CASE REPORT

Laparoscopic management of an ectopic pregnancy in a previous Caesarean section scar

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A case of laparoscopic management of an ectopic pregnancy in a previous Caesarean section scar is reported. A 30 year old woman was admitted to our hospital for profuse vaginal bleeding 2 weeks after an abortion had been performed. A urine pregnancy test was positive. Abdominal ultrasound revealed a well-encapsulated bulging mass over the lower anterior uterine wall measuring 7×5 cm. Hysteroscopy revealed retained gestational tissue in the lower corpus despite a normal uterine cavity. An incision was made over the most prominent area of the mass by operative laparoscopy. Dark reddish tissue suggestive of the products of conception was removed using grasping forceps. One-layer of continuous endoscopic sutures along the affected uterine wall was made with 1–0 Prolene. Laparoscopy enabled the successful treatment of an unruptured ectopic pregnancy in a previous Caesarean scar and made it possible to preserve the patient's reproductive capability. Key words: Caesarean section scar/ectopic pregnancy/hysteroscopy/laparoscopy

Introduction

Ectopic gestation in a previous Caesarean section scar is a rare event, and carries a high risk of uterine rupture and uncontrollable haemorrhage. Preoperative confirmation of diagnosis is very difficult and hysterectomy is often required to control bleeding during operation. We describe the first reported case of an ectopic gestation in a previous Caesarean section scar to be diagnosed by ultrasound and hysteroscopy, and managed successfully by operative laparoscopy.

Case report

A 30 year old woman, gravida 3, abortus 2, was admitted to our hospital with profuse vaginal bleeding 2 weeks after a medical abortion. The abortion was performed by dilatation and curettage because of vaginal bleeding persisting for 2 months. She had undergone an uneventful term transverse lower segment Caesarean section 1 year previously. The urine pregnancy test was positive. Abdominal ultrasound revealed a well-encapsulated bulging mass over the lower anterior uterine wall measuring 7×5 cm, with a heteroechoic pattern. Quantitative assay of the β-subunit of human chorionic gonadotrophin (β-HCG) was 54.4 mIU/ml 4 days before admission and within normal limits (9.08 mIU/ml) at admission. Doppler flow showed no significant blood flow in the area of the mass. Diagnostic hysteroscopy revealed retained gestational tissue in the lower corpus despite a normal uterine cavity. Thus, ectopic pregnancy in a previous Caesarean section scar was diagnosed.

Diagnostic and possible operative laparoscopy was arranged. Under general endotracheal anaesthesia, the patient was placed in the 15 degree Trendelenburg position. A Foley catheter was inserted pre-operatively in order to enable continuous monitoring of urine output during the operation. The Veress needle was inserted through a small incision just inferior to the umbilicus. Pneumoperitoneum was created by insufflating carbon dioxide at a maximal pressure of 15 mm Hg. After the Veress needle was removed, an operative 10 mm trocar was inserted into the abdomen. A laparoscope with an attached camera was inserted through the cannula to visualize the intra-abdominal organs. Two additional 5 mm trocars were inserted at the level of the anterior superior iliac spine, lateral to the epigastric blood vessels. The uterus was anteverted and normal in size, but a bulging mass was seen, measuring 5 cm in diameter arising from serosa of the previous Caesarean section scar (Figure 1). The jejunum was adherent over the mass but without evidence of fistula. Bilateral adnexae were normal. Free fluid in the pouch of Douglas was not visualized. The adhesion caused by the anterior uterine mass was removed carefully and completely. Surgical laparoscopy began but with equipment and staff prepared for immediate laparotomy if required. An incision was made over the most prominent area of the mass (Figure 2). Dark reddish tissue suggestive of the products of conception was noted and removed using grasping forceps. Homeostasis was achieved using Wolf bipolar forceps at 20 W. One layer of continuous endoscopic sutures along the affected uterine wall was made with 1–0 Prolene (Figure 3). The gestational tissue was removed in an endobag. The total operative time was 110 min. Blood loss was limited and no blood transfusion needed. Histopathology revealed blood clots with necrotic villi which was consistent with ectopic pregnancy. The patient was discharged on the third
Figure 1. A bulging mass measuring 5 cm in diameter arising from the serosa of the previous Caesarean section scar.

Figure 2. An incision was made over the most prominent area of the mass. Dark reddish tissue suggestive of the products of conception was removed.

Figure 3. A single layer of continuous endoscopic sutures along the affected uterine wall was made with 1–0 Prolene.

Discussion

Although the use of ultrasonography in the diagnosis of ectopic pregnancy is well established (Cava and Russell, 1978; Ginsburg et al., 1989; Chazotte and Cohen, 1990; Brown and Doubilet, 1994; Timor-Tritsch et al., 1994; Herman et al., 1995), differential diagnosis between spontaneous abortion in progress, cervico–isthmic pregnancy and ectopic pregnancy developing in a previous Caesarean section scar remains difficult. Pregnancy in a previous Caesarean section scar is the rarest kind of all ectopic pregnancies, and probably one of the most dangerous because of the risk of rupture and haemorrhage (Fait et al., 1987; Timor-Tritsch et al., 1994; Atril et al., 1996). Although many hypotheses have been proposed to account for this rare condition, the most reasonable seems to be that the conceptus enters into the myometrium through a microscopic tract. This tract may arise due to a previous Caesarean section, a previous dilatation and curettage, or due to adenomyosis (Scaletta and Kaplan, 1994; Van de Meerssche et al., 1995).

In our patient, the concentration of $\beta$-HCG did not appear to be associated with the trophoblastic activity. $\beta$-HCG has been reported to indicate abnormal progression in patients with eroding vessels or existing haematoma. Therefore, the return of $\beta$-HCG to normal values might reflect residual trophoblastic activity. Although it was difficult to determine the size and status of the ectopic pregnancy pre-operatively, careful ultrasound examination might be of use in making the diagnosis of early ectopic gestation. The appearance of an anterior bulging mass outside the contour of the uterus during pregnancy should raise the suspicion of ectopic pregnancy, especially when the patient has received a prior Caesarean section. Nevertheless, the diagnosis is sometimes not made until the uterus ruptures and the patient develops haemoperitoneum and hypovolaemic shock. In these circumstances, a hysterectomy is usually required, as described previously (Huang et al., 1998).

Dilatation and curettage is one of the contraindications in ectopic pregnancy in a previous Caesarean section scar; this
procedure may cause uterine perforation inducing intractable bleeding, and laparotomy or even hysterectomy is often required. Thus, both ultrasonography and hysteroscopy provide useful information for an early and accurate diagnosis. The hysteroscope allows the cervix and the uterine cavity to be distented with relatively little trauma. The hysteroscopic findings of a normal uterine cavity, together with gestation tissue at the lower corpus, were further evidence of the likelihood of ectopic pregnancy.

There is still a lack of information concerning the adequacy of management strategies for previous Caesarean section scar pregnancy including local injections of potassium chloride (KCl), methotrexate (MTX) or abdominal hysterectomy. No modality is entirely reliable, and none can guarantee uterine integrity. The effectiveness of operative laparoscopy in the treatment of the reproductive and gynaecological lesion is well established. In our hospital, laparoscopic hysterectomy is now employed in the vast majority of hysterectomies. In cases of intractable bleeding during operative laparoscopy, laparoscopic hysterectomy can serve as an immediate alternative. In our patient, the absence of a viable fetus, and the lack of significant flow on Doppler sonography, enabled us to perform operative laparoscopy as a diagnostic modality. Therefore, in addition to its value as a diagnostic tool, laparoscopy enabled the successful treatment of an unruptured ectopic pregnancy in a previous Caesarean scar, making it possible to avoid unnecessary exploratory laparotomy and to preserve the patient’s reproductive capability.

In short, pregnancy in a previous Caesarean section scar is the rarest kind of all ectopic pregnancies and probably one of the most dangerous because of the risk of rupture and haemorrhage. No treatment modality is entirely reliable, and none can guarantee uterine integrity. In this case, hysteroscopy together with laparoscopy proved to be a reliable method for diagnosing and managing ectopic pregnancy in a previous Caesarean section scar and it enabled uterine preservation.

References

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