CASE REPORT

Management of a case of caesarean scar pregnancy and all its complications

Shuling Liu,¹ Shivani Durai²

¹Department of Reproductive Medicine, KK Womens' and Childrens' Hospital, Singapore, Singapore

²Department of Obstetrics & Gynaecology, Singhealth, Singapore, Singapore

Correspondence to

Dr Shivani Durai,
dr.shivani.durai@gmail.com

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SUMMARY

Caesarean scar pregnancy is a rare form of an ectopic pregnancy that can lead to serious consequences like massive bleeding and uterine rupture. Although there is no consensus for treatment, many treatment options have been described. We present a female patient who had to undergo most of these available treatments due to unforeseen circumstances. These treatments include local injection of methotrexate and potassium chloride into the pregnancy, transcervical aspiration of the pregnancy under laparoscopic guidance, balloon occlusion of the internal iliac arteries and eventually a laparoscopic hysterectomy. She also developed a complication of vault dehiscence due to an abscess formation after her hysterectomy. Owing to the potential need for multiple interventions and admissions, adequate counselling is required for these patients to manage their expectations in what is usually a very difficult situation.

BACKGROUND

The incidence of caesarean section has been increasing, particularly the number of patients requesting caesarean sections without a medical indication. As obstetricians, we are trained to counsel these patients about potential surgical complications in detail but we frequently overlook the fact that it can seriously impact their subsequent pregnancies. Examples of complications caused by a previous caesarean sections include caesarean scar pregnancy, placenta praevia, intra-abdominal adhesions and uterine rupture. Caesarean scar pregnancy is the abnormal growth of a pregnancy into the site of a previous caesarean section. It is a rare form of an ectopic pregnancy that can lead to serious consequences like bleeding and uterine rupture. There were fewer than 20 cases in the literature before 2001, but the number of reported scar pregnancies has been increasing since then.^{1 2} More recently, the incidence of caesarean scar pregnancy is thought to be around 1:2000 pregnancies, accounting for 6% of all ectopic pregnancies in women with at least one previous caesarean section.¹ Prognosis for a full term, uneventful pregnancy is poor, thus most obstetrician gynaecologists will offer termination of pregnancy on diagnosis.³

This is a case report about a lady who had a caesarean section 13 years ago and presented on this occasion with a caesarean scar pregnancy. She underwent multiple medical and surgical interventions, prolonged antibiotic therapy for infection and many extended hospital stays. Although we cannot prevent a scar pregnancy from happening, we can decrease

the number of caesarean sections performed on patients to reduce the number of people who subsequently get pregnant with a caesarean section scar.

CASE PRESENTATION

A 36-year-old lady presented at 10 weeks amenorrhoea with abdominal cramps and vaginal bleeding of 1 month's duration. She had a history of a laparoscopic cystectomy for an endometriotic cyst 6 years ago and a lower segment caesarean section 13 years ago. This was an unexpected pregnancy for the patient. She had completed her family and did not desire further fertility.

Her vitals were stable and there were no signs of acute abdomen. Her cervical os was closed with no active bleeding.

INVESTIGATIONS

An ultrasound showed a live pregnancy within the anterior part of the lower uterine segment at the expected region of a lower segment caesarean section scar. There was no obvious myometrial tissue between the gestational sac and the urinary bladder. The crown-rump length was 3.48 cm corresponding to 10 weeks and 4 days of gestation with the presence of cardiac activity at 169 bpm (figure 1).

DIFFERENTIAL DIAGNOSIS

Caesarean scar ectopic pregnancy should be differentiated from a cervical ectopic pregnancy. Ultrasound of both will show empty endometrial cavities. For cervical pregnancy, the gestational sac is below the internal os. There will be a barrel-shaped cervix on vaginal examination. The gestational sac of a caesarean scar pregnancy would be over the anterior aspect of the uterine isthmus and there will be absence of myometrium between the bladder and the gestational sac. The cervix will be normal in shape and the cervical canal will be empty.

TREATMENT

The patient initially underwent ultrasound-guided injection of potassium chloride (KCL) into the fetal heart, aspiration of surrounding amniotic fluid and injection of methotrexate into the gestational sac. She was later referred to us for further management. In view of the large size of the pregnancy, the presence of fetal heart beat and the high value of serum β -human chorionic gonadotropin (β -HCG), surgical options were offered to the patient because of the high risk of failure of medical management.

She was keen for surgery as she wanted definitive treatment and prevention of future recurrences.

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Figure 1 Ultrasound image of the live caesarean scar pregnancy.

Initially she requested for a total hysterectomy as she was certain she did not want any more children. However, the team was worried about the increase in vascularity around the pregnancy which could cause significant bleeding and increased risk of bladder injury if the hysterectomy was performed during the acute phase. She was counselled extensively and eventually agreed to undergo a transcervical vacuum aspiration of the gestational sac under laparoscopic and ultrasound guidance. Prophylactic balloons were inserted into bilateral internal iliac arteries by the interventional radiologist prior to surgery in anticipation of the blood loss. The balloons were inflated before surgery and were released at the end of surgery. We also performed bilateral salpingectomies during the same surgery. The patient had decided against tubal ligation with clips because of its small risk of ectopic pregnancy.

Intraoperatively, we found a 7 cm ectopic pregnancy that was located in the lower segment of the uterus. It was thin and ballooning with the bladder adherent anteriorly ([figure 2](#)). Both ovaries were normal. The right tube was adherent to the ovary while the left tube was normal. Transcervical aspiration of the pregnancy was performed under laparoscopic guidance initially, followed by a transabdominal ultrasound to ensure that most of the pregnancy product had been removed. A Foley's catheter was inserted into the cervix for 24 h after surgery as tamponade. Postoperative recovery was uneventful and she was discharged on the third postoperative day.

She was followed up closely with weekly serum β -hCG in the outpatient clinic and serum β -hCG had decreased from 18916.5 IU/L on the operation day to 269.6 IU/L 3 weeks after surgery. She was presented again to the emergency room on the

26th postoperative day reporting of a sudden onset of increased vaginal bleeding associated with abdominal pain. An urgent ultrasound of the pelvis showed that there was a 7.5×6.4 cm heterogenous focus in the lower anterior uterine wall. The endometrium was not thickened, measuring 6 mm and no intra-uterine gestational sac was detected. She was admitted immediately and started on oral augmentin to prevent secondary infection. The mass seen was likely a blood clot with retained products of conception. She declined embolisation of the uterine arteries to decrease the bleeding but instead opted for a hysterectomy as she wanted definitive treatment.

An elective hysterectomy was performed on the 29th day after the first operation, 3 days after her presentation of bleeding. A laparoscopic approach was decided on because in the first surgery the uterus had been mobile with good access to the utero-vesical fold and the uterine vessels. Intraoperatively, there was a large 7 cm heterogenous mass on the anterior surface of the uterus in the lower segment ([figure 3](#)). We carefully dissected the bladder away from the uterine surface ([figure 4](#)) and also performed a bladder cystoscopy at the end of the surgery to confirm that there was no bladder injury. She recovered well postoperatively and was discharged home on the second postoperative day.

Unfortunately, she was presented again to the emergency room on the 17th day after her second surgery reporting of a week of vaginal discharge. Examination showed that there was foul-smelling pus coming from the vaginal vault and there was a 2 cm vault dehiscence in the centre of the vaginal vault.

CT abdomen and pelvis showed that there was an abscess collection (8.4×6.9×2.4 cm) that was contiguous with the superior aspect of the vaginal vault and surrounded the distal sigmoid colon.

As she was clinically stable and afebrile with stable infective markers, the decision for conservative treatment of the abscess with antibiotics was made. The abscess was also draining spontaneously through the vagina. She was given 9 days of intravenous followed by 2 weeks of oral antibiotics. She was followed up closely with regular transrectal ultrasounds of the pelvis.

OUTCOME AND FOLLOW-UP

The abscess decreased in size with the last ultrasound showing its complete resolution on completion of antibiotics. Examination of the vaginal vault also confirmed that the dehiscence had completely healed 1 month after the presentation of the infection.

Final histology confirmed the diagnosis with the findings of chorionic villi at the lower uterine segment with penetration into the full thickness of the scar tissue.

Figure 2 Laparoscopic image of the caesarean scar pregnancy with the bladder adherent anteriorly at the first surgery.

Figure 3 Laparoscopic image of the 7 cm clot in the lower uterine segment with the bladder adherent anteriorly at the second surgery.

Figure 4 Laparoscopic image of the anterior uterus with the clot after dissection of the bladder away from the uterus.

DISCUSSION

This is a difficult case of a caesarean scar pregnancy presenting with multiple complications. The main worry of a caesarean scar pregnancy is the potential for massive bleeding, uterine rupture and high attendant risk of complications. The optimal treatment for these patients is uncertain and there is no guidance or consensus for this rare form of ectopic pregnancy.⁴ Many different treatments have been described in the literature. Unfortunately, this patient had to undergo the majority of the medical and surgical treatment options available.

Treatment options can be classified as expectant, medical and surgical. Expectant management in this patient was not feasible as the pregnancy was growing in the scar with the absence of any myometrial tissue between the pregnancy and the bladder. There would be a very high risk of rupture should this pregnancy have been allowed to progress.

Medical management with systemic or local methotrexate has been widely described. The use of potassium chloride injection directly into the fetal thorax, with methotrexate injected into the sac in this patient, has also been previously reported.⁵ However, the decline of β -hCG and resolution of the ectopic pregnancy mass is unpredictable and can often be prolonged. The patient will also require frequent follow ups and the risk of massive bleeding and uterine rupture cannot be eliminated.²

Surgical management is the preferred treatment option for many gynaecologists as it can decrease the risk for multiple interventions, extended hospital stay and uterine rupture.^{4, 6} Methods include vacuum aspiration of the pregnancy, resection of the pregnancy and scar either via laparotomy or minimally invasive surgery. Hysterectomy is usually reserved for life-threatening blood loss or if the patient has completed her family. Uterine artery embolism has also been used to decrease the amount of blood loss.⁷ The aim of the surgery is to remove as much of the pregnancy as possible without significant

bleeding, perforating the uterus or injuring the bladder. These are difficult surgeries even in the most experienced hands and must be handled with care.

The patient presented with caesarean scar pregnancy which had to be terminated in view of the high risks. She had to however, undergo multiple admissions, medications and surgical interventions before her full recovery 3 months later. This is a good case for discussion as it provides many learning points for the attending team, who had to carefully consider the benefits and risks of the multiple procedures offered to the patient to ensure her full and eventual recovery.

Patient's perspective

As a patient, I went through an immense amount of pain. The care and concern from my doctor had put me at ease, as she explained to me in detail on the types of procedures that I will be put through. I do hope the write up would be helpful for future purposes.

Learning points

- ▶ There is a need to decrease the number of primary caesarean sections performed to minimise its effect on future pregnancies.
- ▶ Caesarean scar pregnancy can lead to serious consequences if not treated promptly.
- ▶ There is currently no consensus regarding the type of treatment and options must be discussed carefully with the patient.
- ▶ Treatment of caesarean scar pregnancy is controversial and can lead to many difficult complications: involvement of senior gynaecologists will help in the management of such cases.

Contributors SL is primary author of article and consultant in-charge of the patient's overall management and care. SD contributed in literature search and information gathering of the case.

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