Heterotopic pregnancy is defined as the coexistence of normal intrauterine and ectopic pregnancies. It is a rare event in natural conception cycles, occurring in around 1:30,000 pregnancies, but is much more frequent in the setting of in-vitro fertilization pregnancy (1:500). This rare event can be fatal for both mother and fetus, and may prove challenging to diagnose correctly.

Case Description
A 32 year-old woman with an 8 week pregnancy after natural conception and no previous history of abdominal surgery was admitted to the gynecological emergency department with a 48-hour history of acute abdominal pain. Previous history included four natural childbirths and one miscarriage. Abdominal pain started in the periumbilical region, and migrated to the right iliac fossa and lumbar region within a few hours. She had no fever, nausea or vomiting, and no abnormal vaginal discharge or bleeding.

She underwent abdominal and endovaginal ultrasonography which revealed an intrauterine pregnancy, equivalent to 8 weeks gestational age (Figure 1) as well as a 3 cm finding in the right ovary, attributed to a corpus luteum cyst. Furthermore, a moderate amount of free fluid was noted in the right upper quadrant, with abdominal ultrasonography suspicious of acute appendicitis (Figure 2).

The patient was transferred to the general-visceral surgery department based on the diagnosis of acute appendicitis. Blood labs were essentially normal, including RBC and WBC counts, and C-reactive protein. Clinical examination revealed abdominal tenderness in the right iliac fossa and the right flank, without guarding. Hemodynamic parameters were normal and stable. Based on the clinical and sonographic findings suggestive of acute appendicitis and weighing up the risks and benefits of carrying out a CT scan in the first trimester, the decision was made to directly perform an explorative laparoscopy.

Just as surgery was about to commence, the patient showed signs of hemodynamic instability for the first time, with haemoglobin levels dropping from 124 to 69 g/L. Fluid resuscitation included administration of 500 ml of 0.9% NaCl and 2 units of packed RBC.

Diagnostic laparoscopy was started, revealing a 2-liter hemoperitoneum and a ruptured, hemorrhagic right ampullary pregnancy. Both ovaries were normal, and a regular surface of the gravid uterus noted. Further exploration revealed a normal appendix and Fitz-Hugh-Curtis’ adherences (Figures 3,4,5).

Right salpingectomy was performed in order to achieve haemostasis. Appendectomy was also performed in the same setting. Histological work-up of the excised specimen showed a ruptured tubal pregnancy with the presence of chorionic villi. The postoperative endovaginal ultrasound confirmed an unaltered, intact intra-uterine pregnancy. The patient had an uneventful post-operative course, and was discharged 48 hours after surgery. In September 2012, she delivered a healthy baby girl at 40 weeks of gestation.

Discussion
Heterotopic pregnancy remains a rare occurrence during natural pregnancy, affecting approximately 1:30,000, and is often difficult to diagnose early enough to avoid tubal rupture. Defined as the simultaneous development of a normal and an ectopic pregnancy, 98% of heterotopic pregnancies are tubal, with 70% of patients receiving a diagnosis between the 5th and the 8th gestational week.

60% of patients have a history of pelvic inflammatory disease (PID), salpingitis, previous tubal surgical intervention, pelvic surgery (appendicectomy) or assisted reproductive procedures. Our patient did not have a history of previous abdominal surgery or PID, but diagnostic laparoscopy revealed characteristic adherences between the liver and the parietal peritoneum characteristic of a previous Chlamydia or Gonococcal infection (Fitz-Hugh-Curtis) (Figure 5)

Typical clinical presentation of heterotopic pregnancies includes acute pelvic pain in 83%, half of all patients have vaginal bleeding, and 13% hypovolemic shock. Despite a low sensitivity, endovaginal ultrasonography remains the gold standard to allow for a correct diagnosis to be made.

Differential diagnoses include acute appendicitis, salpingitis, symptomatic ovarian cysts, adnexal torsion, abortion or corpus luteum cyst. Our patient illustrates the fact that, even in the setting of a normal intrauterine pregnancy, urgent explorative laparoscopy should be considered in case of acute abdominal pain and free intra-abdominal fluid. Salpingectomy remains the treatment of choice for an extra-uterine heterotopic pregnancy with tubal rupture, preferably laparoscopically, reducing any manipulation of the gravid uterus.

Conclusion
In very rare cases, heterotopic pregnancy occurs simultaneously with a normally developing intra-uterine pregnancy. Correct diagnosis can be challen-
ging, but in the setting of acute abdominal pain with evidence of free intra-abdominal fluid, a diagnosis of concomitant heterotopic pregnancy needs to be considered as a possible cause. In such cases, or when the diagnosis remains inconclusive, explorative laparoscopy may reduce maternal and foetal morbidity and mortality. As most heterotopic pregnancies are typically discovered between 5-8 weeks of gestation, laparoscopic exploration and treatment remains favourable.

References


