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CASE REPORT

Maternal-Fetal Medicine

Type 2 cesarean section scar pregnancy managed by hysteroscopic resection and methotrexate: A case report

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Abstract

Background: Diagnosis and management of cesarean scar ectopic pregnancy (CSP) remain challenging. We describe ultrasound diagnosis followed by hysteroscopic resection and methotrexate administration.

Case presentation: A 42-year-old woman, para 2+1, presented with 8 weeks of amenorrhea and vaginal bleeding. She had two previous cesarean deliveries. Initial ultrasound suggested an incomplete miscarriage and beta human chorionic gonadotropin (β-HCG) was 46,129 mIU/ml. After failed medical management, repeat ultrasound diagnosed CSP. Hysteroscopic resection was performed, and she received methotrexate, resulting ß-HCG resolution.

Conclusion: Though rare, CSP should be entertained in any woman presenting with vaginal bleeding with a history of cesarean delivery. Hysteroscopic resection with methotrexate provides good fertility-preserving modality for management.

Keywords: cesarean scar ectopic pregnancy; hysteroscopic resection; methotrexate

Introduction

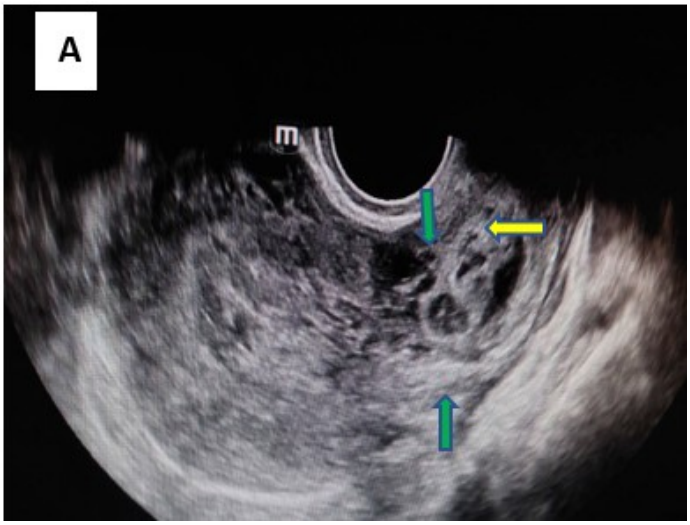
Cesarean scar pregnancy (CSP) is a rare form of ectopic pregnancies, with an estimated incidence of 1 in 2656 of pregnancies (1). Diagnosis and management remain difficult due to its rarity and lack of established treatment protocols (2). There is no standardized management protocol for CSP. Serial measurements of beta-human chorionic gonadotropin (β-hCG) levels are recommended for confirming resolution (3). This case report emphasizes the need for increased clinical awareness and the need for the development of standardized diagnostic and management guidelines for CSP.

Case presentation

A 42-year-old para 2+1 with two prior cesarean deliveries presented with lower abdominal pain and vaginal bleeding after 8 weeks of amenorrhea. She was initially diagnosed with an incomplete miscarriage after a transvaginal ultrasound (TVS) showed 35 mL of heterogenous contents within the endometrial cavity, with endometrial thickness of 18mm and serum beta-hCG of 46,129 mIU/mL. She was medically managed with misoprostol (Cytotec®) 600 mcg sublingually stat. Despite medical management, vaginal bleeding persisted for three weeks, prompting referral to a gynecologist. A repeat TVS revealed an empty endometrial cavity and a

heterogenous mass measuring 3.5 cm x 3.4 cm with a peripheral vascular rim located in the anterior myometrium at the level of the internal cervical os (**Figure 1**). Repeat β-hCG was 39,981 mIU/mL. A diagnosis of cesarean scar ectopic pregnancy was made, and hysteroscopic resection was planned.

Intraoperatively, a mass was visualized at the cesarean scar site, containing visible trophoblastic tissue (**Figure 2**). The endometrial cavity was empty, and the tubal ostia appeared grossly normal. Bipolar resection of the mass was completed, and a balloon tamponade was inserted to achieve hemostasis. Histological analysis revealed benign mesenchymal-type chorionic villi without atypia (**Figure 3**). One week postoperatively, the β-hCG level was 20,025 mIU/mL, and methotrexate 80 mg was administered intramuscularly (calculated as 50 mg/m² body surface area). Weekly β-hCG monitoring continued until the levels became undetectable.



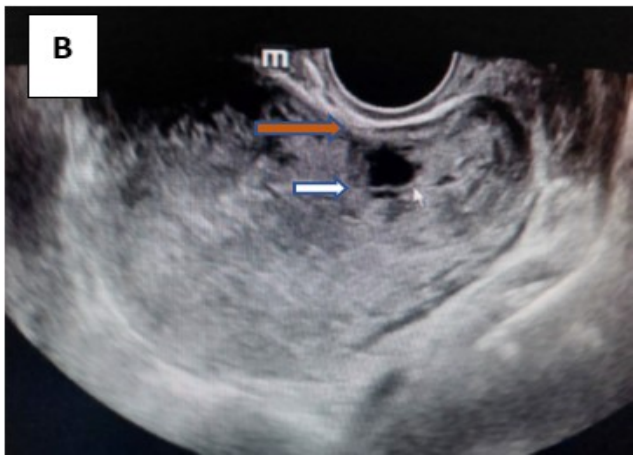


Figure 1. (**A**) Empty heterogenous endometrial cavity indicarted between the two green arrows; fluid in the endocervical canal (due to active bleeding) shown by the yellow arrow; white arrow indicating the gestational sac. (**B**) Gestational sac indicated by white arrow at the isthmic location of the cesarean scar. The brown arrow indicates the thin myometrial layer overlying the gestational sac.

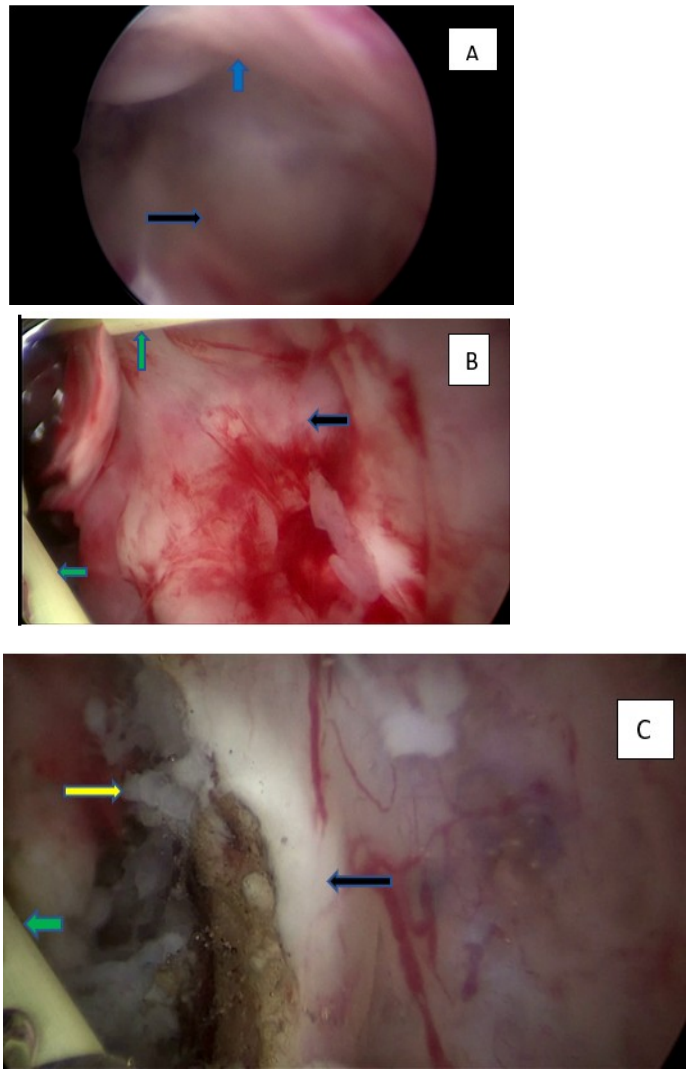


Figure 2. A: Hysteroscopic view of the pregnancy mass (black arrow) at the cesarean scar site; anterior uterine wall marked by blue arrow. **B**: Beginning of the resection showing arms of the wire loop (green arrows) and pregnancy mass (black arrow). **C**: Resection in progress with visible trophoblastic tissue (yellow arrow); part of the pregnancy mass indicated by black arrow.

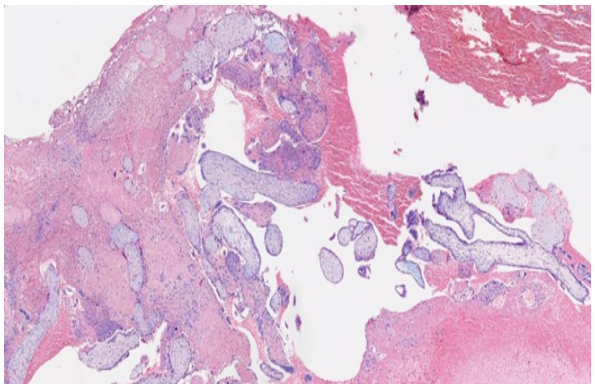


Figure 3. Immature chorionic villi demonstrating degenerative changes, including myxoid change, sclerosis, and edema.

Discussion

Ectopic pregnancy is a potential cause of maternal morbidity and mortality (4). Cesarean scar pregnancy is a rare form of ectopic pregnancy; however, its diagnosis is becoming more frequent due to the increased use of TVS in early pregnancy (1) Although the pathophysiologic mechanism of CSP are not fully understood, it is proposed that the blastocyst implants through microtubular tracts in the cesarean scar (5) . As CSP progresses, it can develop into either a Type I (endogenic) or Type II (exogenic) variant. In Type I the pregnancy grows towards the endometrial cavity or endocervical canal, while in Type II, it invades the myometrium and progresses toward the bladder (6) - (7).

The clinical presentation of CSP occurs in the first trimester and may include vaginal bleeding (39%), mild to moderate abdominal pain (24%), or be diagnosed incidentally in asymptomatic patients (37%). Severe abdominal pain may indicate uterine rupture. The use of TVS has improved diagnostic accuracy of CSP, with a reported sensitivity of 86.4% (2). Ultrasound diagnostic criteria for CSP include an empty endometrial cavity and endocervical canal, presence of a gestational sac (with or without the fetal pole) located in the anterior portion of uterine isthmus, and absence of or a thin myometrial layer between the sac and bladder. The presence of peri-trophoblastic vascularity on color Doppler and a negative 'sliding sac' sign helps distinguish CSP from an ongoing pregnancy loss (8). Despite these diagnostic advancements, CSP may still be misinterpreted as a normal intrauterine pregnancy, or as a missed or incomplete miscarriage.

The primary goals in CSP management are termination of the ectopic gestation to prevent life-threatening hemorrhage and preservation of future fertility. However, there are no standardized treatment protocols and management remains individualized (8). Options include local or systemic methotrexate administration and surgical interventions such as suction curettage, hysteroscopic resection or laparoscopic/ laparotomic excision of the CSP. In severe cases, hysterectomy may be performed as a salvage procedure. A multimodal approach is often required for optimal outcomes. Close monitoring with serial serum β-hCG monitoring for resolution is necessary. Medical management with methotrexate is recommended in select cases, typically in patients with a gestational age under 8 weeks, β-hCG levels below 5,000 mIU/mL, absence of abdominal pain, and a myometrial thickness of less than 2mm between gestational sac and bladder (9). Surgical intervention may be necessary in cases of poor β-hCG decline or massive hemorrhage (8).

Although hysteroscopic or laparoscopic resections offer advantages such as shorter hospital stays, they require highly skilled gynecologic surgeons and advanced equipment, which may not be available in public healthcare settings. Once the appropriate intervention is undertaken, weekly β-hCG monitoring is essential until resolution is confirmed.

In conclusion, greater awareness and expertise in diagnosing and managing CSP is critical among obstetricians and gynaecologists to help avert maternal morbidity and mortality.

Informed consent for publication

Informed consent for publication was obtained from the patient.

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None

Declarations

Conflicts of interest

The authors have no conflict interest.

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