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Laparoscopic Treatment of a Twisted Hyperstimulated Ovary After IVF

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ABSTRACT

Ovarian Hyperstimulation Syndrome (OHSS) is a common problem associated with modern In-Vitro Fertilisation techniques (IVF). However, torsion of a hyperstimulated ovary occurring after IVF is a much rarer event. In this case report, we will describe the laparoscopic management of a pregnant patient with a twisted hyperstimulated ovary after an IVF programme.

Keywords: Adnexal torsion, ovarian hyperstimulation, IVF.

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INTRODUCTION

Ovarian Hyperstimulation Syndrome (OHSS) is a common problem associated with modern In-Vitro Fertilisation techniques (IVF)[1]. However, torsion of a hyperstimulated ovary occurring after IVF is a much rarer event. In this report, we will describe the laparoscopic management of a twisted hyperstimulated ovary after an IVF programme.

CASE REPORT

A 38-year-old subfertile female was first seen in March 1998. Investigation of the couple revealed a normal semen analysis and a LH (2.7 iu/l)/ FSH (0.6 iu/l) reversal in the wife suggestive of polycystic ovarian syndrome. Her pelvic ultrasound scan was however unremarkable with no abnormal adnexal masses seen.

She had her first IVF cycle in November 1998 for which she was down-regulated with subcutaneous Buserelin (Long protocol) and stimulated with three ampoules of FSH daily. Transvaginal oocyte recovery (OR) was performed on Day 15 and 18 eggs were retrieved. IVF was carried out and seven oocytes were fertilised. She subsequently had three embryos replaced transcervically.

However, she later presented eight days post OR with abdominal distension and vomiting suggestive of OHSS. Clinically, she had no shifting dullness but a pelvic scan showed fluid in both paracolic gutters. The ovaries were also enlarged : right (80 x 70mm) and left (129 x 89mm). A chest X-ray was also suggestive of a small pleural effusion on the right side. Lab investigations included haemoglobin 14.9g/dl; haematocrit 46.4%; platelets $544x10^9$/L; albumin 32g/dl. Her urea and electrolytes as well as the rest of her liver function tests were normal. She was treated with intravenous albumin and was well on discharge four days later.

Her blood HCG (human chorionic gonadotrophin) levels on day 16 and 18 (after OR) were positive for pregnancy.

She was admitted again one week later with lower abdominal pain. A pelvic scan done at five weeks and five days of gestation showed an intra-uterine gestational sac. Both ovaries were enlarged, the left ovary (86 x 61 mm) larger than the right (63 x 48 mm). The left ovary was also noted to be high over the fundus of the uterus. Both ovaries were non-tender at the time of the ultrasound examination. Her pain settled spontaneously and she was discharged two days later.

Unfortunately, she was re-admitted one day later with sudden onset left iliac fossa (LIF) pain. Clinically the patient was very distressed and a tender vague mass in the LIF was felt. Ovarian torsion was suspected and she had an emergency laparoscopy performed the same day.

At laparoscopy, an enlarged multicystic left ovary (6 cm) lying anterior to the uterus was found and this was twisted two times around its pedicle. The right ovary (4 cm) in the Pouch of Douglas was not twisted. The left ovary was untwisted laparoscopically and observed until a normal colour returned. By lifting the uterus forward, the untwisted left ovary was then re-positioned snuggly in the Pouch of Douglas.

The patient's post-operative recovery was uneventful and she was discharged well two days later.

The rest of her pregnancy was relatively unremarkable with no more recurrence of ovarian torsion.

She eventually went into spontaneous labour at 39 weeks of gestation and delivered a healthy 2.835 kg baby girl.

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DISCUSSION

The incidence of ovarian torsion after IVF treatment has been reported to range from 0.08% to 0.13%[2,3]. In addition, ovarian torsion has also been noted to occur in patients with OHSS following either gonadotrophin therapy[4,5] or after IVF[6]. This is not surprising as the enlarged multicystic ovaries associated with OHSS can certainly predispose to sudden adnexal torsion.

The risk of ovarian torsion associated with OHSS also seems to increase if the patients do subsequently conceive. For example, Mashiach et al[5] studied the incidence of adnexal torsion of hyperstimulated ovaries in pregnancies after gonadotrophin therapy. A total of 201 treatment cycles complicated by OHSS in 154 patients were analysed. Pregnancies occurred in 75 cycles (37.3%) but among these, 12 (16%) had torsion of the ovary or adnexa. In the remaining 126 cycles (62.6%) with no pregnancies, torsion of the ovary was noted in only 3 patients (2.3%). The reported differences in the incidence of torsion between patients who became pregnant and those who did not conceive, was statistically significant ($P < 0.001$). As in our case report, the problem of ovarian torsion associated with OHSS in a patient conceiving after IVF has also been reported by Ben-Rafael et al[6]. Kemmann et al[4] have also suggested that in the presence of pregnancy (especially multiple), the enlarging uterus may stretch the utero-ovarian ligaments and push the ovaries out of the pelvis. This may then predispose these enlarged ovaries to torsion. Note that in our patient, the enlarged left ovary was found on top of and anterior to the uterus when it had twisted. Once it was untwisted and placed snuggly in the Pouch of Douglas, no further torsion episodes were experienced.

Ovarian torsion commonly presents with acute lower abdominal pain and a tender palpable pelvic mass[5,7]. In a study by Mashiach et al[5], the clinical features of 12 pregnant patients with OHSS and ovarian torsion were analysed. They found that symptoms characteristically appeared acutely between six and 13 weeks gestation. In addition, the time interval between onset of symptoms and admission to hospital ranged from 20 to 150 hours (mean 43 hours). The delay from hospital admission to surgery was 3 - 72 hours (mean 15.5 hours). Our patient was admitted twice for lower abdominal pain. The first was at five weeks and five days of gestation when she presented with mild lower abdominal discomfort. At that time, the left ovary was noted to be enlarged and located high over the uterine fundus. Both ovaries were however not tender and her pain subsequently settled with observation. The patient was however re-admitted the next day and during this admission, the abdominal pain was noted to be more severe and a tender mass in the left iliac fossa was felt. A diagnosis of ovarian torsion was made and she was sent to theatre within one hour of the diagnosis.

Although various forms of treatment have been reported in the literature for this condition[3-8], the key to a successful outcome is still early diagnosis and prompt surgical intervention. For example, simple untwisting of the ovary at the time of laparoscopy may be all that is required if the condition is picked up early[5,6,8]. In fact several authors[5,7] have shown that the unwinding procedure is not associated with any complications and also does not seem to affect the course of the pregnancy. In addition, the treated adnexa were also able to recover functionally later on, as evidenced by the presence of follicular growth.

Other concomitant techniques (e.g. aspiration and cystectomy) that can be used to help decompress the enlarged ovary, have also been reported[5,6].

On the other hand, late diagnosis will often result in a devitalised ovary that is beyond salvage. In this situation, an adnexectomy or ovariectomy may be the only other option left[3,5]. It is thus fortunate that our patient was operated on early and a simple untwisting with replacement in the Pouch of Douglas, was all that was required.

CONCLUSION

Adnexal torsion is a rare but recognised complication that can occur in pregnant patients with hyperstimulated ovaries after an IVF programme. With the increasing use of IVF and other assisted reproductive techniques, physicians involved in the care of these women must be aware of the possibility of adnexal torsion. This awareness is important as early recognition and prompt intervention can result in the salvage of the affected ovary. Finally, laparoscopic unwinding of the affected ovary is a simple and effective technique that can be used in this situation.

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