

Minilaparotomic incision for haemorrhagic corpus luteum: a case report

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SUMMARY: Minilaparotomic incision for haemorrhagic corpus luteum: a case report.

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Corpus luteum cyst rupture with consequent hemoperitoneum is a common cause of admission to the emergency room.

This condition is frequently misdiagnosed because of overlapping of clinical findings in acute gynecologic diseases. However, an incorrect identification may lead to delay in surgical treatment, which can

be a life-threatening condition.

Ultrasound (US) is the first technique used for diagnosis that can confirm or dismiss the presence of intraperitoneal fluid. Secondly, the contrast-enhanced computed tomography (CT) is the quickest way to identify the site of active bleeding and to establish the correct management of the clinical condition.

Herein, we report a case of a 19-years-old girl with acute abdominal pain correctly identified by diagnostic images and treated with mini-invasive surgery techniques in order to quickly act without clinic and aesthetic sequelae.

KEY WORDS: Corpus luteum - Acute abdomen - Luteal cyst - Mini-invasive laparotomic incision.

Introduction

Acute abdominal and pelvic pain related to the gynaecological tract is a common syndrome presented in emergency departments (1-3).

Ruptured corpus luteum cysts frequently occur in adolescent and young women but are often misdiagnosed. Typically, clinical manifestations of this condition occur during the second half of the menstrual cycle and the course ranges from an asymptomatic state, that usually solves spontaneously (4), to severe peritoneal signs or life-threatening haemorrhagic shock.

In the suspicion of acute gynaecological disease,

a first medical evaluation is required to establish the pregnancy status of the woman in order to exclude an ectopic pregnancy. Laboratory tests could show a gradual decline of haemoglobin and mild elevation of inflammatory markers such as C- Reactive Protein (CRP) and leucocytes.

US examination could also demonstrate the inhomogeneous material accompanied by intra-abdominal effusion (hemoperitoneum) (5). However, US has its limitations in trying to identify where a haematoma is originating from. In addition, the nonspecific characteristics of the reported pain can make the CT a more attractive investigation for acute conditions since it can exclude other intra-abdominal causes (6), even if it is risk whenever intrauterine pregnancy arises.

Afterward, acute abdomen could be approached either with laparotomic or laparoscopic route. According to patient, a mini-invasive transversal suprapubic incision was carried out to reduce the risk of the infection of a large laparotomy and contem-

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porarily the aesthetic request. Compared with laparoscopy, the time of surgery was reduced, offering a better result.

Case presentation

A 19-year-old woman was admitted to the emergency room of Santo Bambino Hospital (OSB), in Catania (Italy) with sudden onset of lower abdominal pain, lasting for 6 hours. She reported to have been suffering from oligomenorrhoea with Polycystic Ovary Syndrome (PCOS) and her last menstrual period was 55 days back. Surgical history was silent.

During the physical examination, she reported no important sensory disturbance. She appeared nervous and anxious but alert and hemodynamically stable.

Early laboratory investigation showed mild leucocytosis (12,510 / μ L), haemoglobin level was within the normal range (13.8 g/dL), clotting measures (PT, aPTT, INR and fibrinogen) were normal and β -human chorionic gonadotropin (β hCG) level was 3.6 UI/L.

At the gynaecological examination, the uterus was regular in size as well as the left adnexum; right ovary was slightly increased of volume and painful.

Transabdominal US revealed a huge amount of fluid in the abdomen and in the pouch of Douglas. An anechogenic mass of 17 mm appeared on the contest of the right adnexum.

As a normal procedure, an abdominal CT before

and after injection of the iodinated contrast was urgently performed. The CT scan showed a copious abdominal effusion (hemoperitoneum) extended from the pelvis to the paracolic gutter and surrounding spleen and part of the liver. The hyperdense spot on the right adnexum site showed in CT was compatible with an active bleeding (Figure 1). The CT excluded other diseases of the intra-abdominal and pelvic organs.

Emergency mini-laparotomy (transversal suprapubic incision with an approximal diameter of 2,5 cm) confirmed a haemorrhagic corpus luteum as the cause of the massive hemoperitoneum. After the peritoneum incision, the right adnexum appeared congested with large perovarian clots. On the outer surface of the ovary, a corpus luteum was observed with active and abundant bleeding. During surgical procedure, about 500 cc of hematic fluid mixed to blood clots were drained. Subsequently, the right ovary was sutured and, before sewing abdominal mass an intraperitoneal drain was positioned.

Afterward, the patient was closely monitored and although vital parameters were stable (pulse rate 85 bpm, blood pressure 100/59 mmHg, SO_2 :100% and urine output was 200cc in 30 minutes) and since the rapid decrease of roughly 4 g/dL of haemoglobin, she received 200cc of plasma. During one-week operative course, the level of haemoglobin remained stable (8.5 g/dL).

Two days after the event the patient was in good clinical condition and completely satisfied with the surgical results (Figure 2).

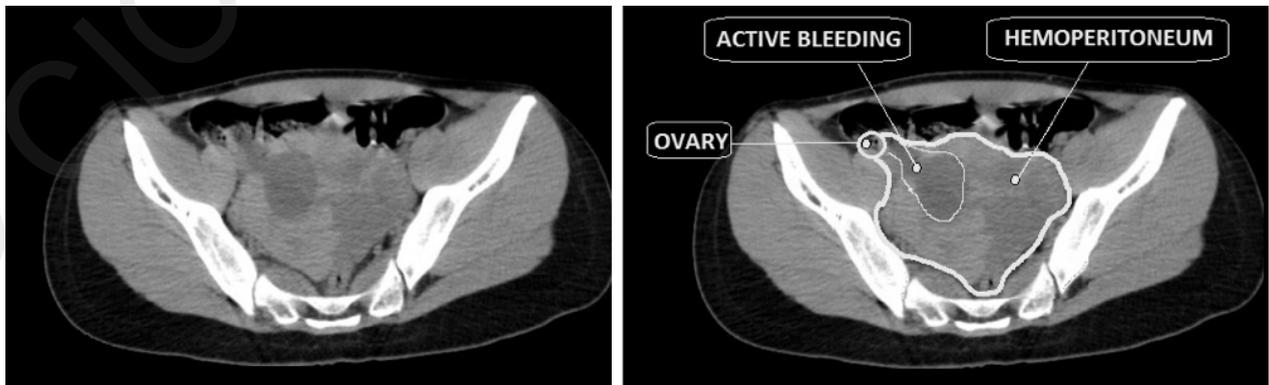


Figure 1 - Abdominal CT scan that shows a hyperdense spot on the right adnexal compatible with active bleeding.



Figure 2 - Representation of the suprapubic incision (A), ovary extrusion (B) and final mini-invasive surgery result.

Discussion

Rupture of a corpus luteum cyst is a common cause of intraperitoneal haemorrhage in woman of reproductive age. Nevertheless, very few cases in adolescence have been described in scientific literature (4, 7, 8).

Corpus luteum is formed during the luteal phase of the ovarian cycle. The natural history is either to regress as a corpus albicans when pregnancy does not occur or to continue until the complete maturation of the placenta by the end of first trimester (7). Being a thin-walled vascular structure corpus luteum tends to rupture and when bleeding occurs, haemorrhage may spread into the peritoneal cavity causing a condition named hemoperitoneum (1).

The diagnosis is based on a high historical suspicion (the patient generally is in the secretive phase of the ovarian cycle) with clinical manifestations similar to urinary and gastrointestinal diseases (9). Patients may suffer from a wide range of clinical signs, from no signs to severe peritoneal irritation which can be confused with an acute appendicitis. A common error is to confuse the ruptured corpus luteal cyst with a ruptured ectopic pregnancy, which may have a similar clinical aspect and both disease may have β -hCG positivity (7, 10).

Several imaging modalities play a significant role in diagnosing the ruptured corpus luteum cyst. In most presentations of gynaecological emergencies, US and CT can be the simplest and quickest ways to evaluate the patient. MRI might be used for a more accurate diagnosis although is more expensive (11, 12).

In this case, trans-abdominal US showed free abdominal fluid containing low-level echoes in the pelvis due to an ovarian haemorrhagic cyst. The CT showed a low-density image as an expression of the cystic lesion and active bleeding; extensive hyperdense free pelvic fluid (haemorrhagic ascites) was confirmed as well.

Usually, after diagnosing a possible rupture of corpus luteum cyst, the conventional treatment is conservative: intensive observation and hemodynamic support (13); however, if either massive hemoperitoneum or severe abdominal pain develops as in our case, immediate surgery is required to identify the cause of haemorrhage and, therefore, to stop the bleeding. Laparoscopic management of gynecological disorders is increasingly applied to achieve minimally invasive treatment. However, when performing mini-invasive surgery, especially under emergency situations, it is important to have great knowledge about the anatomical characteristics of the pelvic anatomy and consider the preservation of future fertility (5, 7, 8).

Emergency physician to laparotomic approach for hemorrhage control and better visualization of the abdomen (14), however, there are conflicting views about the correct management approach (15, 16).

A safer surgery approach was applied in this case. The mini-invasive single incision bringing the adnexum out of the pelvic site gave us the possibility to act quickly and without aesthetic sequelae. An abdominal drain was placed to control the hemorrhage. In addition, compared with the laparoscopic approach, a mini laparotomic gives a single incision

on the suprapubic area covered by hairs, maintaining the integrity of navel and avoiding an iatrogenic umbilical hernia. Gas insufflation, which represents a contraindication in some cardiologic and pulmonary disease, is avoided with mini-laparotomy offering less intrasurgical risk. Afterward, compared with the classic longitudinal laparotomy, the mini laparotomic route is advantageous for having a reduction of infections, laparocoele, and abdominal pain.

In literature, many cases of laparoscopic procedures for corpus luteum rupture have been published whereas a few cases of mini laparotomic surgery.

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The Authors do not have a direct financial relation with the commercial identities mentioned in the paper that might lead to a conflict of interests.

Conflict of interests

The Authors declare that there is no conflict of interests regarding the publication of this paper.

Authors' contribution

All the Authors of the paper gave their contribution to this work.

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