CASE REPORT

Ovarian abscess after ovum retrieval for in-vitro fertilization

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An ovarian abscess is an uncommon surgical emergency that could be lethal. The causes of an ovarian abscess vary, and treatment thereof may unfortunately lead to an oophorectomy. In order to draw the attention of physicians to this rare entity, we present a case of ovarian abscess resulting from follicle aspiration for in-vitro fertilization. Furthermore, with correct preoperative diagnosis and prompt surgical intervention at an early stage, the affected ovary may be salvageable.

Key words: case report/IVF/laparoscopy/laparotomy/ovarian abscess

Introduction
An ovarian abscess is defined as a primary infection of the ovary without the involvement of the Fallopian tube, whereas a tubo-ovarian abscess involves both the Fallopian tube and the ovary. Primary ovarian abscess is a rare occurrence (Wetchler and Dunn, 1985); however, it can be life-threatening, especially on rupture. We present a rare case of a woman who developed an ovarian abscess after oocyte aspiration for the purpose of in-vitro fertilization (IVF), and was treated with drainage of the abscess and preservation of the ovary by laparoscopy and laparotomy. Although rare, this entity should be considered in the differential diagnosis of abdominal pain, fever and leukocytosis in a patient after ovum retrieval for IVF. Early surgical intervention is recommended in order to salvage the affected ovary (Stubblefield, 1991).

Case report
A 31-year-old, gravida 0, para 0, who underwent IVF-embryo transfer because of her partner’s infertility, was admitted to our gynaecological emergency room, 6 days after the procedure, with increasing lower abdominal pain and fever of 38.1°C. Overall, 15 oocytes were retrieved, seven from the right ovary and eight from the left, through two transvaginal ultrasound-guided punctures. Follicle flushing was performed twice in each ovary. Prophylactic antibiotics were not used. Clinical examination revealed a normal pulse and blood pressure. No signs of acute abdomen were evident, but a sensitive area at the right iliac fossa was felt. On pelvic examination, a tender 6×8 cm² right adnexal mass was palpated.

Laboratory tests were normal, except for an elevated white blood cell count (WBC) of 16 100 per mm³. Vaginal ultrasound detected a right 7.8×8.3 cm² intra-ovarian cystic mass. No free peritoneal fluid was observed. Intravenous penicillin 20×10⁶ IU/day, gentamycin 240 mg/day, and clindamycin 1800 mg/day were initiated. As there was neither resolution of the febrile state nor pelvic pain in 36 h, and the WBC rose to 20 400 per mm³, laparoscopy was performed.

Laparoscopy demonstrated severe pelvic adhesions involving both adnexae. Visualization of the ovaries or other pelvic organs was impossible, thus laparotomy was performed. During the operation, extensive adhesiolysis was carried out. The uterus and left adnexa were completely mobilized, inspected, and found to be normal. The right ovary was also mobilized; at 6×8 cm², it was enlarged, and on palpation was felt to be cystic. The cyst was drained of a greenish pus-like fluid. The abdomen was copiously irrigated and the procedure terminated.

The patient’s postoperative course was uneventful. Cultures of the fluid grew Enterococcus sensitive to gentamycin and clindamycin. The fever dropped 48 h after the operation, and the patient was never febrile during hospitalization. Upon discharge, the WBC was 6200 per mm³. An ultrasound performed 1 month later revealed no evidence of cysts in the right ovary.

Discussion
Since 1869, only 125 cases of primary ovarian abscess have been reported in the related English literature. Wetchler and Dunn (1985) reviewed 120 cases up to 1985, and Stubblefield (1991) added five cases. The possible factors for the cause of ovarian abscesses are: disruption of the ovarian capsule, giving bacteria access to the ovarian stroma, and haematogenous and lymphatic spread (Wetchler and Dunn, 1985). Nevertheless, the most common mechanism is considered to be alteration of the ovarian capsule at the time of ovulation, or by penetration during surgery or surgical procedures. The interval between capsule disruption and clinical presentation may vary, depending on the bacterial inoculum dose, type of bacterium, its virulence and whether the infection occurred secondary to
a direct contamination at surgery, or spread through devitalized tissue (Moniff, 1993).

The aforementioned complication has been reported to occur after vaginal hysterectomy, ovarian cystectomy, Caesarean section, during pregnancy and with the use of an intrauterine device (Wetchler and Dunn, 1985; Bracha et al., 1988). Furthermore, transvaginal or percutaneous needle aspiration of an endometrioma have been considered in the causation of this rare phenomenon (Martino et al., 1984; Padilla, 1993).

Ultrasonically guided vaginal oocyte collection is a relatively atraumatic method with rare complications. This technique has now become the method of choice in most IVF–embryo transfer programmes, because it results in excellent oocyte yields, with increased speed and excellent follicle, as well as major pelvic vessel visualization, thereby decreasing the probability of vessel puncture (Wikland et al., 1989). Nevertheless, despite the advantages, there are some inherent risks, such as injury to blood vessels and haemoperitoneum, trauma to pelvic organs, infection or exacerbation of pelvic inflammatory disease, rupture of endometriotic cystic masses, urinary tract infections and hyperstimulation (Howe et al., 1988; Scoccia et al., 1992; Dicker et al., 1993; Coroleu et al., 1997).

Reports on the formation of an ovarian abscess after ovum retrieval for IVF are scant (Padilla, 1993). Moreover, the case reported by Padilla (1993) occurred during ovum retrieval while an endometriotic cyst was punctured, thus making ours the first case of ovarian abscess to occur after follicle aspiration without any subtle pelvic pathology.

Ovarian abscess after ovum retrieval may be a severe complication that requires accurate diagnosis and prompt intervention. Initial treatment is with intravenous antibiotics. Nevertheless, when no response to antibiotics occurs within 72 h, if the abscess ruptures, or if surrounding organs are affected by the inflamed mass, immediate laparoscopy or laparotomy with removal of the ovary is the treatment of choice. In our case, we were only partially able to drain the abscess by laparoscopy, as severe pelvic adhesions secondary to the abscess formation prevented completion of the operation.

We conclude that although most complications of ultrasonographically guided ovum retrieval are mild, severe life-threatening complications, e.g. ovarian abscess, may occasionally occur. These should be reported to draw attention to their occurrence, aiming at prevention.

Prophylactic oral broad-spectrum antibiotic therapy, when using the vaginal route of ovum aspiration, or when pelvic inflammatory disease or other intra-abdominal infection has occurred in the past, is recommended.

References

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