Successful laparoscopic management of adnexal torsion during week 25 of a twin pregnancy

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Adnexal torsion is a rare occurrence during pregnancy. Here we present a case of adnexal torsion during the 25th week of pregnancy, which was managed laparoscopically. The woman had achieved a successful twin pregnancy after in-vitro fertilization/intracytoplasmic sperm injection. She was admitted to the emergency department with acute abdominal pain. Abdominal ultrasound with colour Doppler mapping of the intra-ovarian blood flow showed adnexal torsion. Laparoscopic management was successfully carried out.

Key words: adnexal torsion/colour Doppler/laparoscopy/twin pregnancy

Introduction

Adnexal torsion is an uncommon cause of surgical emergency. It usually occurs during reproductive age with an incidence of 2.7% of all gynaecological emergencies (Mancuso et al., 1997). Its incidence is 1 in 5000 (Mancuso et al., 1997) during pregnancy, occurring more frequently in the first trimester after IVF and ovarian stimulation as treatment for infertility. The clinical symptoms are non-specific and could be confused with other acute abdominal conditions. The correct use of colour Doppler sonography might allow specific preoperative diagnosis (Gordon et al., 1994). This may be possible during pregnancy; however, the more developed the uterus is, the more difficult it is to clearly localize the adnexa. Traditionally, such complications during pregnancy have been managed by means of laparotomy. Recently, Levy et al. (1995) reported successful unwinding of a twisted adnexa during the second trimester of pregnancy. We report a case of adnexal torsion at the beginning of the third trimester of pregnancy.

Case report

A 33-year-old woman, gravida 1, was admitted to the Emergency Department when she was in the 25th week of gestation. She conceived after her first in-vitro fertilization attempt. The indication was male infertility and the female status was normal. The stimulation protocol permitted the retrieval of 12 oocytes after administration of 16 ampoules of HMG. Three embryos were replaced into the uterine cavity and she received 30 mg/day of dyhydrogestone (Duphaston®, Duphar, Paris, France) as luteal support. She presented with mild ovarian hyperstimulation syndrome (OHSS) which resolved spontaneously during the first trimester of pregnancy. Five weeks after embryo transfer, the sonography visualized two intra-uterine gestational sacs with two viable embryos. At this time, the ovaries were slightly enlarged with left and right ovary measurements of 5×4 cm and 6.1×4 cm respectively. The patient was followed up every 4 weeks and the pregnancy course was uneventful.

At 25 weeks, the patient complained of left flank and lower abdominal pain. She also reported an episode of nausea and vomiting prior to admission. She was afebrile (36.4°C) and had urinary frequency with dysuria. There was no uterine contractility, vaginal bleeding nor any bowel symptoms. The examination was consistent with a 25-week twin pregnancy gestation. The uterine height was 26 cm above the symphysis. There was tenderness on palpation of the left flank. Deep palpation on this side provoked abdominal guarding. The vaginal examination showed a normal cervical status. The abdominal ultrasound was consistent with a 25-week pregnancy without placental or uterine abnormalities. Both fetuses were moving and had normal cardiac activity. No periappendicular inflammation was detectable and no bowel dilatation or ascites were seen. The right adnexa was normal and the left one was slightly enlarged without evidence of cystic formation.

Doppler mapping showed diminished left ovarian vascular flow when compared to the right ovary. The resistance index measurement showed an absence of diastolic flow. The white blood cell count, c-reactive protein, hepatic enzymes, and the ionogram were within the normal range. Urine analysis revealed bacteriuria but with a negative culture. Because the diagnosis of adnexal torsion cannot be made with any certainty only on the basis of decreased vascular flow, it was decided to treat the patient with antibiotics and pain killers, which gave a slight improvement in the symptomatology. Thirty-six hours later the pain had increased with recurrence of nausea and vomiting. Laboratory data showed a white blood cell count of 18 900/mm³ and a c-reactive protein concentration of 7.8 mg/dl. Sonographic control revealed an enlarged left adnexa with absence of vascular flow (Figure 1). The significant change in ovarian blood flow in 36 h was a strong argument.
in favour of the diagnosis of adnexal torsion and an open laparoscopy was performed. The patient was well informed of the risk of surgery and the possible need for laparotomy. The post-operative course was normal and the patient delivered two healthy children of 1440 and 1400 g vaginally at 33 weeks of gestation. The postpartum was uneventful.

Operative technique

Emergency laparoscopy was performed on this patient. A small incision of 2 cm was made in the left upper abdominal quadrant (Figure 2) and a 10-mm trocar was introduced under visual control, i.e. the ‘open laparoscopy technique.’ A slight pneumoperitoneum was induced with an insufflation volume of CO₂ of 1 l/min and an intra-abdominal pressure of 10 mmHg. The patient was kept in a horizontal position. The laparoscopic findings showed left adnexal torsion with an ischaemic and oedematous ovary (Figure 3). The 10-mm trocar was placed on the left side and secondary trocars were inserted at opposite sites, one in the right upper abdominal quadrant and the other on the extreme left of the middle abdominal quadrant (Figure 2). These secondary trocars were inserted similarly to the 10-mm trocar under direct visual control. This permitted their introduction without any pressure on the abdominal wall. Two atraumatic probes were introduced into these trocars; one on the left side, allowing washing and gentle pressure on the uterus in a brief lateral Trendelenburg position, with the other probe elevating the twisted adnexa, pushing it contralaterally to the direction of rotation. Serial manipulations achieved the unwinding of the adnexa. The lateral Trendelenburg position was then abandoned and after abundant washing, the procedure was stopped for 10 min, with desufflation of the abdominal cavity. Once the procedure resumed, the pedicle of the ovary and the tube were carefully examined and an improvement in colour and a decrease in oedema were noted. These signs established the beginning of recovery of this adnexa, which turned pink shortly after the procedure. Because no ovarian cyst was clearly individualized, we did not puncture the ovary and we ended the procedure. Monitoring of the uterine contractions and fetal heartbeat was carried out during the entire procedure.

Discussion

Adnexal torsion during pregnancy is a rare condition. It has been described as a severe complication of OHSS and after ovarian stimulation for IVF (Maschiach et al., 1990), with the highest incidence during the first trimester of pregnancy. The enlarged stimulated ovaries, floating in the pelvic ascites, may explain this association. This condition is rare during the second trimester (Gordon et al., 1994) and exceptional during the third trimester (Mancuso et al., 1997) of pregnancy. Since the successful conservative management of adnexal torsion by laparoscopy was described by Mage et al. (1989), this technique has been extended for the management of such conditions during pregnancy (Mancuso et al., 1997). Early diagnosis is
of utmost importance, since it can facilitate the conservative approach. However, it has also been established that when diagnosis is delayed and the adnexa appears ischaemic and haemorrhagic, the conservative approach, namely simple detorsion, is possible with good functional results (Maschiach et al., 1990; Oelsner et al., 1993). The use of colour Doppler sonography has proved useful for such a diagnosis, the main sign being the absence of intraparenchymal ovarian blood flow (Gordon et al., 1994). However, decreased flow should not rule out the suspicion of adnexal torsion. It depends on the stage of torsion and the degree of vascular compromise. It is known from pathological findings that venous and lymphatic stasis occur early in torsion and arterial flow may only be decreased at this stage. In our case, the first ultrasound with colour Doppler showed decreased intra-ovarian blood flow. This could have been the result of incomplete torsion. The volume of the uterus may limit the movements of the adnexa, which completes its rotation later on. In these conditions, especially since the clinical signs and laboratory findings were normal, we were unable to confirm the diagnosis on admission. However, close monitoring, which showed a worsening of symptoms and the disappearance of ovarian flow, permitted a timely management with the conservative approach. Indeed, the significant change in ovarian blood flow in 36 h must be considered as a strong argument in favour of the diagnosis of adnexal torsion.

Although laparoscopy has been described in early pregnancy, advanced gestation can present significant difficulties, namely possible injury to the enlarged uterus, and cardiovascular and respiratory alterations during the pneumoperitoneum and Trendelenburg position. Penetrative injuries are likely to occur at the beginning of the procedure with the insufflation needle, and subsequently the trocar. To avoid this, many guidelines are available in normal conditions (Bassil et al., 1993). However, during advanced pregnancy, the best choice may be insertion of the needle and trocar under sonographic control, or the realization of an open laparoscopy (Hurd et al., 1994). In our case, we chose the second option and the trocars were inserted, under visual control, through a small incision in the abdominal wall.

Unwinding of the affected adnexa is usually carried out by simply pushing the ovary contralaterally to the direction of the torsion. This can be performed with the aid of two probes without grasping the tissue, to avoid bleeding. The release of pressure ensures the normal positioning of the adnexa. After unwinding, aspiration of ovarian cysts, if present, is recommended. However, this is not always possible since cysts are often filled with clotted blood. In our case, unwinding was possible and there were no ovarian cysts. Having observed a satisfactory recovery (recoloration and disappearance of congestion), we ended the surgical operation.

Although reports of laparoscopic surgery during advanced pregnancy are rare, it is clear that compared to laparotomy, this procedure may be better tolerated by the patient because of minimal postoperative discomfort and the avoidance of a midline abdominal scar in the presence of a growing uterus and a forthcoming delivery. The uncommon insertion of trocars and the very low incidence of adnexal torsion during the third trimester of pregnancy strongly suggest that this laparoscopic procedure be carried out only by practitioners who have wide experience in operative gynaecological laparoscopy.

In conclusion, although this complication is extremely rare in the third trimester of pregnancy, it must nevertheless be taken into consideration in the differential diagnosis of abdominal pain. In our case, the ovary was only slightly enlarged, proving that adnexal torsion can occur even in the absence of ovarian cysts.

References


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