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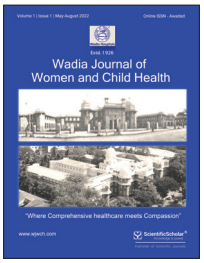

Case Report

Cesarean scar ectopic pregnancy - Case report

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ABSTRACT

Cesarean scar (C scar) ectopic pregnancy is complex pathological condition and occasionally can be life-threatening due to complications. The rise in the incidence is due to the rise in cesarean and early pregnancy sonography. For proper diagnosis, transvaginal sonography with color Doppler is far superior. Multidisciplinary approach with counseling is needed to individualize treatment as there are various modalities of management. This case report is of C scar ectopic pregnancy referred for further management. After reconfirming the diagnosis, systemic medical therapy was given. Following rise of beta-human chorionic gonadotropin (beta HCG), intralesional instillation of methotrexate was done. Follow-up ultrasonography revealed no fetal pole without any vascularity and declining beta-HCG. However, after 7 weeks, empty sac was still present, and hence, dilatation with evacuation was done. Early gestational termination is preferable with disruption of trophoblastic invasion, before surgical intervention to avoid complications.

Keywords: Scar ectopic pregnancy, Beta HCG, TVS – trans vaginal sonography

INTRODUCTION

Gestational sac when implanted fully or partially within scar of previous cesarean section (C-section) is known as cesarean scar ectopic pregnancy (CSEP). It is a complex pathological condition and at times can be life-threatening due to complications. The increasing incidence is due to the rise in C-section and widespread use of sonography in early pregnancy. Prompt diagnosis is needed to reduce morbidity. There are various modalities of surgical and medical treatment; however, there is no definite protocol as the forms of treatment is still evolving.

CASE REPORT

Mrs X, with 5 weeks of amenorrhea was referred to us for termination of pregnancy. She had a 3 year old male child who was born by c-section. Transvaginal sonography (TVS) showed presence of scar ectopic pregnancy of 5.5 weeks due to which she was referred to us, a tertiary care center. A repeat ultrasonography (USG) confirmed the presence of scar ectopic pregnancy of 5.6 weeks with increased vascularity with fetal pole, no cardiac activity, and normal residual myometrial thickness of 5 mm. Serum beta-human chorionic gonadotropin (HCG) on admission was 13,910.14 mIU/mL. Other blood investigations were within normal limits. Inj Methotrexate 75 mg (50 mg/body weight) was given intramuscularly. Repeat serum beta-HCG next day was 17,588 mIU. Hence, USG-guided instillation of methotrexate (1 mL i.e 25 mg)

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was done in gestational sac [Figure 1]. She was discharged after 24 h and was advised to follow up after 7 days with a repeat testing of beta-HCG levels. At her first follow up, USG showed a fetal pole without any evidence of cardiac activity with no vascularity. In the following week, serum beta-HCG levels was in decreasing trend 8647mIu/mL and 4286 mIU/mL respectively. The patient had bleeding per vaginum, for 4 days after 3 weeks of this intragestational sac injection of methotrexate, which she presumed to be the onset of periods and did not follow up. But 5 weeks later, she followed up assuming it to be missed periods again. Another USG showed evidence of collapsed empty gestational sac and repeat serum beta-HCG level was high at 521 mIU/mL [Figure 2].

Hence, dilatation and evacuation of uterine cavity was done under USG guidance. Following this procedure, she has had regular menstrual cycles.

DISCUSSION

The increasing incidence of cesearean scar ectopic pregnancy is due to the rise in C-section and widespread use of USG early on in pregnancy. For good USG diagnosis, TVS with good resolution equipment is necessary. USG in the early weeks of pregnancy has created greater awareness. Accurate diagnosis is necessary for successful preservation of uterus. The incidence of CSEP is 1 in 1800–2500 of all previous C-sections and 6% of all ectopic pregnancies.

Figure 1: Ultrasonography guided intra-lesion instillation of methotraxate.

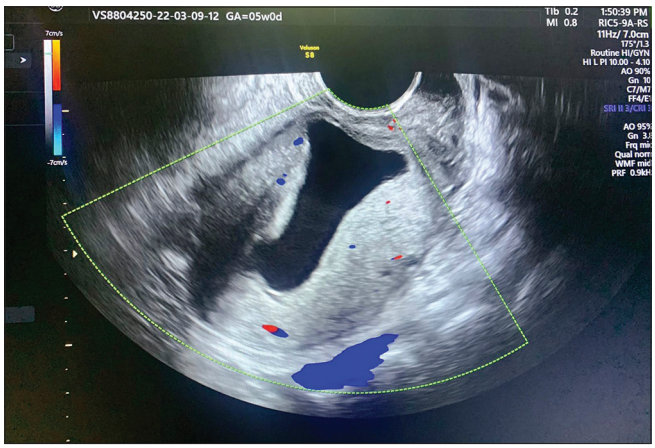

Figure 2: Collapsed empty gestational sac.

In patients with previous C-section, blastocyst gets implanted into areas of incomplete healing of the C-section scar. Uterine closure technique, single or double layer, has no effect. There is no clarity on number of previous C-sections or time interval between C-sections and subsequent pregnancy in causation. It has been reported in spontaneous as well as assisted reproductive techniques of pregnancy.

There are 2 types of CSEP. Type 1 – endogenic and Type 2 – exogenic where it infiltrates and causes uterine rupture or may invade into bladder. It needs to be differentiated from placenta accrete/increta where pregnancy is intrauterine and trophoblasts invades into the myometrium. In CSEP, gestation is separated from endometrial cavity and is surrounded by myometrium and scar tissue.

Patients usually have no symptoms or have pain during bleeding per vaginum or present with of amenorrhea. Mild-to-moderate tenderness in lower abdomen may be present, but high degree of suspicion can lead to diagnosis.

RCOG guidelines[1] for TVS diagnosis states empty uterine cavity with bright hyperechoic endometrial stripe, empty cervical canal, and presence of intrauterine gestational sac in anterior part of uterine isthmus, at presumed site of C-section could be a CSEP. There may be absent or thin myometrium of less than 5 mm between bladder and G sac with evidence of prominent circulation on color Doppler. Additional features on USG like "Cross over sign" stating relationship between gestational sac – C scar – anterior uterine wall is seen.

On sagittal view taking straight line endometrial cavity from fundus until internal Os and placement of G sac with superior inferior (SI) diameter and then divide into Groups [Figure 3]:

- Normal G sac – away from scar/close to fundus
- 1 – G sac within scar – 2/3rd SI diam above endo line

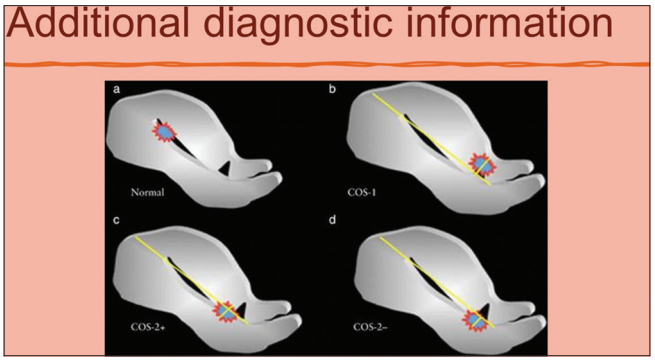

Figure 3: TVS representation of scar ectopic pregnancy.

- 2 – G sac within scar – <2/3rd above endo line
- 3 – Group 2 + no intersection between SI/endometrial line.

3D sonography, if available can help to clarify. Color Doppler shows high velocity, prominent, and low impedance blood flow with peritrophoblastic perfusion in viable pregnancy. In non-viable pregnancies, color Doppler will be with "sliding organs sign." Serum beta-HCG not only confirms pregnancy but also provides baseline for post-treatment follow-up. MRI in select cases may be inconclusive or may be difficult to diagnose. Decision-making and pre-operative planning depends on exact site/depth of myometrial invasion/bladder involvement. For diagnosis, TVS with color Doppler is far superior.[2]

Management is of three types – Medical/Surgical/Interventional Radiology. Appropriate patient selection is very important. Treatment is individualized, and hence, proper counseling is necessary. USG findings should be accurate done by an expert. Gestational age, maternal clinical status including hemodynamic stability, serum beta HCG levels, fetal cardiac activity, future fertility issues,availability of expertise (endoscopic surgery/interventional radiology) is necessary in decision-making.

Medical management with systemic methotrexate (MTX) alone can be given to hemodynamically stable mother with gestational sac of less than 6 weeks with no signs of rupture and beta HCG levels less than 10,000 mIU/ml. A single dose of 50 mg/m^2 of methotrexate is given intramuscularly on Day 1. Beta HCG levels are monitored serially and the dose of methotrexate is decreased by 15% weekly until non pregnant levels of beta HCG levels are reached. If there is no decrease, in beta HCG levels with two doses, to consider surgical management in view of persistent ectopic pregnancy. Occasionally, multiple doses - MTX - 1 mg/kg body weight on Day 1 – 3 – 5 – 7 with alternating dose of folinic acid - 0.1 mg/kg can be given.

Intralesional MTX or potassium chloride (KCl) (USG-guided)[3] acts as local embryocidal drug with high local concentration and interrupts pregnancy. Informed consent and proper location of sac with TVS or transabdominal sonography (TAS) is needed. With 20–22 G Spinal needle, puncture is made in sac and drug is administered (1–1.5 mL Methotrexate (50 mg/mL), 1.5 mL 7.5% KCL). Direct intralesional injection can also be done through hysteroscope/laparoscope. Serial monitoring with beta-HCG is done. A combination of both (Systemic + Intralesion) or systemic MTX alone can be done.

Double balloon catheter with cervical pregnancy or scar ectopic pregnancy (6–8 weeks gestation) can be used. With good paracervical block, balloon inflation done under TAS guidance (upper/lower) pressure balloon under TVS guidance opposite gestational sac. Repeat USG after 1–2 h is done. In case of no bleeding, the patient is kept under observation. On follow up scan on Day 2 or Day 3 showing no cardiac activity or collapsed G sac, catheter is removed. The patient is monitored with serial beta-HCG.

Dilatation and evacuation (USG-guided) can be done with caution as first line therapy in those rare cases where color Doppler does not demonstrate any active flow. Hysteroscopic excision with removal, after coagulating vasculature or hysteroscopy and laparoscopic guided excision of scar ectopic with/without scar revision can be done.[4] If available, robot assisted surgery can be performed.

Temporary intraoperative occlusion of uterine blood supply with combination of medical/surgical therapy can be given. Systemic Methotrexate + Suction and Evacuation (USG Guided), Intralesion Methotrexate + S/E (USG Guided), Uterine Artery Embolization + S/E, Uterine Artery Chemo Embolization + S/E, and Hemostasis achieved by direct Compression for 30 min.

Post-procedure, fever, pain, nausea, vomiting (transient), and ovarian perfusion can be of concern.

Post-treatment, serial beta-HCG, and pelvic USG, weekly with color Doppler (if possible), until HCG levels are undetectable/pregnancy mass disappears (may take several weeks). Occasionally, uterine rupture/severe hemorrhage can occur despite decrease in beta-HCG. Continuation of fetal cardiac activity/growth of sac/increase in beta-HCG indicates failure of medical therapy. Then, surgical therapy is indicated.

Recurrence is unknown. However, uneventful viable IU pregnancies have been reported after conservative management. Occasional cases of recurrence have been reported, but there is insufficient data; hence, counseling is necessary. Early USG in subsequent pregnancy is suggested. There is no statistics with safe time interval for subsequent pregnancy following C-section.

CONCLUSION

Proper identification of C scar ectopic pregnancy with TVS with color Doppler is far superior. Multidisciplinary discussion is required to individualize treatment. Early gestational termination is preferable with disruption of trophoblastic invasion, before surgical intervention. In complicated condition, better to avoid adverse outcome with considerable approach.

Declaration of patient consent

Patient's consent not required as patients identity is not disclosed or compromised.

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Conflicts of interest

There are no conflicts of interest.

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