation-wide need to focus on the quality of care delivered at the health facilities.

This can be achieved by development of targeted interventions and implementation of policies and programs that will eliminate disrespect and ensure respectful maternity care at all settings.

The high prevalence of disrespectful maternity care indicates an urgent need to improve maternity care in India by making it more respectful, dignified, and women-centered. Interventions, policies, and programs should be implemented that will protect the fundamental rights of women.

J Postgrad Med. 2020 Jul-Sep; 66(3): 133–140.

## **International childbirth initiative [ICI] - 2018**

### **Described 12 steps to safe & respectful Mother Baby-Family Maternity Care**

- Step 1: Treat every woman and newborn with compassion, respect and dignity
- Step 2: Respect every woman's right to access and receive non-discriminatory and free or at least affordable care
- Step 3: Routinely provide Mother Baby-Family maternity care.
- Step 4: Acknowledge the mother's right to continuous support during labour and birth
- Step 5: Offer non-pharmacological comfort and pain relief measures during labour
- Step 6: Provide evidence-based practices beneficial for the MotherBaby-Family
- Step 7: Avoid potentially harmful procedures and practices that have insufficient evidence of benefit outweighing risk for routine or frequent use
- Step 8: Implement measures that enhance wellness and prevent illness
- Step 9: Provide appropriate obstetric, neonatal, and emergency treatment
- Step 10: Have a supportive human resource policy
- Step 11: Provide a continuum of collaborative care
- Step 12: Promote breastfeeding and skin-to-skin contact,

### **Respectful Maternity Care Promotes**

- Respect for beliefs, traditions and culture
- Empowerment of the woman and her family to become active participants in health care
- Continuous support during labor
- Choice of companion during labor and birth
- The right to information and privacy
- Freedom of movement during labor
- Respect for beliefs, traditions and culture
- Empowerment of the woman and her family to become active participants in health care
- Continuous support during labor
- Choice of companion during labor and birth
- The right to information and privacy
- Freedom of movement during labor

## **Benefits of Holistic Therapy in Pregnancy**

Pregnancy should be a wonderful and a magical time, with so much to look forward to. However, there's a lot of pressure on the changing body, so it can also be an uncomfortable, stressful or even painful time.

Along with sensible exercise and healthy eating there are several holistic therapies which can have many benefits throughout pregnancy – and beyond Yoga, Pregnancy Massage, Bowen and Reflexology can all be valuable.

### **Measures to prevent and eliminate disrespect and abuse during facility-based childbirth**

- Greater support from governments and development partners for research and action on disrespect and abuse
- Initiate, support and sustain programs designed to improve the quality of maternal health care, with a strong focus on respectful care as an essential component of quality care
- Emphasizing the rights of women to dignified, respectful health care throughout pregnancy and childbirth
- Generating data related to respectful and disrespectful care practices, systems of accountability and meaningful professional support are required
- Involve all stakeholders, including women, in efforts to improve quality of care and eliminate disrespectful and abusive practices

## **Take Home Message**

A holistic approach considers all aspect of your family life to best prepare you for pregnancy, child birth and parenting.

Holistic pregnancy care is personalized for each individual.

Respectful Maternity Care (RMC) will be incomplete without holistic approach.

The Health Care Providers should aim for Respectful Maternity Care with holistic approach for every women globally.

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- Case reports of importance and papers on basic science are also accepted with these subjects.

## Managing Hyperprolactinemia

Sukumar Barik

### Introduction

Prolactin is a polypeptide responsible for milk production, secreted from the anterior lobe of pituitary gland. It is associated with eating, mating and nursing. It is upregulated by several stimulatory factors and downregulated Prolactin Inhibitory Factor.

Hyperprolactinemia is a state, not a disease in itself, in which the total serum level of prolactin rises. It is a common clinical condition which is seen in 9% cases of amenorrhoea, 25% cases of galactorrhoea and in 70% cases of combined amenorrhoea & galactorrhoea. It is also found in 5% cases of infertility or erectile dysfunction in men. Hyperprolactinemia is found to be associated with polycystic ovary syndrome in about 7-30 % of cases. In a study of etiological factors of irregular periods in young Women in a semi urban tertiary care hospital of West Bengal, India, it was found that 57.3% of women with menstrual dysfunction have only polycystic ovary syndrome according to Rotterdam criteria. 22% had normal findings suggesting only anovulation without any known cause, 10.6% had polycystic ovary syndrome with hyperprolactinemia, 2% had only hyperprolactinemia, 2% had subclinical hypothyroidism and 0.66% had premature ovarian insufficiency and hypothyroidism.<sup>1</sup>

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### Causes of Hyperprolactinemia:

#### Physiological

- Pain
- Pregnancy
- Coitus
- Sleep
- Nipple stimulation
- Pelvic examination
- Exercise

#### Pathological factors

- Hypothalamic factor
- Pituitary factor
- Thyroid dysfunction

#### Drugs

- Dopamine antagonists
- Dopamine depleting agents
- Narcotics

#### Idiopathic

Antipsychotics (typical) Phenothiazines Prochlorperazine Clomipramine Thioridazine Fluphenazine Pimozide	Gastrointestinal Metoclopramide Cimetidine
Antipsychotics(atypical) Risperidone Olanzapine Molindone	Antihypertensives Methyldopa Verapamil Reserpine
Antidepressants Clomipramine Desipramine Amitriptyline	Opiates Morphine Codeine
	Monoamine oxidase inhibitors Pargyline Clorgyline

Fig 1: Drugs causing Hyperprolactinemia



Prolactin assay is indicated in certain common conditions mentioned below:

- Secondary amenorrhoea
- Galactorrhoea
- Ovulatory dysfunction
- Unexplained infertility
- Oligospermic men

Not all hyperprolactinemic patients will display galactorrhoea and galactorrhoea can be seen with normal prolactin level.

Blood for serum prolactin should be drawn without multiple venepuncture stress at any time of the day. A single report above the normal levels is generally sufficient to confirm the diagnosis. If any doubt arises, sampling can be repeated on a different day.

### Macroprolactin effect:

Monomeric prolactin (PRL) and Immunoglobulin G (IgG) combines to form macroprolactin. It has a longer half-life and is considered biologically inactive. It is responsible for false positivity in most available immunoassays. Polyethylene glycol (PEG) is used to precipitate macroprolactin and thus helps in eliminating unnecessary testing and treatment.

Hook effect: High serum prolactin concentrations saturate antibodies in the two-site immunoradiometric assay which causes a falsely low prolactin value. This is known as "hook effect". Serial dilution of serum samples eliminates such errors. Discrepancy between a very large pituitary tumor and a mildly elevated prolactin level is suggestive of hook effect.

REPORT ON THE EXAMINATION OF BLOOD (SERUM)			
-----			
SYSTEM :		Cobas e 411	
-----			
METHOD :		Electrochemiluminescence	
-----			
TEST		REFERENCE RANGES	
-----			
PROLACTIN (native) (ng/ml)	113.0	Female : Non pregnant woman	: 4.79 - 29.5
		Male :	: 4.04 - 15.2
PROLACTIN (After PEG Precipitation) (ng/ml) (MONOMERIC PROLACTIN) (Biologically active)	98.26	(Recovery : 86.95%)	
-----			
INTERPRETATION :			
-----			
A) If Recovery is >60% ----- Sample contains mostly monomeric prolactin.			
B) If Recovery is between 40% and 60% ----- "grey zone". In addition to monomeric prolactin, sample also contains macroprolactin and/or oligomeric prolactin. Further assessment is necessary (e.g. gel filtration chromatography).			
C) If Recovery is <40% ----- Sample contains mostly macroprolactin and/or oligomeric prolactin. Results need to be correlated with clinical findings.			
(Macroprolactin has reduced bioactivity in comparison to monomeric prolactin. Hence, all samples with increased prolactin should be screened for macroprolactin to distinguish between true hyperprolactinaemia and apparent hyperprolactinaemia due to macroprolactinaemia.)			
Suggested clinical correlation			
Drawn sample received			

Fig 2: Prolactin level after PEG precipitation



Agonist	Nature	Dose	Maintenance
Bromocriptine	Ergot derivatives	2.5 – 10 mg/day	7.5 mg/day
Lisuride	Ergot derivatives	0.1-0.2 mg/day	0.1 mg/day
Quinagolide	Ergot derivatives	25-300 microgram/ day	75 microgram/day
Cabergoline	Ergot derivatives	0.25-1 mg twice a week	1 mg/weekly

Fig 3. Drugs used for hyperprolactinemia

Imaging in Hyperprolactinemia: If prolactin level is 250ng/ml or more, Magnetic resonance Imaging of brain should be done to look for pituitary tumors. Computerized axial Tomography scan is not preferred as it fails to detect small lesions and also large lesions with isodense surrounding structure.

### **Treatment of Hyperprolactinemia:**

Main stay of therapy is use of dopamine agonists. This group of drugs have undergone several decades of clinical use and gradually evolved over the years. Commonly used bromocriptine is largely replaced by user friendly cabergoline.

### **Bromocriptine vs. Cabergoline:**

Bromocriptine has good efficacy with longest track record but has high side effects like nausea, vomiting and postural hypotension.

Cabergoline has high efficacy with low adverse effects and low discontinuation rate.

A meta-analysis of normalization of serum prolactin levels and menstruation with return of ovulatory cycle showed a significant difference in favour of Cabergoline group (RR 0.67 [CI 95% 0.57, 0.80]).<sup>2</sup>

A retrospective study of 100 pregnancies treated with Cabergoline at the time of conception and follow-up of the 88 newborn children shows Cabergoline to be safe for both the pregnancy and the neonate.<sup>3</sup>

### **Cabergoline use and cardiac valve problems:**

Low dose Cabergoline in hyperprolactinemia appears to be associated with an increased prevalence of tricuspid regurgitation. The clinical significance of this is unclear and requires further investigation.<sup>4</sup>

### **Recurrence of hyperprolactinemia:**

In a study comprising of 200 patients of hyperprolactinemia with 25 patients of idiopathic hyperprolactinemia followed up for 2 to 5 years, a recurrence rate of 24% was observed.<sup>5</sup>

### **Management of hyperprolactinemia in pregnancy:**

In idiopathic hyperprolactinemia and in cases of microprolactinoma treatment should be stopped. In cases of macroprolactinoma (size > 1 cm) treatment should be continued. Formal visual field testing should only be done in symptomatic patients and cases of macroadenoma.

In cases of drug induced hyperprolactinemia, the offending drug should be stopped or changed or continued as per the desired outcome.

### **Take home message:**

- Prolactin assay – single assay; macroprolactinemia to be considered.
- Drug history important; Stop, change, continue.
- MRI in select cases; preferable to CT scan.
- If hypothyroid – treatment first.
- Cabergoline – high efficacy and tolerability.
- Long term use of cabergoline – to be done with caution.
- Bromocriptine – used in small number of cases.
- Microadenoma and macroadenoma - satisfactorily managed with dopamine agonists.
- Surgery – indicated in selected cases.
- Pregnancy - should be planned and monitored carefully.
- Idiopathic hyperprolactinemia – recurrence common
- Follow up – necessary

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## Primary Cesarean Section in Multiparous Women In Tertiary Centre: A Prospective Study

Rakhi Singh<sup>1</sup>, Rita Kumari Jha<sup>2</sup>

### Abstract

**Introduction:** Cesarean Section (C.S.) is one of the most performed operation in today`s modern obstetrics. Primary cesarean in multiparous woman means C.S. done first time on patients who had delivered vaginally once or more after the period of viability.

**Aims & Objectives:** Aim is to highlight the importance of antenatal and intranatal care even in multiparous women having previous vaginal delivery.

Objective is to study the cases in which C.S. was done for the first time in parous woman having vaginal delivery once or more in detail.

**Materials & Methods:** It was a hospital based prospective study in which 474 cases were taken for study whose C.S. was done for the first time in Labor room PMCH Patna between Jan 2019 to Dec 2019.

After admission and proper workup, various indications for cesarean were studied in relation with age, parity and maternal & perinatal outcome.

**Results:** Amongst the various indication of C.S. in multiparous women,

Fetal Distress, CPD, APH, Malpresentation & HDP were found in most of the cases. Most cases were unbooked and referred. Most common age group was 20-25 years, and 2nd and 3rd gravida were more frequent.

**Conclusion:** Previous vaginal deliveries give a false sense of security to the patients as well as relatives, but there are many reasons where C.S. becomes necessary for maternal and fetal interests.

**Key Words:** Multiparous, cesarean section, vaginal delivery.

---

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## Introduction

Cesarean Section is the most performed operation in today's modern obstetrics.<sup>1</sup> It defines the birth of a fetus after the end of 28th weeks, delivered through an incision in abdominal and uterine walls.<sup>2</sup> Multiparous means those who has completed two or more pregnancies to the period of viability or more, it includes parity 2-4 and grand multiparous >4.<sup>2</sup> Primary cesarean refers to a C.S. done for the first time whereas repeat C.S. denotes an operation in subsequent pregnancies.<sup>2</sup> Primary C.S. in multiparous means first C S done in a patient who had delivered vaginally once or more after the period of viability.<sup>3</sup>

It is a common belief that once a mother delivers vaginally, all her subsequent deliveries will also be vaginal. As a result, such multiparous women neglect routine antenatal checkup and most of them come to the hospital in second stage of labor.

The incidence of C.S. has been increased two to threefold from the initial rate, because of the introduction of modern technology in labor ward and neonatal unit, identification of high risk cases, increased intrapartum surveillance, modern anesthesia, decline in operative or manipulative vaginal delivery, blood transfusion facility and better antibiotics. Indications for C.S. are also liberalized due to medical, social, ethical, economic, and medico-legal factors leading to worldwide increase in C.S. rates.<sup>2</sup>

## Aims & Objective

Aim is to highlight the importance of good antenatal and intranatal care even in a multiparous women having previous vaginal delivery.

Objective is to know the incidence and indications of primary C.S. in multiparous women and its relation with age and parity and also maternal and perinatal outcomes.

## Material and Methods

Study design—Hospital based prospective study

Study place—Labor room of Department of obstetrics and gynaecology, PMCH, Patna.

Study period—1 year, January 2019 to December 2019

Sample size—474 cases

**Inclusion Criteria:** All multigravida (Gravida 2 or more) with pregnancy >28 weeks of gestation.

**Exclusion Criteria:** Primigravida, Woman with previous cesarean section, Ectopic pregnancy, Ruptured uterus

**Data collection:** Written informed consent was subsequently obtained from 474 cases during the period of one year from January 2019 to December 2019. A detailed questionnaire written in local language and information was collected. Mother's age, educational status, booked or unbooked, period of gestation, parity, mode of termination and follow up till discharge from ward were recorded. This included the patients reporting directly to labor room in various stages of labor as well as those who were admitted to antenatal ward for various high risk factors and taken up for elective C.S. Some of those first subjected to trial of labor & then subsequently were operated upon. Before and during the operation as well as at time of discharge, the patient and her accompanying person were counselled about the importance of spacing, contraception and immunization.

**Ethical Approval:** Study approved by Institutional Ethical Committee.

**Data Analysis:** Data collected in questionnaire were analyzed by Microsoft excel.

## Results:

During the study period there were 2825 total C.S. performed. Among them, primary C.S. done in 474 multiparous women, resulting in incidence of 16.77% of total cesarean cases.

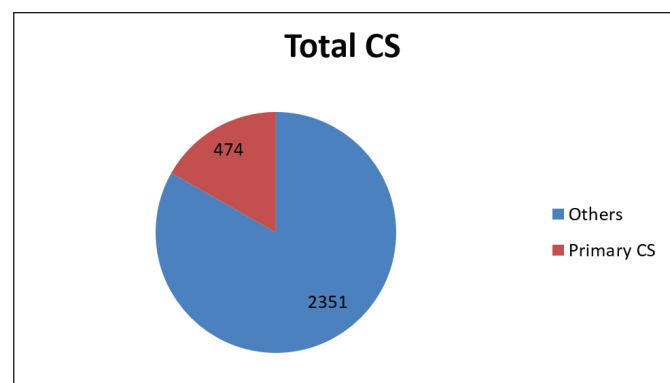


Fig -1: Incidence of Primary CS

In majority of multiparous women [n=390 (82.27%)] cesarean done in emergency, while in rest elective

cesarean done in cases of malpresentation (breech, transverse lie, twin with non vertex presentation, compound presentation), pregnancies with pelvic bony tumor and big vaginal cyst.

Majority of cases (n=48.73%) were in age group of 20-25 years, whereas 33.75% were between 26-30 years of age.

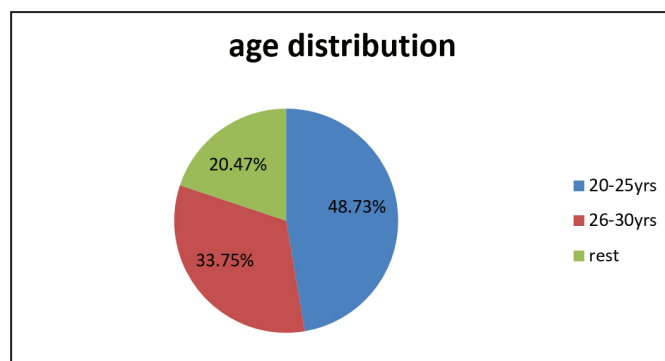


Fig 2: According to age

Most of them were gravida =2 (48.31%) & gravida=3 (30.80%), whereas para 4 and more were (20.88%).

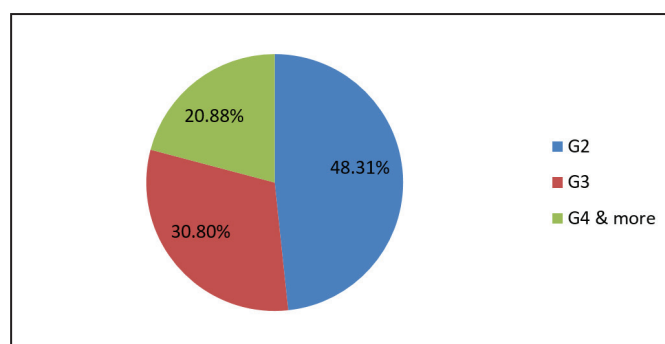


Fig 3: According to parity

Most common indication was Fetal distress (25.30%), followed by APH (20.88%) and Malpresentation (18.14%) for breech, face, transverse lie, and Twin with malpresentation.

Cesarean hysterectomy was done in 5 cases of APH & 3 cases of PPH --(1.68%).

Maternal morbidities also observed during follow up period like, Pyrexia n=29(6.1%), UTI n=16 (3.4%), Abdominal distension n=56(11.8%), RTI n=23(4.8%), Wound gaping/sepsis n=43(9%), Puerperal psychosis n=9(1.9%), PPH n=24 (5%), Severe anemia n=78(16.5%), other medical disorders n=93 (19.6%).

Perinatal outcome regarding birth weight, most of babies (70.5%) were >2.5 kg (2.5- 4kg), while 27.8%

of babies were <2.5 kg. APGAR= 8-10 seen in 91.7 % of cases while, low APGAR (<7) seen in babies of preterm, LBW, fetal distress with MAS/MSL, RDS, GDM with hypoglycemia and they were admitted in NICU (n=21=4.4%). IUD and stillbirth found in 18 (3.79%) in cases of abruption and obstructed labor.

Perinatal morbidities seen in babies were, MAS in 38.4%, Birth asphyxia in 35.97%, jaundice in 29.2%, followed by prematurity in 12.65% and sepsis and pyrexia in 12.8%

## Discussion:

Multiparity is a problem associated with lower age of marriage, poverty, low per capita income, illiteracy, high perinatal mortality, preference of male child, Ignorance and lack of knowledge of the available antenatal care and family planning measures.<sup>1</sup> A multipara who has earlier delivered vaginally may still require a C.S. for safe delivery. Cesarean delivery is considered as a safe alternative to prolonged and difficult vaginal operative delivery to reduce maternal and perinatal mortality and morbidity.

In this study 474 cases of multigravida underwent primary C.S. in study duration of Jan 2019 to Dec 2019 in Patna Medical College Hospital with an incidence of 16.77% (fig. 1) slightly higher incidence can be understood as our institute is tertiary referral centre.

Out of 474 cases, most of patients (48.73%) belong to age of 20-25 years followed by 33.75% in the age group of 26 to 30 year (fig. 2). Similar age pattern were seen in recent studies conducted in Government General Hospital Kakimoda (2013 to 2015) and Siddhartha Medical College, Vijaywada by P.Himabindu et al (2015).<sup>4</sup>

Distribution of cases according to parity shows that the most of patient (48.31%) were gravida 2 followed by gravida 3 (30.80%) (Fig. 3), Sethi. P et al (2014)<sup>5</sup> also reported similar pattern in his study.

In majority (82.28%) of multiparous women, emergency cesarean done, while elective cesarean done in rest of them. Similar results were observed in study done by Sherinsams C et al (2017).<sup>6</sup>

In this study, in most of the cases lower segment C.S. were done for Fetal distress (25.3%), APH (20.88%) and abnormal presentations (18.14%), HDP (12.2%).



These results were compared with studies by Erika Desai (2013)<sup>1</sup> and Jyoti H. Rao.<sup>7</sup> Chances of APH and HDP increases with increasing age. Malpresentation & malposition were more seen in these cases due to lax and pendulous abdominal wall in multigravida, imperfect uterine tone, extreme uterine obliquity and abnormal placentation.<sup>8</sup>

Caesarean hysterectomy was done in 8 cases of APH and PPH (1.68%).

Morbidities also seen in good no. of cases. Some cases had more than one morbidities.

Cases of severe anemia also seen in high no. of cases. All these anemic cases and cases operated for APH, PPH needed blood and blood products transfusion.

Puerperal pyrexia was the most common maternal morbidity seen in cases of anemia, prolonged labor, obstructed labor and PROM, may be due to more handling. Whereas, other morbidities seen were RTI, UTI, Abdominal distention (pseudo paralytic ileus in obstructed labor, CPD, septic cases and due to electrolyte imbalance), wound gaping/sepsis, puerperal psychosis and PPH.

With good intraoperative and postoperative care, there was no mortality.

In perinatal outcome, most of them were of good APGAR (8-10) and fall in average birth weight (2.5-4kg).

Conclusion: Although grand multiparity has been reduced in recent past years, multiparity is still prevailing in certain communities eventually jeopardizing the health of mother and her offspring. Good antenatal, intranatal care and early referral can reduce the maternal and perinatal morbidity and mortality in multiparous women. Hence a multipara woman in labor requires the same attention as that of primigravida.

Although vaginal delivery is always safer than C.S. but at the same time, it gives a false sense of security in woman who has delivered vaginally previously. In modern era with availability of good services and improved surgical expertise has made C.S. much safer, decreasing fetal loss and improving pregnancy outcome by early recognition of complications.

Ultimately, our goal should be a healthy new born in the lap of a healthy mother and this requires ANC with early identification of high risk pregnancy and good emergency care. Adoption of small family norm is a time demand too.

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# Full-Term Live Secondary Abdominal Pregnancy: A Rare Case Report

Ruchika Garg<sup>1</sup>, Sana Ismail<sup>2</sup>

### Introduction

In ectopic pregnancy, an extra-uterine abdominal pregnancy is a very rare form where implantation occurs within the peritoneal cavity excluding ovary, fallopian tube and broad ligament. It is estimated to occur in 1 out of 10,000 to 30,000 pregnancies.<sup>1,2</sup> Despite the use of routine antenatal ultrasound, its diagnosis is frequently missed.<sup>3</sup> It is extremely important to detect an extrauterine abdominal pregnancy because of the associated maternal mortality which is higher than ectopic pregnancy and intrauterine pregnancy. The factors that may influence the possibility of fetal survival are believed to be the site of implantation and availability of vascular supply. Full term abdominal pregnancy carries a risk of hemorrhage, disseminated intravascular coagulation, bowel obstruction and fistula formation. New born survival is also affected and there is increased perinatal mortality.

### Case Report

At our tertiary care hospital, a 22 year old patient was admitted to emergency room with complaints of 9-months amenorrhea and pain abdomen since morning. Patient was referred from primary health center and was a primigravida with transverse lie.

Her general condition on examination was good. Her pulse was 92 beats per min, BP—156/100

mm of Hg, patient did not know her LMP, and her menstrual history was not significant. She had past history of vague dull pain abdomen. On per abdomen examination uterine height was 32 weeks, lie was transverse and fetal heart rate was regular (136 beats per minute). On per vaginal examination cervix was 1.5 cm dilated, uneffaced, posterior in position, presenting part could not be made out, pelvis was adequate. All the blood and urine investigations were within normal limit. Her last USG showed single live fetus of 35 weeks, in transverse lie with anencephaly, posterior placenta and adequate liquor.

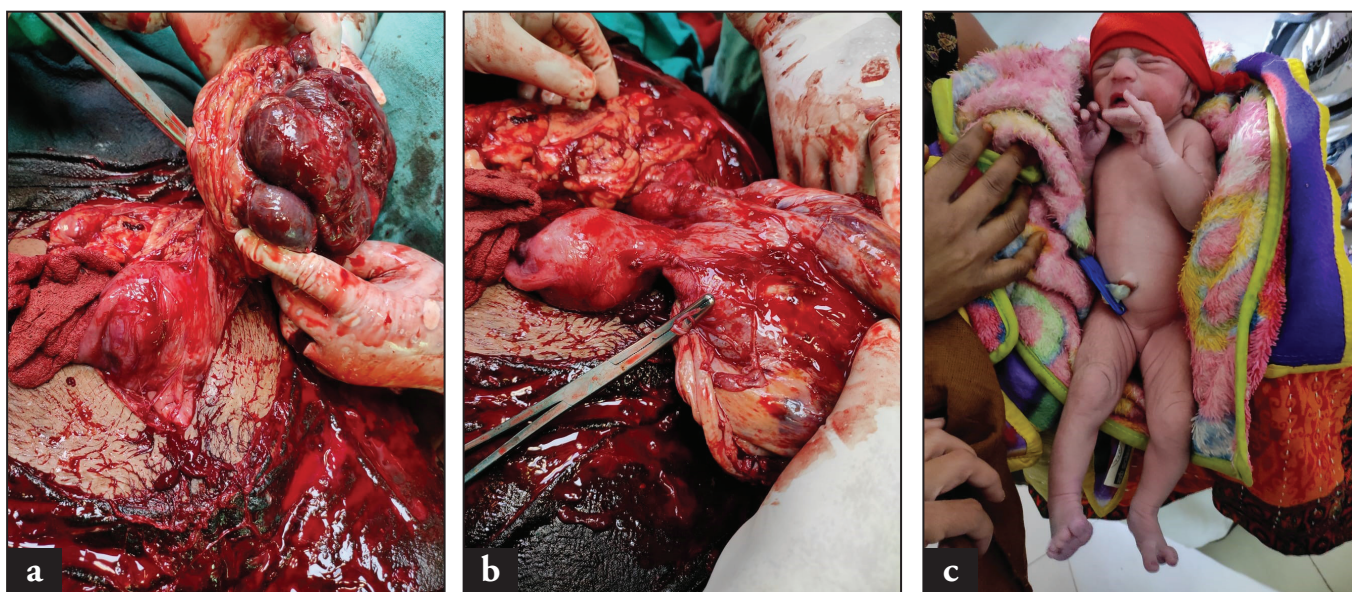
Decision of emergency LSCS was taken due to transverse lie, blood was sent for grouping and cross-matching before the patient was taken to operation theater with written and informed consent. Patient was given spinal anesthesia, and self-retaining catheter was inserted. After opening the abdomen, amniotic sac was seen protruding in peritoneal cavity. Membrane was ruptured and baby female child of 2.7 kg was delivered as breech and handed over to pediatrician. There was profuse hemorrhage just after delivery of baby.

On exploration, placenta was found adherent to omentum and intestine. Fortunately, senior gynecologist and senior surgeon were present and they immediately joined the case. Demand of blood products was sent to blood bank. Placenta was separated from omentum and intestine as much as possible by surgeon and hemostasis achieved by application of multiple hemostatic sutures. Pelvis was

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Pictures a and b showing placenta adhered to the omentum and intestines

Picture c showing a healthy female baby of 2.7 kg after caesarean.

explored, uterus was 6–8 weeks size and intact, and placenta was originating from the left-sided cornua. Right side tube and both ovaries were healthy. So secondary abdominal pregnancy was diagnosed. Placenta was removed after ligating the cornual stump and left sided salpingectomy was performed. Intra-operative 1 unit packed cell was transfused. Drain was inserted and abdomen was closed. Post-operatively 1 unit packed cell was transfused. Patient withstood the procedure well. Patient and healthy baby were discharged at day 8 postoperatively.

## Discussion

Beyond second trimester an extra-uterine abdominal pregnancy with a viable fetus is an extremely rare condition. The two types of extra-uterine abdominal pregnancy are: Primary abdominal pregnancy which refers to pregnancy where implantation of the fertilized ovum occurs directly in the abdominal cavity and the fallopian tubes and ovaries are intact where as secondary abdominal pregnancy occurs following an extra-uterine tubal pregnancy that ruptures or aborts and gets re-implanted within the abdomen.

In extra-uterine abdominal pregnancy patients typically complaints of persistent abdominal and/or gastrointestinal symptoms. Diagnosis of this condition is frequently missed, with only a few cases are diagnosed during the antenatal period. In our case, diagnosis was missed and misinterpreted as intrauterine pregnancy. Ultrasonography remains the main method for the

diagnosis of extra-uterine pregnancy. It usually shows no uterine wall surrounding the fetus, fetal parts that are very close to the abdominal wall, abnormal lie and no or decreased amniotic fluid between the placenta and the fetus. Magnetic resonance imaging and serum a-fetoprotein have been used to diagnose abdominal pregnancy.<sup>4,5</sup> These tests were not performed in our patient as the diagnosis was not suspected.

Typical deformities have been observed in the extra-uterine abdominal pregnancy babies including limb defects, facial and cranial asymmetry, joint abnormalities and central nervous malformation. In this case it was seen that the baby was protected by the surrounding amniotic fluid and sac which could explain the absence of deformities in the baby and the massive bleeding that occurred from detached part of placenta was due to the adherence of the placenta to the abdominal viscera which, unlike the uterus, does not contract.

It has been observed that, it may be preferable to leave the placenta in place and allow its natural regression unless the placenta can be easily tied off or removed. There was significant bleeding from some detached portions of the placenta that prompted removal of these portions to secure hemostasis in this case. Maternal deaths associated with abdominal pregnancy result from hemorrhage after inadvertent dislodgment of the placenta. It is recommended to leave the placenta in

situ and follow-up with USG and human chorionic gonadotropin levels.

In abdominal pregnancy it is very rare to have a resultant healthy newborn. Early rupture of tubal ectopic pregnancy is the usual antecedent of a secondary abdominal pregnancy as reported by Shanbhag et al.<sup>6</sup> whereas advance secondary abdominal pregnancy have been reported by Desai et al<sup>7</sup> and also till term by Farhet et al.<sup>8</sup>

In advanced pregnancy diagnosis of the condition can be difficult. The routine means of diagnosis are high level of suspicion, careful clinical and ultrasound examinations though CT scan and MRI can be useful. Bleeding is the single most important life threatening complication for the mother while fetal malformation is one of the numerous challenges that can confront the newborn.

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# A Case of Unicornuate Uterus with Hematometra in Rudimentary Horn (Canalised and Non Communicating) Presenting as Endometriosis

Priyanka Gahlout<sup>1</sup>, Chanchal<sup>2</sup>, Abha Rani Sinha<sup>3</sup>

### Abstract

**Background:** Anomalies of uterus may be acquired or congenital and present a diagnostic challenge due to various morphological presentations. They can present as abnormalities of menstrual cycle, pelvic pain, infertility or complications in pregnancy. Prevalence of mullerian anomalies is 0.5- 6%. According to American fertility society,1988; the most common mullerian anomaly is unicornuate uterus with a non communicating rudimentary horn of variable development (Type II b). Arrested development of one of the mullerian ducts results in unicornuate uterus. If the non communicating horn contains functional endometrium, the woman presents with abdominal pain with or without mass. The symptoms mimics that of endometriosis. Here we present a case of unicornuate uterus with hematometra in non communicating rudimentary horn, presenting as endometriosis.<sup>1</sup>

**Keywords:** Unicornuate, rudimentary horn, non communicating , hematometra, endometriosis.

### Case Study

A 25 year old lady came with a complain of chronic pain in lower abdomen since 2&1/2 years,not relieved with oral analgesics and complain of dyspareunia.

She had history of taking tablet Dinogest in past for 3 months, but her pain was not relieved. The pain had aggravated since past 15 days for which she was taking injection Diclofenac.

Her Last menstrual period was on 27/06/2022, with previous regular cycles of 22-25 days interval and 5 days duration.

She was P2A2L2. In her first pregnancy she had a spontaneous abortion of 5 month period of gestation. In 2nd pregnancy she delivered a preterm male child of 7 month gestational age. In her 3rd pregnancy she delivered a term male child vaginally. She had a medical abortion at 2 month gestation in her last pregnancy following which she had bilateral tube ligation 1 year back.

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- Corresponding author : Priyanka Gahlout



On examination, per abdomen was soft. On per vaginal examination the uterus was bulky and anteverted and had a tender mass in the anterior fornix.

She had imaging evaluation of uterus and adnexa, her USG Scan revealed a hypoechoic mass measuring 4.1cm×3.5cm adjacent to fundus of uterus, suggestive of subserous fibroid. She also had a left ovarian cyst 3.9cmx 2.5cm with septations. Her right ovary was not visualized on scan.

Her blood investigations were within normal limits, viral markers negative, but her Ca125 level was 61.46 IU/ml. She was planned for laparotomy in view of endometriosis. On opening the abdomen, a diagnosis of unicornuate uterus with a rudimentary horn was made. As her family was complete Total abdominal hysterectomy and left sided salpingoopherectomy was done. On section of the rudimentary horn was found to be canalised and with hematometra .

## Discussion

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Congenital Uterine anomalies result from arrest of fusion of mullerian ducts in the fetal life. Failure of mullerian ducts between 6th and 9th week lead to uterine aplasia, failure to fuse between 10th and 13th week cause duplication ( uterine didelphys, bicornuate uterus), and failure of reabsorption of midline septum between 14th and 18th week leads to septate uterus. Arrested development or incomplete development of one of the mullerian ducts results in a unicornuate uterus. Women with a unicornuate uterus have an increased incidence of infertility, endometriosis and dysmenorrhea.<sup>1-3</sup>

They have a high risk of preterm labour (40%) and about half of them are lost in the first two trimesters. Akar reported live birth rate of 29% in women with unicornuate uterus.<sup>5</sup>

The uterine malformations are classified according to the embryology mechanism leading to their formation. Various classifications schemes exist, but most common was proposed by Buttram<sup>6</sup> and adapted on 1988 by

the American Fertility society ( AFS), now American Society of Reproductive Medicine. Our patient had Type II b (AFS) uterine malformation.

## Diagnosis and Management

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On physical examination, the uterus is usually markedly deviated on the left or right , reflecting the development failure of one of the mullerian ducts.

Diagnostic investigations are difficult in developing countries. The Unicornuate uterus can be diagnosed by HSG, ultrasonography or MRI. Rudimentary horn in association with unicornuate uterus can be better diagnosed by 2D sonography (presence of a horn tissue between the normal hemicavity and the contralateral ovary), but 3D sonography or MRI seem to be more precise.<sup>1-5</sup>

Usually patients with uterine malformations present with obstetrics complications like mid trimester abortion, preterm labour, malpresentations, ectopic pregnancy in rudimentary horn. In our case also, the patient had a midtrimester abortion and preterm labour, but she remained undiagnosed. She had an unusual presentation mimicking endometriosis for which she was further evaluated and during laparotomy, the diagnosis of unicornuate uterus with non communicating rudimentary horn was made.

Regarding management, resection of non communicating horn is recommended. In our case the patient completed her family and had complain of chronic pelvic pain not relieved by medications, thus total abdominal hysterectomy with left sided salpingoopherectomy was done.

## Conclusion

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Patients with non communicating rudimentary horn of unicornuate uterus can present with chronic pain abdomen because of accumulation of menstrual blood due to presence of active endometrium. When patient comes with lower abdominal pain with pelvic mass, hematometra with congenital malformation of uterus can be considered as one of the differential diagnosis.



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# Angioleiomyoma Uterus — A Rare Tumor

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### Introduction

Angioleiomyoma (AL) is a benign tumor of mesenchymal origin containing thick walled vessels. It is more common in middle aged women.<sup>1</sup> It typically occurs as a solitary subcutaneous painful nodule and is more common in the lower extremities.<sup>2</sup> The uterus is extremely rare site of Angioleiomyoma. The etiopathogenesis of uterine Angioleiomyoma is not well established.<sup>3</sup>

### Case Report

A 37-year-old nulliparous woman presented to the OPD of IMS and SUM Hospital with complaints of heaviness and gradual swelling of abdomen over a period of two months duration along with history of heavy menstrual bleeding of six months duration. Her cycles were of 35 days duration associated with heavy menstrual flow and mild abdominal discomfort. She also complained of incomplete evacuation of bladder and increased frequency of micturition over the last 3 months. She had normal bowel habits, without

any comorbidities. She hails from a family of middle socio-economic strata with no history of any kind of addiction.

During physical examination she was found to be average built with a BMI of 23 kg/m<sup>2</sup>. She was pale without icterus, clubbing, and lymphadenopathy. No thyromegaly was observed and her breast examination revealed no abnormalities. Respiratory and CVS examinations revealed no obvious clinical abnormality and were essentially normal. Her abdominal examination revealed a mid-line, nontender, cystic mass of 36 weeks size with smooth surface, regular margin and the mass appeared to be originating from the pelvis. On percussion there was a dull note over the mass and shifting dullness was absent and on auscultation soufflé was heard. Pelvic examination revealed the mass to be continuous with the uterus. Both the fornices were filled with the mass. Ultrasonography showed a huge abdomino-pelvic cystic mass lesion of size (22x30cms) with eccentric wall thickening and increased vascularity. (RI 0.43) Ovaries could not be visualised separately. Ovarian Tumor markers HE 4, CA 125 and ROMA score were elevated. CECT revealed (Fig 1) a bulky uterus with multiple myomas and adenomyotic changes with large complex solid cystic lesion (21.2 X 29.4 X 31.8 cms) arising from anterior uterine wall with features of extension. Suggested possible diagnosis were (a) Adenomyosis with large Endometriotic Cyst or (b) Sarcomatous transformation of a large anterior wall uterine myoma.

Laparotomy was planned in view of Uterine Sarcoma/Ovarian tumor. Case along with the prognosis was explained to the patient and her family members in

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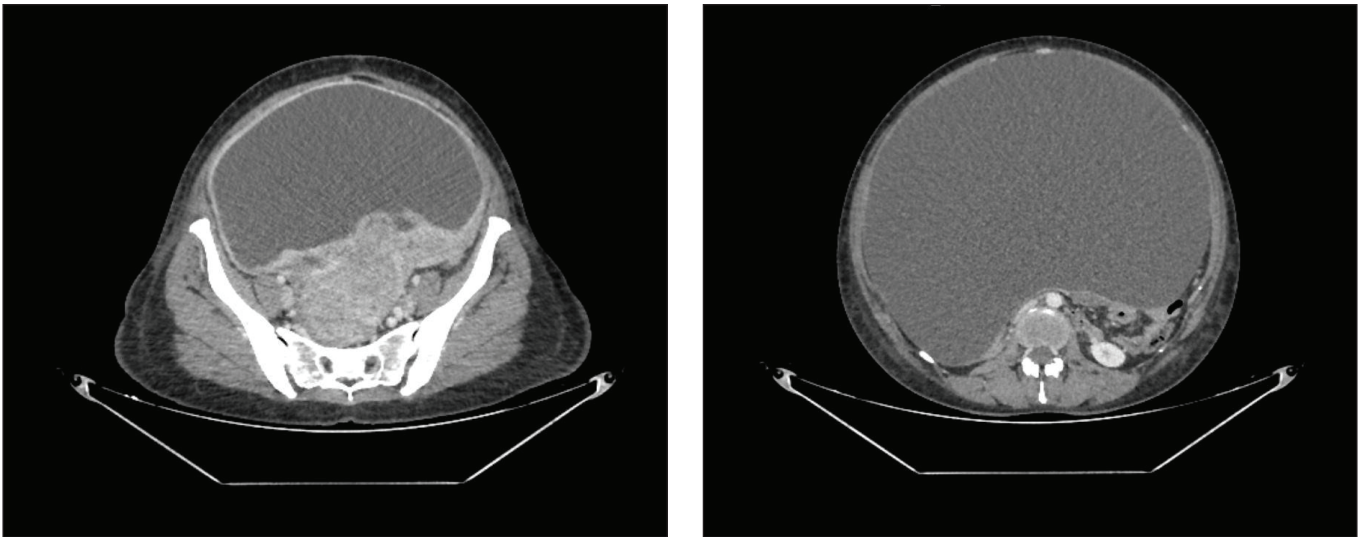


Fig.1: Contrast enhanced computed tomography (CECT) showing large complex solid cystic mass

both situations. Consent obtained for Hysterectomy and pelvic lymph node sampling. On laparotomy a huge cystic mass with hemorrhagic fluid was detected after opening the peritoneum of extended midline vertical incision. Mass found to be arising from the uterus. Peritoneal cavity was devoid of free fluid. Approx 10 litres of hemorrhagic fluid suctioned out of the mass (Fig-2). Total abdominal hysterectomy with bilateral salpingo-oophorectomy was done. All abdominal organs along with omentum and paracolic gutter were explored for any tumor deposit or any abnormality which was not detected. All tissue and aspirated fluid were sent for histopathological study.

On gross examination, the uterus was asymmetrically enlarged with multiple intramural fibroids noted with the largest measuring 3.5x2.5x2 cms. A large solid cystic mass of size 30x17x7cms arising from the

fundus of the uterus was noted. The outer surface was firm and whitish with areas of congestion. The cut surface revealed whitish to tan appearance with no hemorrhagic or necrotic areas in between. The Histopathological examination revealed angioleiomyoma (Vascular Leiomyoma) of the uterus (Fig-3).

Post-operative period was uneventful and the patient was discharged on the seventh postoperative day with advice of regular follow-up.

### Discussion

Angioleiomyoma is also known as Vascular leiomyoma. Angioleiomyoma is classified into 3 types histologically: Capillary or solid, Cavernous and venous. The index case of AL of Uterus was first reported in 2003 by Hsieh et al. She had menorrhagia

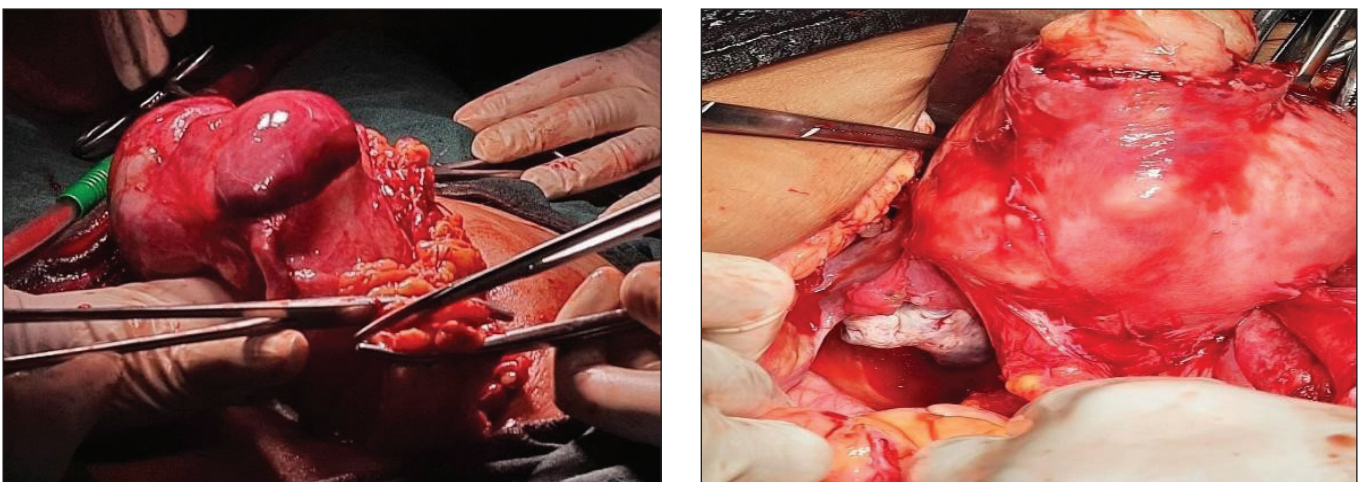


Fig. 2: Gross photographs showing a large mass arising from the uterus

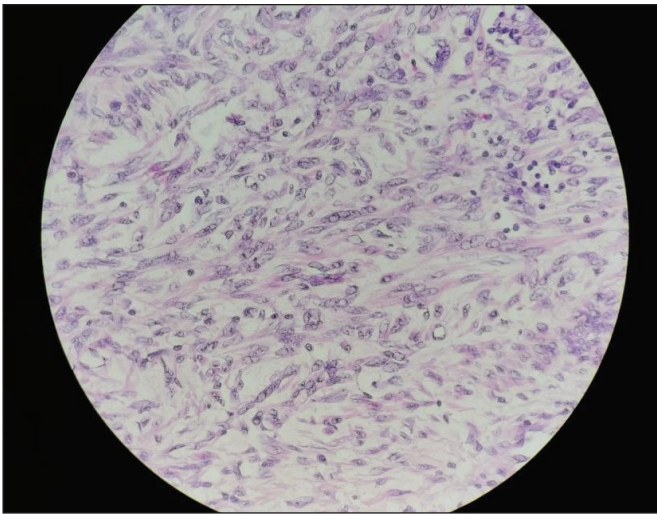


Fig. 3: Histopathological findings showing tumour cells arranged in short and dense fascicles whorled with intervening myxoid areas. Many moderate to small sized vessels are seen within the tumour.

and severe anaemia.<sup>5</sup> Our case was also presented with menorrhagia, abdominal mass and pain in the abdomen. Menorrhagia can possibly be because of dysregulation of different growth factors and/or because of receptors, which regulate the process of

angiogenesis. Pain may be attributed to intratumoral hemorrhage.

In previously reported cases, patients have presented with symptoms of abnormal uterine bleeding,<sup>4,5</sup> palpable abdominal mass,<sup>5</sup> pain in abdomen<sup>6</sup> and pressure symptoms.<sup>7</sup>

As proposed by Hsieh et al, typical CT findings of AL are a multilobulated mass with solid and laminated configuration.<sup>5</sup>

The treatment of ALs both uterine and extra uterine, is complete surgical excision of the tumor. In cases involving the uterus either Hysterectomy or excision of the tumor may be performed. Outcome of both the treatment modalities are good.

## Conclusion

Pre-operative diagnosis of AL is rarely possible. It is usually diagnosed by histopathology. Though extremely rare AL should be kept in Differential Diagnosis of Uterine or adnexal mass. As suggested by Sahu et al<sup>2</sup> they should be included in WHO classification of tumors of female genital tract as a benign leiomyoma variant.<sup>8</sup>

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