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Case Series

Caesarean scar ectopic – A case series of three cases managed with diverse modalities of treatment

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ABSTRACT

The incidence of 'Caesarean scar ectopic pregnancy' has been increasing in recent times. Probably the rising caesarean rate around the world responsible for it. We are reporting three cases of Caesarean scar ectopic pregnancies, suspected clinically and confirmed by sonography of the uterus. Each of the three cases was managed with different modalities of treatment. Case one was operated by open laparotomy, case two underwent laparoscopy and case three was managed with medical treatment without surgery. Uterus could be saved in all three cases.

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1. Introduction

The 'caesarean Scar ectopic pregnancy' is a rare form of ectopic pregnancy. It is a condition where the implantation occurs on muscle or fibrous tissue of previous caesarean scar. Incidence is 1 in 800 to 1 in 2500 of all ectopic pregnancies. It comprises of 6.1% of all ectopic pregnancy with a recurrence rate of approximately 5%. Mortality rate is about 1 in 500 cases. Although the exact cause of scar ectopic is not known but poor healing of caesarean incision on the uterus may be is a major contributing pathology. Early diagnosis and prompt management plays a very important role to prevent maternal mortality. The first case of a cesarean scar ectopic pregnancy was reported in English medical literature in 1978.¹ The scar ectopic is more common following caesarean section, hysterotomy, dilatation and curettage (D&C), and uterine surgeries like myomectomy, metroplasty, hysteroscopy and manual removal of placenta.² The incidence is higher in women with previous IVF pregnancy.³ The Ultrasound is useful in diagnosis and certain criteria are visualization of

gestational sac (G-sac) at the site of prior caesarean scar and outside endometrial cavity, thin myometrium (1-3 mm) or absent myometrium between sac and bladder. MRI can be performed when diagnosis by transvaginal color doppler USG is difficult. The termination of the pregnancy is the main form of treatment. The termination can be performed through various methods. We present different methods of management of cesarean scar ectopic pregnancy in three patients.

2. Case Reports

2.1. Case 1

A 29-year-old female, gravida 4, Para 3, Living 3 with 9.4 weeks of gestation with history of previous 3 full term caesarean section presented with spotting per vagina and pain in abdomen for 2 days. She had positive urine pregnancy test. Ultrasound revealed a single live pregnancy of 9.4 weeks at anterior portion of uterine isthmus with thinning of myometrium at the previous uterine scar. The Cervical canal was empty. Beta- hCG value was 28210mIU/L. Patient underwent exploratory laparotomy. Uterus was about 10 weeks size with no

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abnormality in adnexa. Uterus was adherent to anterior abdominal wall. Adhesiolysis was done to restore the anatomy of the uterus. Urinary bladder was identified, mobilized and pushed down. Gestational sac (G-sac) could be seen on the previous caesarean scar (Figure 1). G-sac with placenta excised. Uterus closed in single layer. Beta-hCG levels reduced to 3028mIU/L after 48 hours of surgery and became undetectable on subsequent follow-up. Histopathology confirmed the presence of decidual and chorionic tissue in the excised scar tissue.



Fig. 1: Showing cesarean scar ectopic pregnancy with thinning of myometrial wall on laparotomy (case report 1)

2.2. Case 2

A 30-year-old female, gravida 2, living 1, para 1, presented with bleeding per vagina and pain in abdomen for 2 days. The urine pregnancy test was positive. She gave history of lower segment caesarean section (LSCS) 7 years back. Abdominal ultrasound revealed a single live pregnancy of 7 weeks 4 days at lower uterine segment with thinning and stretching of myometrium at scar site. Doppler showed significant blood flow in the area of the mass. Beta-hCG value was 85,000 mIU/ml. Patient underwent diagnostic and operative laparoscopy. Uterus was 8-10 weeks size. Bilateral adnexa were normal. Bladder was adherent to anterior uterine wall. Gestational sac densely adhered to scar. Dark reddish tissue suggestive of products of conception was removed (Figure 2). Blood loss was limited. Uterus was closed in single layer (Figure 3). Beta-hCG levels dropped to 3000mIU/ml after 48 hours of surgery and became undetectable on subsequent follow-up. Histopathology revealed decidual and chorionic villi in the scar tissue which was consistent with scar ectopic pregnancy.

2.3. Case 3

A 34-year-old female, Gravida 3, Para 2, Living 2 with history of previous 2 full term LSCS at 5 weeks of gestation

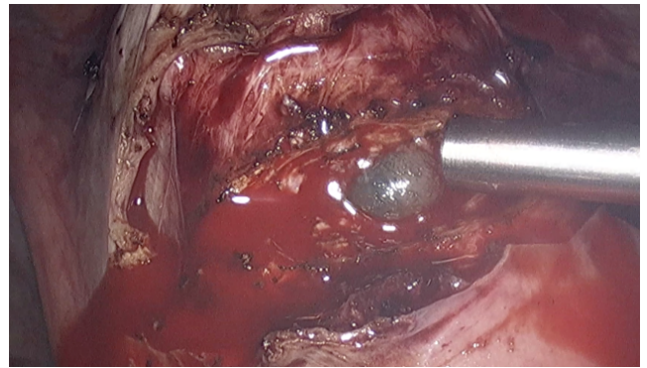


Fig. 2: Laparoscopy showing G-sac attached in lower uterine segment along with bladder adhesions (Case report 2)

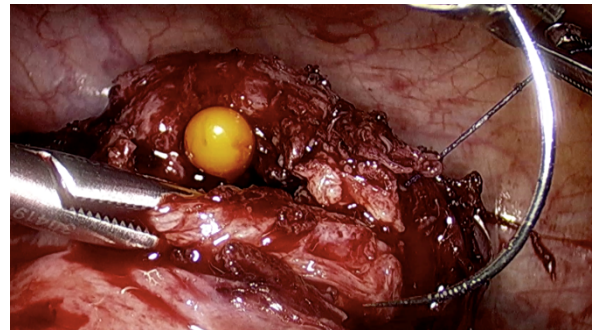


Fig. 3: Laparoscopic closure of uterus after resection of scar ectopic (case report 2)

presented with positive urine pregnancy test. On vaginal examination, uterus was approximately 6 weeks size. Beta-hCG value was 910.8mIU/ml on admission. Transvaginal ultrasound showed an irregular gestational sac of 12.5X12.3X8.9 mm within anterior myometrium at the site of caesarean scar (Figure 4) with a high color doppler flow around mass. 3 doses of Inj. Methotrexate 1mg/kg intramuscular was given as per body weight alternating with Inj. Leucovorin 0.1mg/kg intramuscular. Beta-hCG values after initiation of chemotherapy were 220 mIU/ml on 15th day, 112.6 mIU/ml on 22nd day, 45.19 mIU/ml on 30th day and negative after 55 days with normal pelvis sonography.

3. Discussion

A cesarean scar ectopic pregnancy complicates 1 in 2226 pregnancies.⁴ Two different types scar ectopic pregnancies are identified. Type I is caused by implantation in the prior scar with progression towards the cervico-isthmic (in prior cesarean delivery) space or uterine cavity. Type II is caused by deep implantation into scar defect with infiltrating growth into the uterine myometrium and to uterine serosal surface which may result into uterine rupture and massive hemorrhage in the first trimester of pregnancy. Studies have even shown that risk for caesarean scar pregnancy does not



Fig. 4: Shows implantation in lower uterine segment consistent with cesarean scar ectopic pregnancy (Case report 3)

correlate to the number of previous cesarean deliveries.⁵ There is no evidence that supports that double versus single layer closure of uterine incision prevents the risk of scar ectopic gestation. Caesarean scar ectopics have also been classified into four grades based on ultrasound findings.⁶ (Figure 5)

The mainstay management of cesarean scar ectopic pregnancy currently is therapeutic termination. Various methods are available for termination of pregnancy like medical, surgical and expectant management. The method to be chosen depends on clinical and laboratory criteria. The medical management is done with methotrexate $50\text{mg}/\text{m}^2$ (systemic or intra-gestational sac) or intra-gestational potassium chloride can be tried. Various surgical methods of management have been tried for cesarean scar ectopic pregnancy which gives faster results and a more rapid decline in beta-hCG levels when compared to medical line of management. Surgical procedures include dilatation & curettage, vaginal hysterotomy, hysteroscopic resection of pregnancy, laparoscopy and laparotomy with wedge resection. At times massive hemorrhage during any of these procedures may warrant hysterectomy. Any residual bleeding at the end of procedure can be controlled by cauterization or by balloon tamponade with balloons of Foleys catheter.⁷ Laparoscopic removal of cesarean scar pregnancy involves identification of ectopic pregnancy which is incised with monopolar cautery and removed through one of the trocar sites and defect is repaired in one or two layer closure.⁸ It has been suggested by many studies that hysteroscopic or laparoscopic resection is not recommended for patients with less than 3mm of myometrium remaining due to risk of bladder and ureteric injuries.⁹ Laparotomy is treatment of choice in suspected uterine rupture with hemodynamic instability or in the patients with advance scar ectopic pregnancy where, hysterectomy may be needed.¹⁰ In scar ectopic pregnancy,

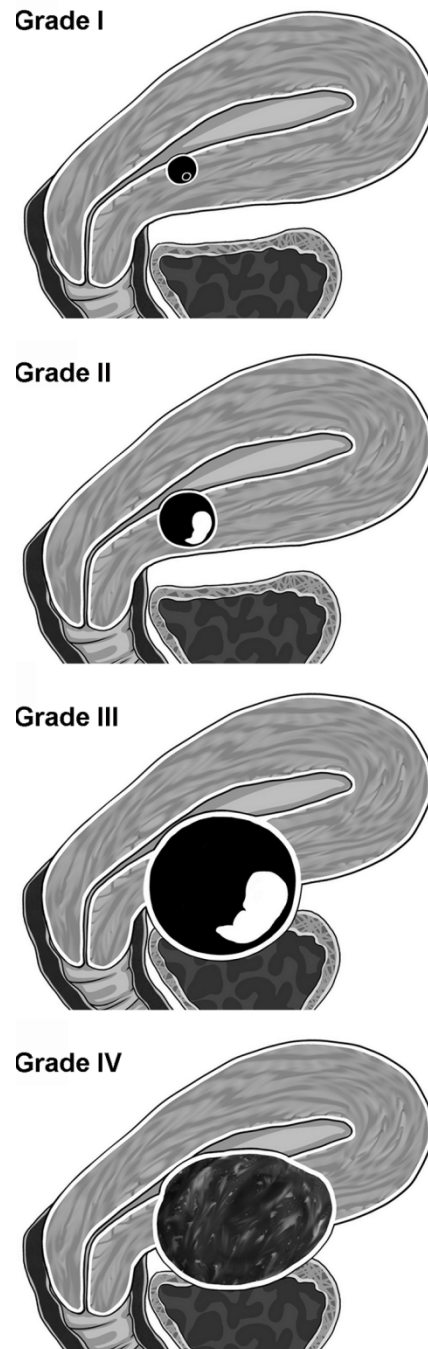


Fig. 5: Cesarean scar ectopic pregnancy classification system⁶

gestational sac is not uterine cavity and chorionic villi implants on scar. Hence, trophoblastic tissue is unreachable to curette. So, dilatation and curettage have a doubtful role. Seow et al in their series of 12 cases of cesarean section ectopic pregnancy concluded that TVS or TAS guided methotrexate injection emerged as treatment of choice to terminate CS ectopic pregnancy. Regression of scar ectopic mass occurred between 2 months to 1 year. However, some of the researchers reported higher failure rates with methotrexate.¹¹

4. Conclusion

Hospitals should have a clear protocol for management of Cesarean scar ectopic pregnancy as these cases are expected to rise in near future due to increased rates of cesarean section. This case series summarizes different methods to manage cesarean scar ectopic pregnancy which is potentially life-threatening if left untreated. Subsequent pregnancies may be complicated by uterine rupture therefore patient must be adequately warned about these consequences. Scar ectopic pregnancy occurred in 52% of cases following prior one cesarean section, 36% in prior two cesarean section and 12% after three or more prior cesarean section.¹¹ Careful supervision to be maintained in subsequent pregnancies to assess scar integrity during pregnancy and in labour. There are many options available in management of cesarean scar ectopic pregnancy which may lead to confusion as to the use of correct choice of treatment for individual case. However, early diagnosis, size, duration and type of cesarean scar pregnancy, beta-hCG values and the need for preserving fertility would influence the choice of treatment. Successful viable pregnancies have been reported after all the modalities of conservative management of scar ectopic pregnancy.¹¹

5. Source of Funding

None.

6. Conflict of Interest

The authors declare no conflict of interest.

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