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COMMUNICATION

Laparoscopic management of ovarian ectopic pregnancy misdiagnosed at elective surgical termination of pregnancy: a report of two cases and review of the literature

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Abstract Although ectopic pregnancy diagnosed after elective termination of pregnancy is a very rare event, the incidence is increasing. The risk of mortality among women with ectopic pregnancy undergoing termination of pregnancy is 1.3 times higher than for women with ectopic pregnancy not undergoing a termination of pregnancy. Ovarian pregnancy is one of the rarest forms of ovarian pregnancy, sometimes difficult to diagnose as it can be confused with a tubal ectopic pregnancy or a haemorrhagic ovarian cyst. Early diagnosis of this rare entity is now possible owing to the developments in transvaginal ultrasound and availability of highly specific radioimmunoassay for the human chorionic gonadotrophin. Once the diagnosis has been made and surgical treatment planned, operative laparoscopy is a simple, safe and effective method of treating the majority of cases of ovarian ectopic pregnancy. We report two cases of ovarian ectopic pregnancy diagnosed following surgical termination of first trimester pregnancies and safely managed with operative laparoscopy. Our aim is to highlight the importance of proper ultrasonographic evaluation before termination of pregnancy and that ovarian ectopic pregnancy should be considered in the differential diagnosis of women presenting with abdominal pain after therapeutic termination of pregnancy.

Keywords Laparoscopy · Ovarian pregnancy · Termination of pregnancy

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Introduction

Induced abortion is one of the most commonly performed gynaecological procedures in UK. Ovarian ectopic pregnancy (OEP) is a rare variant of ectopic gestation. Its incidence has been variously reported as 1 in 7,000 to 1 in 60,000 deliveries and accounts for 1% to 3% of all ectopic gestations [1]. Ovarian ectopic pregnancy diagnosed after elective termination of pregnancy is an extremely rare but very serious event and has been associated with death if not timely diagnosed and managed. The risk of mortality among women with ectopic pregnancy undergoing termination of pregnancy is 1.3 times higher than for women with ectopic pregnancy not undergoing a termination of pregnancy [2].

In patients with lower abdominal pain and who have had spontaneous or elective abortion, the differential diagnosis should include coexisting or missed ectopic pregnancy. Failure to diagnose this condition can have very serious consequences [3].

The gold standard for the surgical management of ectopic pregnancy is operative laparoscopy [4], but ovarian ectopic pregnancies are also increasingly being managed with the operative laparoscopy.

Here, we report our experience of laparoscopic management of two cases of ovarian ectopic pregnancy which were diagnosed following elective "termination" of first trimester pregnancy.

Case 1

A 40-year-old, para 4 was referred to our hospital from the local termination of pregnancy services, with a history of having had a termination of pregnancy at 8 weeks gestation

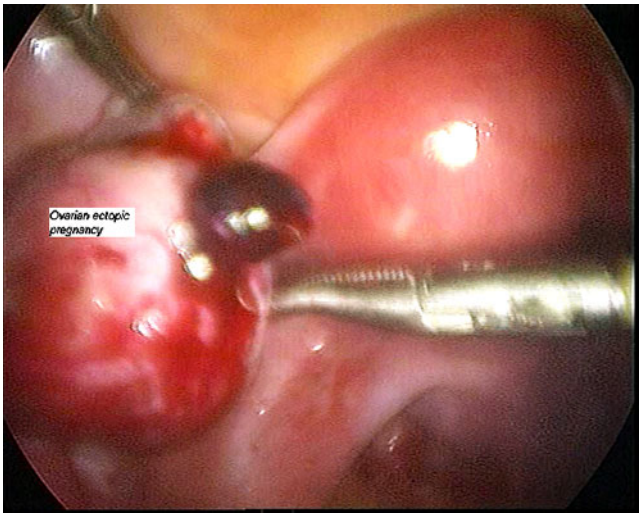

Fig. 1 Laparoscopic picture of ovarian ectopic pregnancy

which was confirmed by transabdominal ultrasound. No product of conception was noticed during the procedure. A transvaginal ultrasound scan was then performed which revealed an empty uterine cavity, significant haemoperitoneum and a left-sided extra-uterine pregnancy. A presumptive diagnosis of ectopic pregnancy was made; hence, she was referred to our hospital for further management.

On arrival to gynaecology department, she was haemodynamically stable. Her haemoglobin was 13.1 g/dl and beta HCG was 2000 IU/ml. There was no abdominal distension, but she was very tender in her left iliac fossa. An emergency laparoscopy was performed which showed a 7×6-cm left ovarian haemorrhagic mass and significant amount of haemoperitoneum (Fig. 1). The left tube, right tube, the ovary and the rest of the pelvis were normal. A laparoscopic left oophorectomy was performed without any complications. Postoperative haemoglobin was 11 g/dl. She made an uneventful recovery and was discharged home the next day. The histopathology confirmed an ovarian ectopic pregnancy (Fig. 2). Beta HCG reached non-pregnant values after 5 weeks of follow-up.

Case 2

A 35-year-old lady was referred to our gynaecology emergency department following a termination of pregnancy at 7 weeks gestation confirmed as intrauterine by a transabdominal ultrasound scan. Likewise, in the previous case, no product of conception was noticed during the procedure. A subsequent transvaginal scan was then performed at the termination centre which revealed a suspected pelvic mass in the pouch of Douglas and an empty uterus. On arrival in the department, she was tachycardic and normotensive but was pale and clammy. Another ultrasound scan was performed, which showed significant haemoperitoneum in addition to the pelvic mass.

She was resuscitated with crystalloids and colloids, blood was cross-matched and she was transferred to theatre for an emergency laparoscopy. Her pre-operative haemoglobin was 7.5 g/dl and serum beta HCG was 4000 IU/ml.

At laparoscopy, she had 3 l of haemoperitoneum and a left ovarian ectopic pregnancy. The haemoperitoneum was aspirated, bleeding was arrested with bipolar diathermy, a wedge resection performed on the left ovary and three units of whole blood were transfused intra-operatively. The postoperative period was unremarkable, and she was discharged on the second postoperative day, with a haemoglobin level of 10 g/dl. Histology confirmed an ovarian ectopic pregnancy and beta HCG reached non-pregnant values after four weeks of follow-up.

Discussion

Induced abortion is one of the most commonly performed gynaecological procedures in Great Britain, with around 186,000 terminations performed annually in England and Wales and around 11,500 in Scotland [5]. Although ectopic pregnancy diagnosed after elective termination of pregnancy is a rare event, its incidence is rising. The rate has increased more than twofold, from 0.95/1,000 terminations during the period between 1971 and 1978 to 1.92/1,000 terminations during the period from 1979 to 1985 [6]. The risk of mortality among women with ectopic pregnancy undergoing termination of pregnancy is 1.3 times higher than for women with ectopic pregnancy not undergoing a termination of pregnancy [2].

Two similar cases have been reported in the literature [7, 8], but the circumstances and management were different to our cases. The first was a case of failed medical mid-trimester therapeutic abortion which underwent a laparoto-

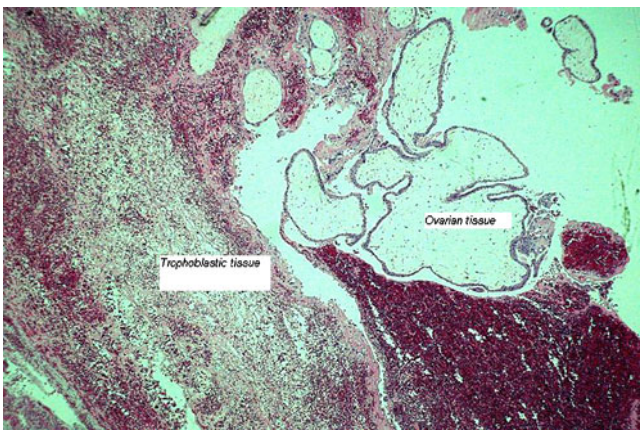

Fig. 2 Histology slide showing trphoblastic and ovarian tissue

my with the aim to perform a hysterotomy, but an ovarian pregnancy was incidentally diagnosed [7]. The other case was diagnosed 2 weeks following an attempted termination of second trimester pregnancy by a non-medical practitioner in a country where abortion is not legal [8]; it was again managed by laparotomy.

The cases presented in our report are interesting in terms of both the rarity of ovarian ectopic pregnancy and, more importantly, their diagnosis after elective termination of first trimester pregnancy and their successful laparoscopic management. To the best of our knowledge, this is the first series on this subject.

This paper also illustrates the importance of proper ultrasonographic examination in selected cases before elective termination of pregnancy. This is important not only to confirm intrauterine pregnancy but also to exclude the rare occurrence of heterotopic, tubal and ovarian ectopic pregnancy which, if missed, can have catastrophic effects on the patient's health.

The Royal College of Obstetricians and Gynaecologist guidelines advise that termination services must have access to ultrasonography, as it can be a necessary part of pre-abortion assessment, particularly where gestation is in doubt or where extra-uterine pregnancy is suspected. However, ultrasound scanning is not considered to be an essential prerequisite of abortion in all cases [5].

If ultrasound is to be used, transvaginal ultrasonography is the preferred method of diagnosing not only for intrauterine but also extra-uterine pregnancy. Though ovarian pregnancy is difficult to diagnose clinically due to non-specific clinical features, ovarian pregnancy can be diagnosed preoperatively with ultrasound [9]. But, this requires a high index of suspicion as well as skill in ultrasound.

Because of this difficulty in ultrasonographic diagnosis, when no products of conception are found intra-operatively at termination of pregnancy the diagnosis of OEP should always be on the list of possible diagnosis, and every effort should be taken to exclude the diagnosis of ovarian and other ectopic pregnancies, as in our reported cases.

Early diagnosis and management of these patients is mandatory because if an ectopic pregnancy is not suspected at the time of the termination of pregnancy, women are at high risk of misdiagnosis during the postabortive period. Generally, the abdominal pain and irregular vaginal bleeding that are common presenting symptoms in ectopic pregnancy are also described in 70–80% of termination of pregnancies [10]. Furthermore, these symptoms may be ascribed to abortion complications, such as retained products of conception or postoperative infection rather than to ectopic pregnancy [11].

In the absence of products of conception intra-operatively combined with acute abdominal pain after termination of pregnancy, the differential diagnosis of OEP should be strongly suspected and managed aggressively. Ultrasound should be urgently sought and if the diagnosis of OEP is suspected, operative laparoscopy where expertise exists should be preferred. We demonstrate with our two cases that ovarian ectopic pregnancies can be just as easily treated with the laparoscope as other types of ectopic pregnancies.

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