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Appendicular peritonitis and pregnancy: About two cases

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Abstract

Appendicular peritonitis and pregnancy is a rare and serious association. The clinical presentation is sometimes misleading because of the anatomical and physiological changes associated with pregnancy, often responsible for diagnostic hesitation and therapeutic delay that are detrimental to the mother and the unborn child. The maternal-fetal prognosis depends on the severity of the abdominal pathology.

We report the case of two patients aged 25 and 34, Admitted to gyneco-obstetrical emergencies for abdominal pain, postprandial vomiting and occlusive syndrome all on an evolving pregnancy of 12 and 18 SA. Clinical examination found on palpation a generalized contracture in one case, defense of the right hypochondrium. Fetal heart sounds were positive. Abdominopelvic ultrasound revealed intraperitoneal effusion in both cases without associated obstetric lesion. The abdomino-pelvic scan done in emergency allowed an individualization of a stercorite at the level of the FID, without clear visualization of the appendic .

All patients were operated on within 24 hours of admission. Laparotomy found in both cases a gangrenous and perforated appendix associated with an intraperitoneal effusion which was removed and then aspirated. Retrograde appendectomy, peritoneal cleansing plus drainage was performed in all cases. Tocolysis and antibiotic therapy were instituted , The postoperative follow-up was simple.

Keywords: Peritonitis; Appendix; Complication; Pregnency

1. Introduction

Appendicular peritonitis and pregnancy is a rare and serious association [1]. The severity is due to the delay in diagnosis in the face of often polymorphic and misleading symptomatology. The maternal-fetal prognosis depends on the severity of the abdominal pathology. However, fetal mortality remains high. The clinical symptomatology is crude and often misleading, especially at the end of pregnancy due to anatomical and physiological changes. The diagnostic difficulties and the therapeutic delay motivated the choice of this theme, the aim of this work of which is to describe the clinical, therapeutic and evolutionary particularity of appendicular peritonitis in pregnancy.

2. Patient and observation

-The first patient the patient was 31 years old, primigravida, with a current twin pregnancy at 18 weeks' gestation and no previous history, admitted to the obstetric emergency department on 14/09/2023 for abdominal pain localized at the level of the IDF, which had been present for 1 day prior to her admission, associated with several episodes of vomiting and fever.

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- On admission, general examination revealed a conscious patient, normocardial, normotensive, normocolored conjunctivae, febrile at 38.5°C.
- Physical examination revealed localized tenderness in the right iliac fossa, with tenderness over the rest of the abdomen.
- The rest of the clinical examination was normal.
- Biological examinations = haemoglobin = 7.4 / WBC= 15000 / crp = 85 / platelets = 300 000 / Renal function correct / Ionogram normal.
- Abdominal ultrasound performed on 09/15/2023: swollen laterocecal appendix reaching 12 mm in maximum diameter: aspect in favor of simple acute appendicitis with pelvic effusion.

The patient underwent surgery within 24 hours of admission. A median laparotomy straddling the umbilicus and extended subumbilically revealed a sphacelid digested retrocecal appendix with a healthy base and a purulent intraperitoneal effusion, which was removed for bacteriological examination and then aspirated. The operation consisted of appendectomy after ligation and section of the meso appendicular, closure of the appendicular stump with a 3/0 vicryl stitch. Peritoneal cleansing with 0.9% isotonic saline and drainage were performed.

Postoperative follow-up was straightforward.

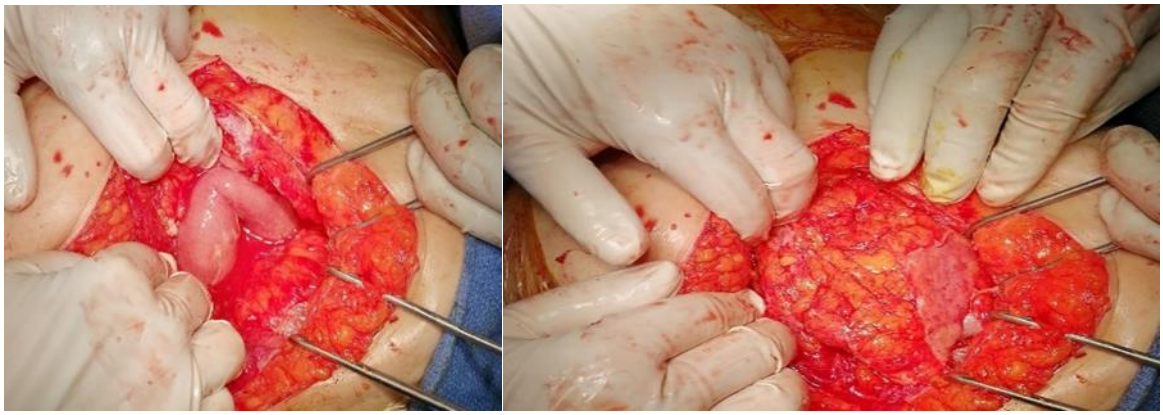

Figure 1 Intraoperative image showing purulent intraperitoneal effusion and perforated appendix. Grelic distension due to compression of pregnancy.

The second patient was a 27-year-old female with no previous history of any particular complaint, currently pregnant at 12 SA + 06 days, admitted to the obstetric emergency department on 08/09/2023 for febrile localized abdominal pain in the IDF, which had been evolving for 05 days prior to admission.

On admission, general examination revealed a conscious patient, normocardial, normotensive, normocolored conjunctiva, febrile at 39.

Physical examination = defense localized at the level of the IDF with diffuse tenderness of the rest of the abdomen.

Biological tests = haemoglobin = 12 / WBC= 19,000 / crp = 75 / platelets = 200,000 / renal function correct / ionogram normal.

Abdominal ultrasound performed on 10/09/2023: swollen laterocecal appendix reaching 11 mm in maximum diameter: aspect in favour of simple acute appendicitis with small intraperitoneal effusion with anechogenic content.

Abdominal-pelvic CT: individualization of stercolitis in the right iliac fossa, with no clear visualization of the appendix. Organic occlusion of the graft on double flange associated with colonic occlusion by external compression of the sigmoid on one side and image of a flange on the other.

The patient underwent surgery within 24 hours of admission. Median laparotomy straddling the umbilicus revealed an appendix in a latero-caecal position, gangrenous and perforated at the tip with a healthy base (figure 2), associated with an intra-peritoneal effusion which was removed for bacteriological examination and then aspirated.

Retrograde appendectomy was performed after ligation and section of the appendicular meso, and closure of the appendicular stump with a 3/0 vicryl stitch. Peritoneal cleansing with 0.9% SSI and drainage were performed.

Simple postoperative follow-up.

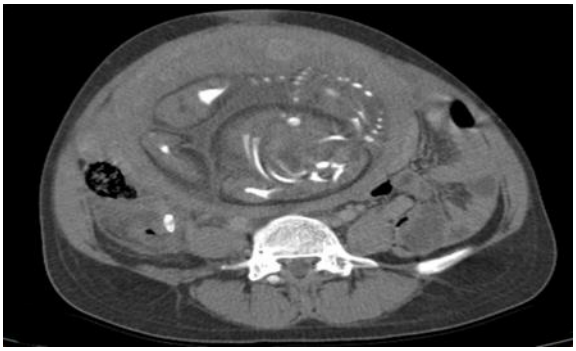

Figure 2 CT scan of the abdomen in injected axial sections showing the presence of an stercolith at the level of the FID (arrow), with appendage not visible

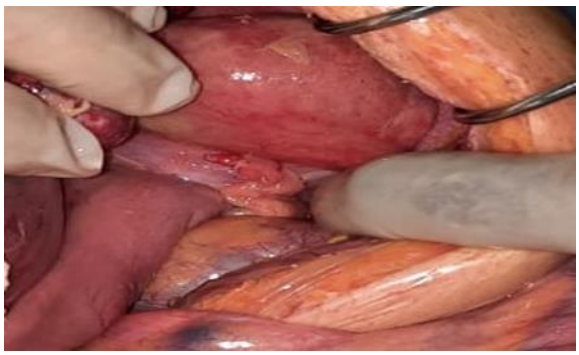

Figure 3 Intraoperative image showing perforated appendix

3. Discussion

The indications for abdominal surgery in pregnant women are in the vast majority of emergencies. Apart from obstetrical causes (retroplacental hematoma, subscapular hematoma of the liver, uterine rupture, etc.), these are mainly simple and or complicated acute appendicitis, vesicular pathologies. Thus, an acute abdominal pathology from a non-obstetric cause complicates around 1 in 500 pregnancies, with a surgical indication in 0.2 to 2% of cases [2].

Appendicular peritonitis is a serious condition in pregnant women, due to the rarity of complicated forms of acute appendicitis, most often due to a diagnostic delay. Diagnostic difficulties, especially in the second and third trimesters, are due to misleading and crude symptomatology associated with changes in the anatomical situation of the appendix, which rises as the pregnancy progresses. Uterine contractions are very frequently associated (80% premature contractions in the case of localized peritonitis), and the rate of premature delivery during the third trimester can exceed 50% [3]

The association of peritonitis and pregnancy is rare. Its frequency is variously assessed according to the authors. The frequency of non-gynecological abdominal emergencies is generally estimated at 2 per thousand pregnancies [4, 5, 6]

Abdominal pain during pregnancy is a frequent reason for consultation with a variable degree of urgency. The diagnostic hypotheses must be prioritized taking into account the patient's history and the term of the pregnancy. There are gyneco-obstetrical causes responsible for abdominal pain that must be considered and diagnosed quickly to allow appropriate care, especially when the maternal and fetal vital prognosis is engaged. Whatever the stage of pregnancy, for many authors, the clinical signs most encountered in order of frequency are: Spontaneous, constant abdominal pain

migrating to the level of the right iliac fossa associated with nausea and vomiting, defense on abdominal palpation [7, 8].

All the patients benefited from an NFS including a hyperleukocytosis greater than 16,000/mm3, the CRP was positive in all the patients. These biological assessments are difficult to interpret during pregnancy due to physiological hyperleukocytosis, especially in the last trimester, however CRP remains a positive indicator for appendicular peritonitis [9]. ECBU came back sterile.

Abdominal ultrasound is the determining element of the diagnosis and must be proposed as first intention. It makes it possible to rule out the possibility of an associated adnexal or obstetrical pathology, and to document the pregnancy by specifying the gestational age and the fetal vitality. Objective the presence of an effusion of the right iliac fossa and fixed loops without being able to individualize the appendix, evoking in the first place appendicular peritonitis [10]. Abdomino-pelvic CT scan showed Individualization of an stercolith at the level of the FID, without clear visualization of the appendix. Organic grelic occlusion on double band associated with colonic occlusion by external compression of the sigmoid on one side and bridle image on the other side, with no signs of digestive pain and a gestational sac. In the literature, the injection of iodinated contrast product has not shown any teratogenic effects either in animals or in humans. However, potential neonatal hypothyroidism should be screened for due to the risks observed in animal studies [11]. Do not delay treatment in the event of an abdominal emergency in pregnant women, and given the low fetal risk, particularly during the 2nd and 3rd trimester, CT scan with injection of contrast product must be performed in pregnant women if it is necessary for the etiological assessment.

The management of appendicular peritonitis in pregnant women is surgical, and the strategy must take into account several factors such as gestational age, severity of appendicular peritonitis, body mass index, history of surgery abdominal pain and the habits and preferences of the surgeon. It consists of a usual treatment of peritonitis with cure of the causal pathology. The peritoneal toilet must be particularly careful. Abdominal drainage is systematic, except for some authors who consider it to be responsible for permanent uterine irritation with exaggerated uterine contractions [12]. Finally, tocolysis is necessary to prevent the onset of uterine contractions. The indication of this tocolysis is not discussed in the period which goes from the end of the first trimester to the 34th week of amenorrhea. Beyond and at fetal maturity, an extraction can be discussed to prevent the risk of perinatal infection [13].

Evolution: maternal prognosis has improved, maternal mortality has fallen to 0.01% since 1976, whereas it was close to 5% in 1960. This is linked to better multidisciplinary care thanks to more early, better anesthesia-resuscitation and advances in antibiotic therapy. It is mainly related to perinatal infection of hematogenous origin and to prematurity.

4. Conclusion

Peritonitis and pregnancy is a rare but serious pathology, due to anatomical and physiological changes during pregnancy, which makes diagnosis more difficult and delays surgical treatment. The fetal prognosis remains poor, and close collaboration between obstetricians and surgeons is necessary, thus allowing rapid decision-making and an improvement in the maternal-fetal prognosis.

Compliance with ethical standards

Disclosure of conflict of interest

The authors declare no conflict of interest.

Statement of informed consent

Patient consent has been obtained for the use of their data for publication. Anonymity is strictly respected, and no images are used to identify patients.

Authors' contributions

All authors contributed to the development of the work. All authors also declare that they have read and approved the document.

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