

A CASE OF CAESAREAN SCAR ECTOPIC PREGNANCY

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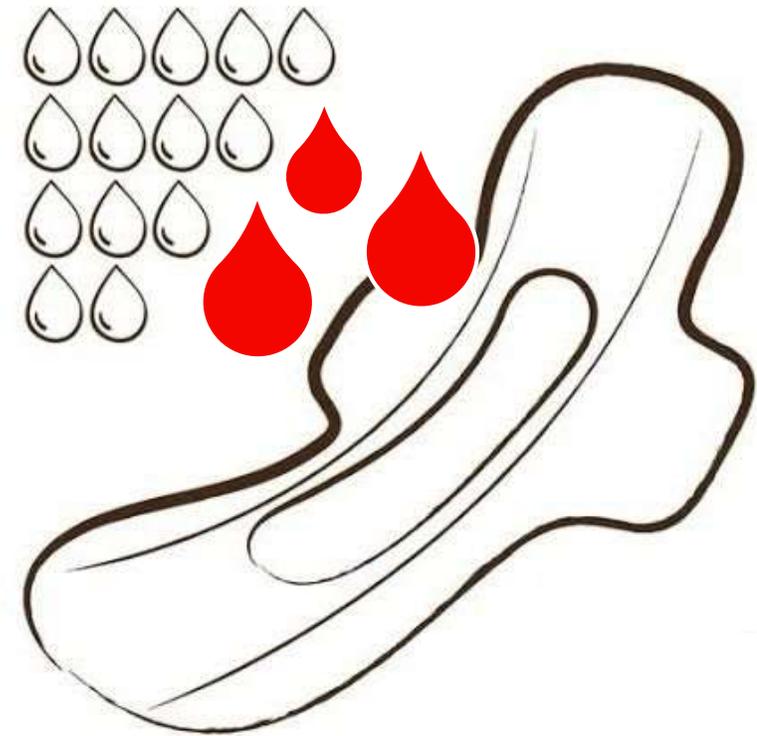
History:

- Mrs AB age 22 yrs, wife of Mr C, home maker, coming from Alandi Pune, belonging to middle social economic class.
- G3P2L2 with previous 2 LSCS came to our labour room at 2 am on 23/08/23.
- She came with h/o 2 months of amenorrhoea.
- abdominal pain since 8 hours
- per vaginal spotting since 6 hours
- Her urine pregnancy test was positive.
- Her ultrasonography report s/o cystic lesion in the anterior lower uterine segment with thinning of myometrium in this region, s/o live caesarean scar ectopic pregnancy.



History of presenting illness:

- She was apparently alright one day before –
- She developed pain in abdomen since 8 hours :-
 - which increased in intensity with time
 - hypogastric region.
 - Dull & aching.
 - Non radiating.
 - No aggravating / relieving factors.
- Per vaginal spotting since 6 hours :-
 - Dark red.
 - Half pad stained
 - 15-20 ml.



Menstrual history:

- Menarche – at 13 years of age
- LMP- 23/06/23 (GABD – 8 weeks and 4 days)
- P/M/H- Regular cycles, 28-30 days, 3-4 pads/ day, average flow.

Obstetric history:

- Married since 5 years
- 1st – FT LSCS i/v/o PROM with CPD /FCH/5yrs/ A&W
- 2nd - FT LSCS i/v/o previous LSCS /MCH/2yrs//A&W
- 3rd — present pregnancy spontaneous conception.



Past history:

- Patient was not a known case of any specific disease or disorder.

Personal history:

- Patient had good appetite
- Patient had regular bowel and bladder habits.
- No h/o addiction or h/o of allergy to any drug.
- No h/o use of contraception.

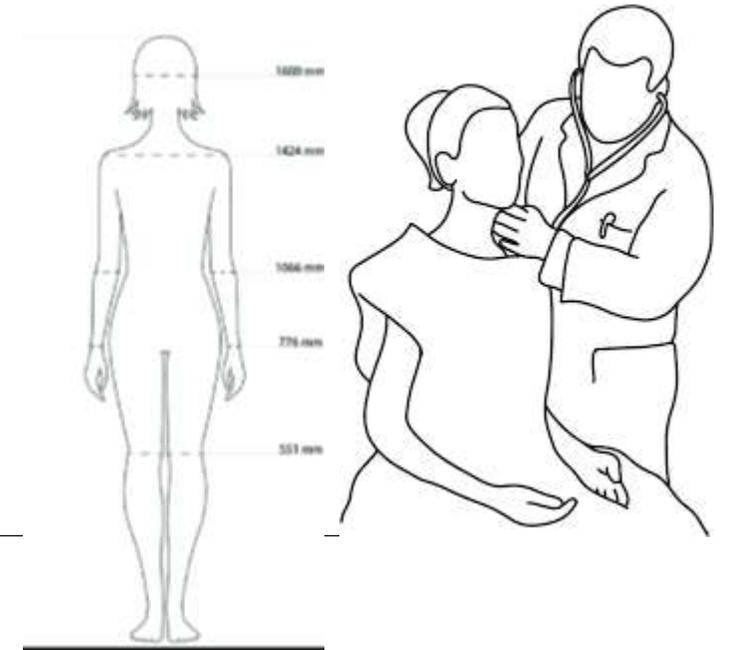
Family history:

- Not significant



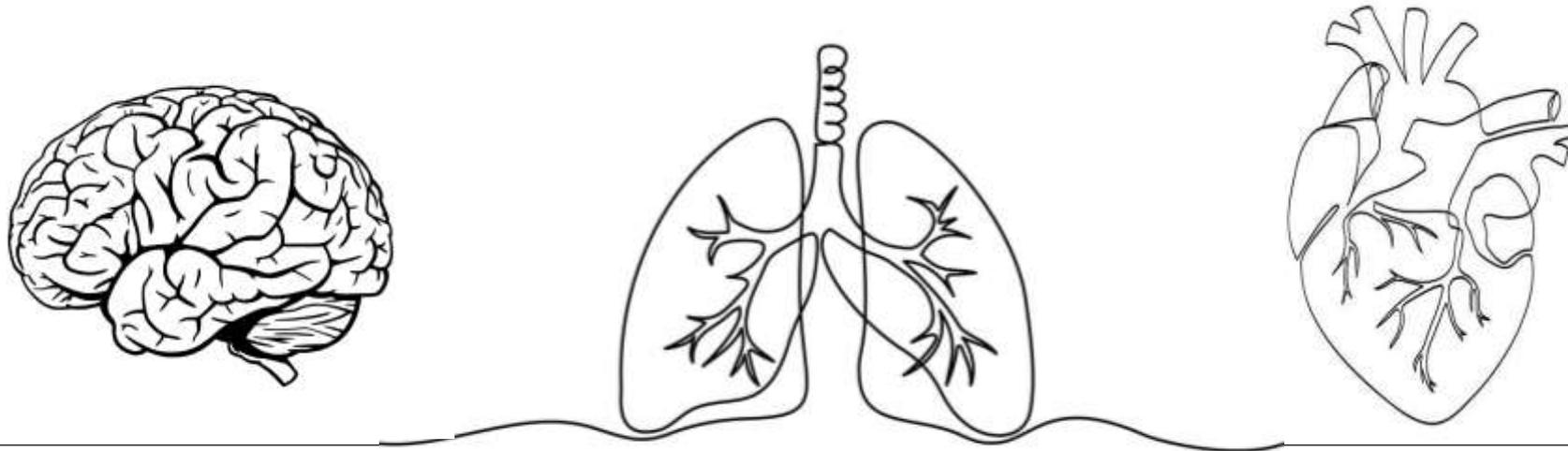
General examination:

- Patient was well built and well nourished, conscious, co-operative, well oriented to time place and person.
- Patient was afebrile. Vitals: Pulse- 100 bpm. BP- 130/88 mm Hg. RR-20/minute
- No pallor, icterus or bilateral pedal edema, no clubbing , no cyanosis, no lymphadenopathy.
- Breast examination - normal.
- Height 148 cms, weight 56 kgs BMI- 25.6 kg/m²



Systemic examination:

- RS: B/L air entry equal, normal vesicular breath sounds present in all lung fields.
- CVS: S1, S2 heard, no murmurs were present.
- CNS: conscious and oriented with time place and person.



Per Abdominal examination:

➤ **INSPECTION:**

- Abdomen was normal in shape.
- All quadrants moved equally with respiration.
- Umbilicus central and inverted.
- Skin scar of Pfannensteil's incision was seen.

➤ **PALPATION:**

- Abdomen was soft and non-tender.

➤ **PERCUSSION:**

- Tympanic note all over abdomen.
- No shifting dullness or fluid thrill present.



➤ **AUSCULTATION:**

- Normal bowel sounds heard

➤ **LOCAL EXAMINATION:**

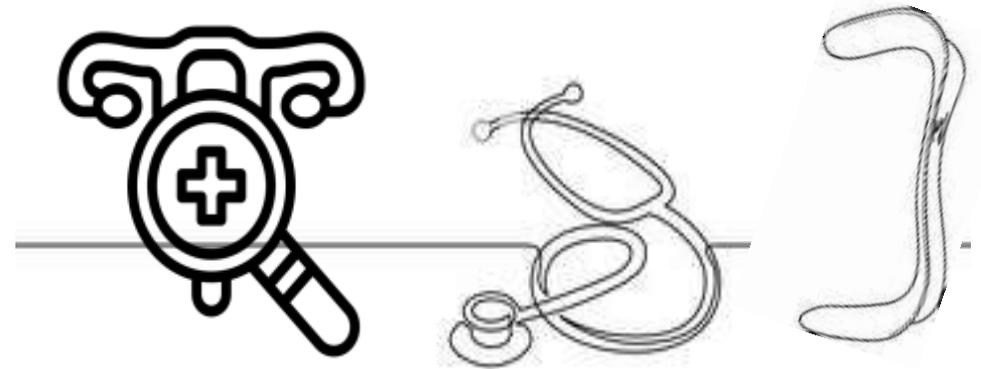
- External genitalia- healthy

➤ **PER SPECULUM EXAMINATION:**

- Dark red blood was seen in posterior fornix.

➤ **GENTLE PER VAGINAL EXAMINATION**

- Uterus size corresponding to 6 weeks pregnancy and anteverted
- No cervical motion tenderness present.
- B/l fornices free non tender.



DIAGNOSIS

**3rd GRAVIDA WITH PREVIOUS 2 LSCS
WITH 8 weeks and 4 days GESTATION
WITH CAESAREAN SCAR ECTOPIC
PREGNANCY**

Management:

23/08/23- D1 of admission/regime

- She was admitted in the emergency labour ward at 2am. Her biochemical, hematological and serological investigations were sent.
 - **Beta hcg done 2 days prior to admission i.e on 21/08/23 - 9493 mIU/ml**
 - 1 pint PCV was booked/reserved. High risk condition of the patient was explained to the patient and relatives.
 - Written informed consent for admission was taken. Patient was counselled regarding possible SICU admission for excessive bleeding and possible uterine scar rupture and need for hysterectomy.
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- Beta hcg was repeated on the day of admission - 27,133 mIU/ml.
 - A repeat Obstetric ultrasound was done at our institute that was suggestive of **single live caesarean scar ectopic pregnancy** corresponding to 7wks 6 days with cystic lesion in **anterior lower uterine segment at scar site** with **thinning of myometrium** in this region & **thick endometrium (ET thickness – 13.1mm)** – possibility of formation of caesarean scar pregnancy as suggested by sonologist and MRI was advised.
 - Patient was **explained** about the **different modes of management and consequences – medical and surgical and surgical –hysteroscopic surgical evacuation/ evacuation under USG guidance, laparoscopy- assisted operative hysteroscopy management, laparoscopic assistance with excision & repair of surgical scar.**
 - **Plan of management was also discussed with the patient explaining the risks of the condition and management-**
risk of massive bleeding , laparotomy and hysterectomy.
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- **We decided for medical management with systemic methotrexate & SOS surgical management. She consented for medical and surgical management.** Prior to treatment with MTX, the following evaluation was performed:
 - Medical fitness
 - Serum beta-human chorionic gonadotropin (hCG)
 - Transvaginal ultrasound
 - Blood type and screen
 - Complete blood count and renal (creatinine) and liver (alanine aminotransferase [ALT], aspartate aminotransferase [AST]) function tests
 - Patient was given 1st dose of injection methotrexate 50 mg intramuscularly on the day of admission at 6pm.
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24/8/23 – D2 of admission/regime

- Patients vitals were monitored and Inj leucovorin 5 mg (1st dose – 0.1 mg/kg) given intramuscularly (24 hours after the 1st dose of methotrexate) at 6pm.

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25/08/23 - D3 of admission/regime

- Prior to the next methotrexate dose laboratory investigations were sent again.
 - Beta hcg value raised – **38,383 mIU/ml (38 hours after giving 1st dose of methotrexate)**
 - **MRI pelvis** was done and the findings were suggestive of - **a smooth ovoid lesion arising from the myometrium of lower anterior uterine wall with a hypointense foci within- representing gestational sac with fetal pole. The **myometrium** in the area of its attachment appears **thinned out** in comparison to the rest of the uterus measuring approximately **2.3mm**. **No obvious flow voids/ increased vascularity around the region of myometrial attachment which was suggestive of caesarean scar pregnancy**.**
 - 2nd dose of injection methotrexate 50 mg was given intramuscularly at 6pm.
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26/08/23 – D4 of admission/regime

- USG OBS was done which was suggestive of **single live, caesarean scar ectopic pregnancy** corresponding to 6wks 4 days in **anterior part of lower uterine segment** within the myometrium , lower part of gestational sac is seen reaching up to the previous LSCS scar, There is overlying thinning of anterior myometrial tissue with maximum thickness of **2.3mm**, (clinically we concluded that myometrium was continuous and no defect was seen on surface side of the scar)
 - 4pm - **Tab mifepristone 200 micrograms** was given (46 hours after giving 1st dose of methotrexate).
 - Inj leucovorin (2nd dose) 5 mg was given intramuscularly at 6pm.
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27/08/23 – D5 of admission/regime

- **Beta hcg values raised – 42,685.02 mIU/ml. (4th value 5 days after 1st dose of methotrexate)**
 - Patient had one spike of fever at 6 pm (100.2 °F) (antibiotics were continued and paracetamol given) we withheld the methotrexate dose that day. Hemogram was sent –
 - Hb- 12.5 g/dl
 - TLC – 10,100/ μ L
 - PLC- 3,04,000/ μ L
 - Neutrophils – 88%
 - Absolute neutrophil count – 8888.
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28/8/23 – D6 of admission/regime

- Beta hcg decreased **36,696.15 mIU/ML (5th value – fall of 14.1%)**
 - USG obs was repeated which was s/o **single caesarean scar gestation with no fetal cardiac activity** in anterior part of LUS within the myometrium., lower part of gestational sac was seen reaching up to the previous LSCS scar. There is overlying thinning of **anterior myometrial tissue with max thickness of 2.3 mm.**
 - Repeat laboratory values – normal. Hemogram Hb-11.9 g/dl TLC – 6400 , Neutrophil – 80% and Absolute neutrophil count – 5120 and lymphocytes 18% .
 - Temperature monitoring was done. Patient did not have fever for 24 h hours.
 - 3rd dose of injection methotrexate 50 mg was given intramuscularly at 5pm followed by 3rd dose of Inj leucovorin 5 mg given intramuscularly at 10pm.
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29/08/23 – D7 of admission/regime

- Antibiotics continued and only clinical monitoring done . No investigations were done.
- No methotrexate or folinic acid was given.
- Radiological investigations were not done.

30/08/23 – D8 of admission/regime

- Beta hcg values decreased – **28,704.58mIU/ml. (21% fall from previous value)**
- 4th dose of methotrexate 50 mg was given intramuscularly at 6pm.

31/08/23- D9 of admission/regime

- Inj. Leucovorin 5mg was given intramuscularly at 6pm.
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Parameters	23/08/23 4AM	23/08/23 12pm	27/08/23	28/08/23	30/08/23 7am	30/08/23 3pm
Haemoglobin (gm/dl)	11.9	11.9	12.5	11.9	12	12.1
Total leukocyte count TLC (/ul)	11900	9760	10100	6400	7200	7500
PLATELETS (/ul)	299000	285000	304000	244000	244000	236000
Neutrophils (%)	82%	72%	88%	80%	57%	72%
Absolute neutrophil count	9758	7027	8888	5120	4101	5400

4/09/23 – D13 of admission/ regime

- Beta hcg decreased further – **7,768.18mIU/ml (73 % fall)**
 - USG obs repeated – findings were the same with no fetal cardiac activity present and myometrial thickness of 2.3mm.
 - Patient was discharged on request with promise to follow up as per our instructions.
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- **Patient was followed up on OPD basis-**

- **11/09/23** –She came for follow up in OPD a week after discharge with the same USG findings and **Beta hcg value decreased - 1072 mIU/ml (87% fall)**

2 weeks

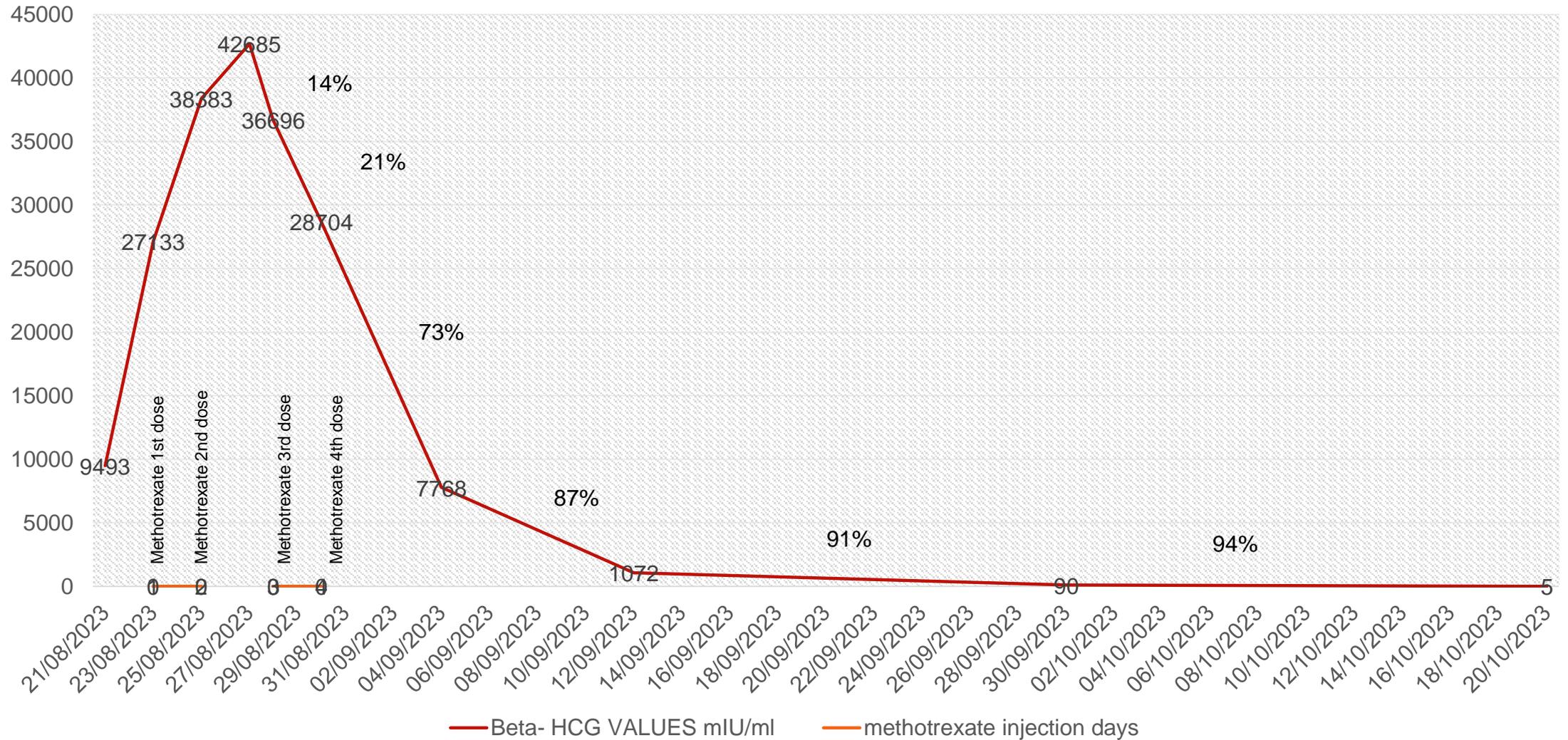
- **30/09/23-** **Beta hcg value further decreased – 90.7 mIU/ml (91% fall)**
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21/10/23

- USG PELVIS done suggestive of **mildly bulky uterus , previously mentioned gestational sac along scar of previous LSCS not seen now (resolved scar ectopic / complete abortion).**
- **All the lab investigations were within normal limits**

Beta hcg----- 5.18 mIU/ml -(60 days after the diagnosis)

Beta HCG levels





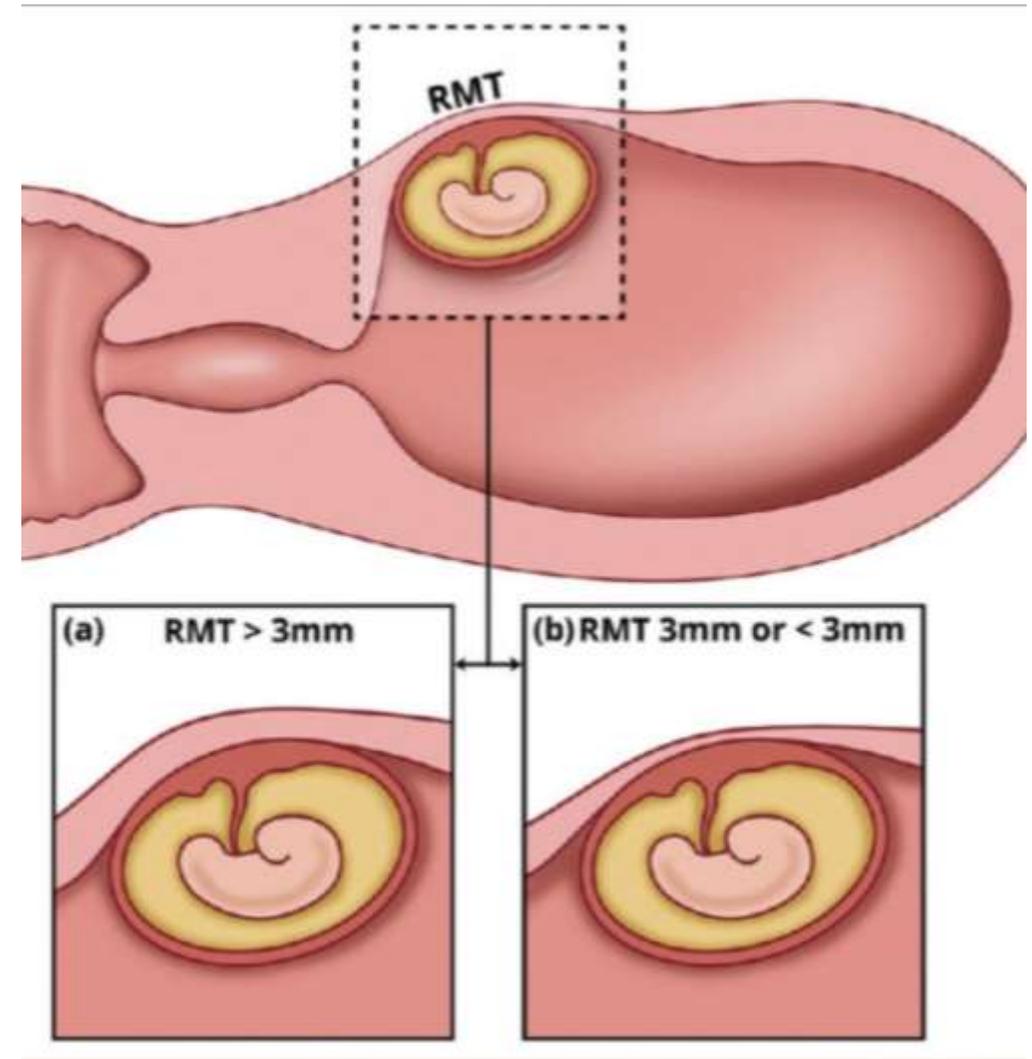
WHAT IS A CAESAREAN SCAR PREGNANCY?

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- The term caesarean section scar pregnancy refers to a **type of ectopic pregnancy** , where the **implantation of the gestational sac** completely or partially outside the uterine cavity **into the previous lower uterine segment caesarean section scar**.
 - Incidence of caesarean scar pregnancy is **1 in 2000** normal pregnancies.
 - Risk factors include **poor healing of previous caesarean section scar** described using various terms such as caesarean scar defect, pouch, isthmocele, diverticulum and niche.
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There are two main types of CSPs -

- **"On-the-scar" (type 1) or RMT >3mm** – Implantation of the CSP on the **well-healed scar** of a previous caesarean birth (also termed **"endogenous"** implantation).

- **"In-the-niche" (type 2) or RMT < 3mm** – Implantation of the CSP within the defect or "niche" of an **incompletely healed scar** (also termed "niche pregnancy," or **"exogenous"** implantation).



Pathogenesis:

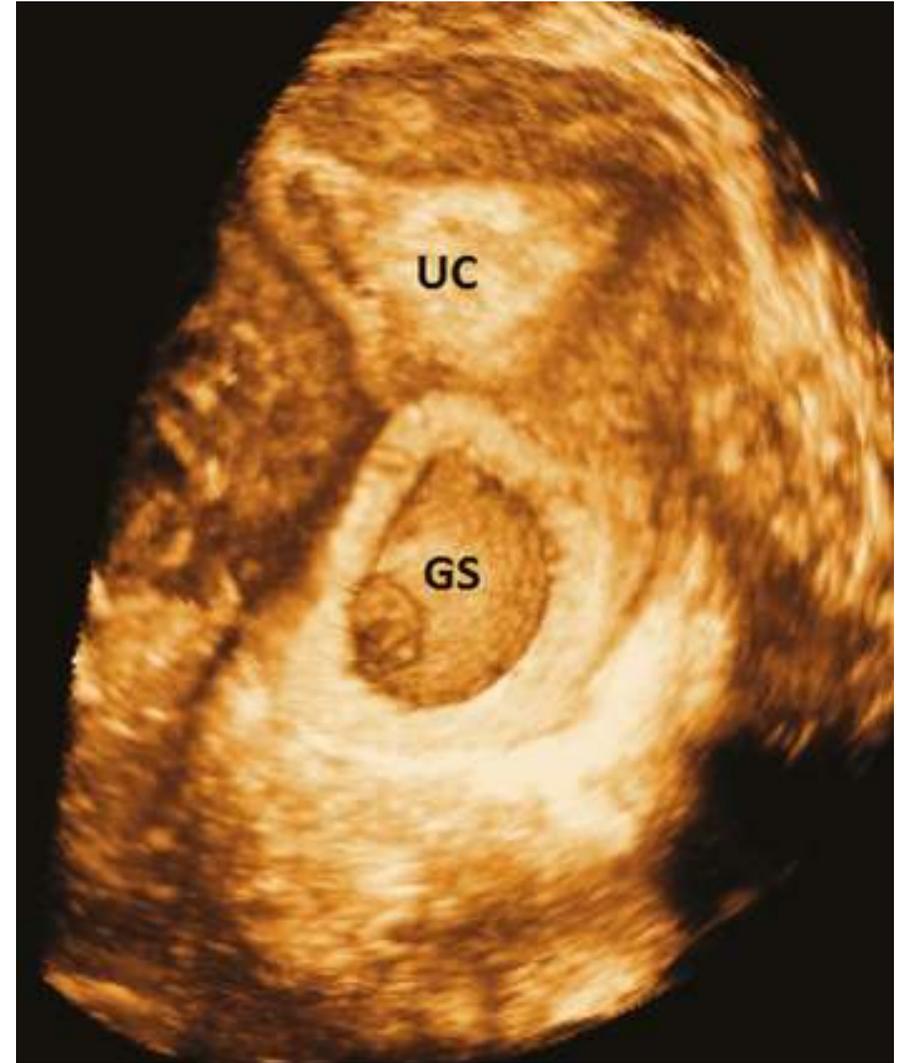
Various theories include –

- **the endogenous migration** of the embryo through a **wedge defect** in the lower uterine segment.

 - **Low oxygen tension of scar tissue** attracting implantation of the fertilized oocyte
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Role of Ultrasound & MRI:

- **Ultrasound is the initial imaging test of choice** for diagnosis of CSP with a **sensitivity of 86.4%** when evaluating a first trimester pregnancy by transvaginal ultrasound.
- The **superior soft tissue characterization and anatomical information provided by MRI** allows patients and clinicians to consider conservative management. MRI can accurately detect the **exact location of pregnancy, thus confirming the diagnosis.**
- **3D ultrasound** can also be done to assess the **degree of myometrial involvement** in CS ectopic pregnancies and to see whether surgical evacuation is likely to be feasible or not. The route of surgical management can be established using 3D ultrasound.



Treatment:

Hemodynamically unstable patients — A patient with haemorrhage and existing or impending hemodynamic instability requires immediate surgical intervention

- **Operative resection** (eg, wedge resection) of the pregnancy can be performed via laparoscopy, hysteroscopy, or (less commonly) laparotomy; laparoscopic-assisted operative hysteroscopic management.
 - **Suction aspiration** (ie, suction D&C) is typically performed for patients in the early first trimester (five to seven weeks of gestation) with use of a transcervical balloon catheter if heavy bleeding occurs.
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- **Gravid hysterectomy** should only be performed in patients in whom future childbearing is not desired or in those with **life-threatening haemorrhage**, and may be the preferred approach for patients with **second-trimester CSPs**. Gravid hysterectomy may be performed with or without prior UAE.
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-In hemodynamically stable patients - management options include termination of pregnancy (medical or surgical) . Some methods of medical management include:

- **Intragestational injection of MTX – Ultrasound-guided** (transabdominal or transvaginal) intragestational injection of MTX is an effective treatment for CSP.
 - **Intragestational injection of KCl – Ultrasound-guided** (transabdominal or transvaginal) KCl injection (5 mEq into the gestational sac) into a CSP with embryonic/foetal cardiac activity.
 - **Transcervical insertion of balloon catheters** – For patients with a **CSP $\geq 6 0/7$ and ≤ 8** weeks of gestation, balloon catheters are an **efficient, safe, well-tolerated, and minimally invasive** treatment option. These catheters can effectively stop foetal cardiac activity and prevent possible bleeding complications (by applying direct pressure to the pregnancy),
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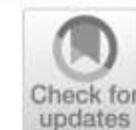
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- **UAE – UAE can be used alone or in combination with other therapies** (eg, suction aspiration, MTX, operative hysteroscopy). UAE may be superior to systemic MTX as an adjunctive treatment to suction curettage. In addition, shorter treatment intervals between UAE and suction aspiration appear to have more favourable outcomes.

 - **Systemic MTX –Systemic MTX can be used as an adjunct to all the other medical therapies.** Systemic MTX followed by D&C or surgical (ie, hysteroscopic, laparoscopic) excision was associated with resolution of the pregnancy in 82 and 87 percent of patients, respectively. **MTX if typically administered seven days prior to the surgical procedure resulted in the reduction of blood flow around the scar on Doppler examination and a decline in serum hcg concentrations.**
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CASE REPORT

Open Access

Cesarean scar pregnancy treatment: a case series



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Table 1 Patients' demographic, clinical characteristics, and outcomes

Characteristics	Case 1	Case 2	Case 3	Case 4
Age (years)	32	34	29	33
Previous cesarean section	Yes	Yes	Yes	Yes
History of curettage	No	No	Yes	No
Gestational age	6 weeks	6 weeks	6 weeks	5 weeks and 5 days
Size of the sac (mm)	10	14	14	11
Initial β -hCG (IU/L)	7000	19,000	11,000	3546
Primary treatment	Systemic MTX	Systemic MTX	Systemic MTX	Systemic MTX
β -hCG level 4 days after treatment (IU/L)	4900	29,000	10,000	4800
Second treatment	No	Yes	No	Yes
β -hCG level 4 days after second treatment (IU/L)	–	32,000	–	6500
Time to reach negative β -hCG	4 weeks	9 weeks	6 weeks	5 weeks

MTX Methotrexate, β -hCG Beta-human chorionic gonadotropin

CONCLUSION:

- Scar ectopic pregnancy is a dangerous and complex disorder with increasing occurrence in recent years with increasing number of C-sections worldwide.
 - Fortunately the use of first trimester ultrasound imaging has led to a significant number of these pregnancies being diagnosed and managed early.
 - Uterine scar ectopic pregnancies pose a diagnostic challenge.
 - It is important for clinicians and radiologists managing women with risk factors for scar ectopic pregnancy to maintain a high index of suspicion during imaging and follow up.
 - Failure to diagnose and initiate prompt management may lead to uterine rupture, massive haemorrhage and maternal death.
 - Treatment is highly individualized, depending on the case.
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With timely help from radiology department and CCL, it was possible for us to manage this high risk and challenging case with medical management successfully in our hospital.

Thank
you



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