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Case Report Open Access

Dilemma in the Management of Caesarean Scar Pregnancy

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Introduction

Caesarean scar pregnancies are the rarest form of ectopic pregnancies with an incidence of 1:1800 [1]. Its incidence is increasing with rising caesarean section rates worldwide. The gestation sac is surrounded by myometrium and fibrous tissue of the scar from previous caesarean section. The natural history is unknown but trophoblastic invasion of the myometrium can result in uterine rupture and catastrophic haemorrhage [2].

Case Report

25-year-old parous woman presented to the Early Pregnancy Assessment Unit (EPAU) with 5 weeks of amenorrhoea and painless spotting per vaginum. In the past she had been treated with Methotrexate for an ectopic pregnancy in the right tube. In addition her last child birth was by caesarean section three years prior.

Beta HCG was elevated at 64303 IU and subsequent transvaginal scan confirmed a live caesarean scar pregnancy. There was no free fluid suggestive of rupture and clinically as well, she was asymptomatic with a non-tender abdomen. The myometrial thickness at the implantation site was 1.13 cm. Management options available were surgical and medical. After appropriate counselling of the woman, decision was taken to treat by medical method. However the challenge was to avoid excessive bleeding that could be induced by Methotrexate (Figure 1). To overcome this, Mifepristone (200 mg) was initially given to cause detach the gestation sac from its implantation site followed by methotrexate (Figure 2). In accordance with ectopic pregnancy guideline, she was followed up in the EPAU with regular bHCG levels as shown in Table 1.

Methotrexate was repeated at the end of one week because the bHCG was still elevated. Subsequently the bHCG levels consistently dropped and the patient remained asymptomatic. Transvaginal scan at the end of 5 months showed a 15 mm hyper echoic mass in anterior myometrium with no fetal pole. By then the woman had resumed regular periods. She received counselling about future pregnancy implications and was advised to have a planned caesarean at 37 weeks.

She had a subsequent pregnancy after 18 months and had an uneventful antenatal period and was delivered by caesarean section at term.

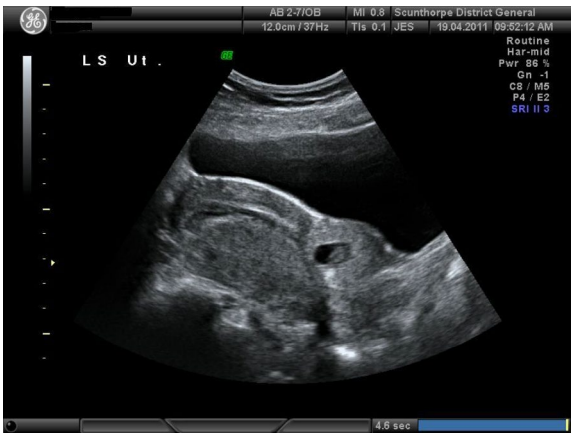

Figure 1: Pre Methotrexate effect.

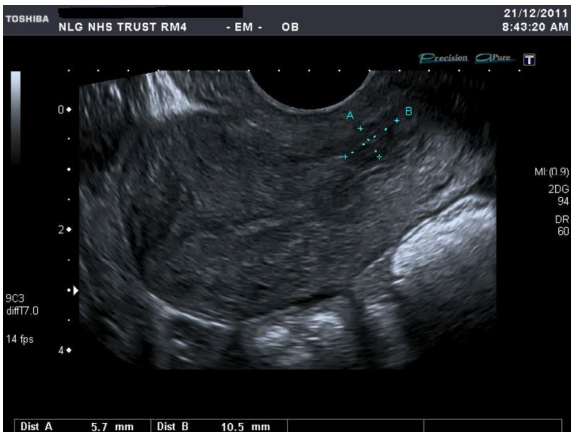

Figure 2: Post Methotrexate effect.

Day	bHCG (in IU)
7	66855
15	32848
22	8508
35	1880
51	481
60	278
120	70
150	<1

Table 1: Followed EPAU with bHCG levels.

Discussion

The incidence of CSP is unknown, as very few cases have been reported in the literature. Jurkovic et al. [1] have estimated a prevalence of 1:1800 in their local population of women attending the early pregnancy assessment unit. A recent case series [3] estimates an incidence of 1:2226 of all pregnancies, with a rate of 0.15% in women with a previous CS and a rate of 6.1% of all ectopic pregnancies in women who had at least one caesarean delivery. The gestational age at diagnosis ranged from 5^{+0} to 12^{+4} weeks (mean 7.5 ± 2.5 weeks), and the time interval between the last caesarean section and the CSP was 6 months to 12 years in this series.

Complications that a clinician should be wary of are catastrophic haemorrhage (secondary to placental invasion and vascularity) and rupture at the site of implantation as in any ectopic pregnancy. Bladder

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invasion is a possible sequel if the myometrium is breached completely and the pregnancy is still uninterrupted.

Little information is available on the natural history of this condition. Very few of these pregnancies reported in the literature progressed beyond first trimester [1] as almost all are terminated during this period. It is likely that if a developing pregnancy in a caesarean section scar were to continue to the second or third trimesters, there would be a substantial risk of uterine rupture with catastrophic haemorrhage, with a high risk of hysterectomy causing serious maternal morbidity and loss of future fertility. There is also a danger of invasion of the bladder by the growing placenta or a secondary abdominal pregnancy [2]. However, if the pregnancy continues within the uterus, the risk of placenta accreta is significantly increased, up to three- to five-fold [2].

If expectant treatment is intended, a detailed care plan must be documented with the risks and benefits of pregnancy terminated versus continued. The woman must be appropriately counselled by a senior clinician with a clear explanation that continuation of pregnancy will almost invariably lead to uterine rupture with serious consequences [2].

Owing to their rarity, there is no consensus on treatment regimens. The options are medical, surgical or a combination of both methods. Aim of the treatment would be avoidance of rupture, haemorrhage, hysterectomy and preserve fertility.

Medical treatment is preferred for asymptomatic women with <8 weeks gestation and myometrial thickness <2 mm between gestation sac and bladder [4]. Different techniques have been described and these include: systemic administration of Methotrexate (MTX), injection of embryocides (such as MTX, potassium chloride) directly into the gestation sac or a combination of foeticide followed by systemic administration of drugs. The disadvantage with the former is need for repeated doses of MTX since its half life is short, while that with embryocide is the availability of foeto-maternal specialists. It has to be borne in mind that the weak myometrial scar can dehisce and rupture during treatment and patient made aware of the warning signs. Women should also be prepared for a long follow up since it can take 4-16 weeks for bHCG level normalisation. This is due to the placental implantation on mainly fibrous tissue and hence absorption of the gestation sac is extremely slow [5].

Surgical methods described in case reports and series include suction evacuation, hysteroscopic/laparoscopic resection of the caesarean scar pregnancy or scan guided sac aspiration [6-8]. Surgical complications inherent with that of hysteroscopy and laparoscopy pose a disadvantage along with the risk of uterine perforation. Non-familiarity of scar resection through hysteroscopy and laparoscopy might hinder a clinician considering this option. In a haemodynamically unstable patient with evidence of scar rupture, laparotomy should be done with intent to remove the pregnancy and secure the defect. Occasionally this is achieved only be performing a hysterectomy.

Medline search using Medical subject heading search words: 'caesarean scar' and 'ectopic pregnancy' did not show any caesarean scar pregnancy managed in this way. Only one case series showed use of mifepristone, but it was subsequent to embryocide and mifepristone was used 12 hourly for three days [9].

Our management was unique the way Mifepristone was used prior to Methotrexate. The anti-progesterone activity of Mifepristone helped to destroy and detach the chorionic villi, thus making MTX more effective. The initial bHCG level (54340 IU) was far greater than what is recommended (5000 IU). But appropriate counselling, compliant patient and prolonged follow up ensured safe treatment for the caesarean scar pregnancy.

When the optimal management for a rare clinical condition such as caesarean scar pregnancy is unknown, the treatment should be tailored to the available infrastructure in the hospital and individualized as per patient's compliance. The medical method described by us has not been reported so far. In a setting where foeto-maternal unit facilities are unavailable for foeticide administration, this is a good alternative compared to the more invasive surgical methods.

Conclusion

With increasing rates of caesarean sections, it is likely that obstetricians and gynaecologists get to manage more ectopic pregnancies arising from the caesarean scar. Timely diagnosis, individualized treatment choices are key factors in avoiding rupture, haemorrhage and preserving fertility.

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