Concurrent presentation of ruptured ectopic pregnancy and parasitic acute appendicitis. A case report

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Case Report

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Background: Introduction: Ectopic pregnancy and appendicitis are the most frequent causes of acute abdomen during pregnancy; their simultaneous presentation is extremely rare, with fewer than 25 cases described. No previous reports of parasitic appendicitis in this context exist.
Case report: A 19-year-old woman, with no relevant medical history, presented to the emergency department with abdominal pain in the hypogastrium and iliac fossae, accompanied by nausea, vomiting, and subjective fever. On examination, she exhibited tenderness on palpation and decreased peristalsis. Laboratory results: leukocytes 13,430/mm³, neutrophils 80.2%. Ultrasound: uterus in AVF position, enlarged right adnexa, and free fluid. Positive pregnancy test. Exploratory laparotomy was performed, revealing a 600 cc hemoperitoneum, ruptured ectopic pregnancy in the right salpinx, and acute appendicitis caused by Ascaris lumbricoides.
Discussion: The coexistence of both entities hinders diagnosis due to overlapping symptoms and gestational anatomical changes. Clinical and ultrasound findings can be nonspecific, and operator experience influences diagnostic accuracy. In this case, appendicitis was not secondary to contiguous inflammation but to luminal obstruction by a parasite, an unprecedented finding in the literature.
Conclusion: Acute abdomen in women of reproductive age should be assessed considering simultaneous gynecological and non-gynecological causes. Clinical suspicion and timely surgical intervention are essential to reduce maternal morbidity and mortality.
Keywords: acute abdomen, ectopic pregnancy, appendicitis, Ascaris lumbricoides.

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Ectopic pregnancy and appendicitis are the two most frequent causes of acute abdomen during pregnancy; their simultaneous occurrence has rarely been reported. The medical literature has recorded slightly fewer than 25 cases since the 1960s (1).

Appendicitis is currently the most common cause of emergency surgery; its causes can be multiple, and parasitic etiologies constitute a group that, while less common, remains important. Among these parasitoses are: Enterobius, Ascaris, Giardia, and E. histolytica (2).

Case report

A 19-year-old female patient presented to the emergency department with abdominal pain located in the hypogastrium and periumbilical region, radiating to the lumbar area and iliac fossae, accompanied by nausea, vomiting, and subjective fever.

On physical examination, she exhibited decreased peristalsis and intense pain on palpation in both the right and left iliac fossae.

Blood tests revealed elevated levels of the following parameters: leukocytes 13,430, neutrophils 80.2%, lymphocytes 12.8%, eosinophils 1.8%.

Ultrasound scan showed a uterus in AVF position measuring 5 cm × 3.5 × 3 cm, a trilaminar endometrium of 0.4 cm, a left ovary measuring 3 × 2.5 cm, an enlarged right adnexa, and free fluid in the abdominal cavity.

Pregnancy test was positive. Abdominal X-ray showing the presence of gas in intestinal loops, with no other pathological findings (Fig. 1)

Exploratory laparotomy was decided upon, revealing approximately 600 cc of hemoperitoneum, ruptured ectopic pregnancy in the ampullary region of the right salpinx, and acute appendiceal process secondary to Ascaris within its lumen. (Fig 2)

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Figure 1. Abdominal X-ray showing the presence of gas in intestinal loops, with no other pathological findings

Discussion

The diagnosis of acute abdomen in a pregnant patient is challenging due to the wide range of possible differential diagnoses and the anatomical relationship changes caused by the gravid uterus.

Gynecological etiologies include ectopic pregnancy, ovarian torsion, uterine myomatosis, pelvic inflammatory disease, and tubo-ovarian abscess (3).

As the most common cause of surgical pain in pregnant patients, appendicitis is estimated to occur with an incidence of 1 per 1500 pregnancies (1). Likewise, the incidence of ectopic pregnancy in our country ranges from 1:40 to 1:100 pregnancies; it occurs in 0.5% to 2% of all pregnancies (4).

The synchronous occurrence of both pathologies is extremely rare, with fewer than 25 cases in the medical literature (1), and none of these document a parasitic etiology of appendicitis. For this reason, diagnosis poses a challenge for medical personnel.

On physical examination, clinical findings that could guide the diagnosis of appendicitis, such as McBurney point tenderness and psoas signs, cannot be elicited due to the cephalic displacement of the appendix by the gravid uterus (5,6). On the other hand, there are no highly suggestive clinical signs of early rupture of an ectopic pregnancy, as the presence of

Figure 2. Ampullary region of the right fallopian tube with ruptured ectopic pregnancy and cecal appendix with an incipient inflammatory process secondary to the presence of *Ascaris*.

abdominal pain and signs of hypovolemic shock occur later.

It should be noted that parameters such as leukocyte count and erythrocyte sedimentation rate are elevated in pregnant patients, even in the absence of infectious pathologies. Likewise, eosinophilia is not a consistent finding in appendicitis of parasitic etiology and is more frequently observed in the pediatric population.

Additionally, βhCG quantification has high sensitivity for diagnosing ectopic pregnancy. However, several recent studies in the obstetrics and emergency medicine literature have shown that the βhCG level cannot be used reliably to discriminate between early intrauterine pregnancy and ectopic pregnancy (7-9).

Currently, advances in transvaginal ultrasonography allow the diagnosis of ectopic pregnancy, with sensitivity and specificity ranging from 87.0 to 99.0% and 94.0 to 99.9%, respectively (10). For appendicular pathology, pelvic ultrasound demonstrates sensitivity from 75 to 92% and specificity from 94 to 100% (11).

Highly suggestive ultrasound findings — such as free fluid in the pouch of Douglas and echogenic adnexal mass in ectopic pregnancy, and a non-compressible appendix with a lumen equal to or greater than 6 mm with free fluid in appendicitis (5,6) — are not always evident.

It should also be noted that differences in technique and operator experience, as well as intestinal interposition and distension due to gas, may hinder a conclusive preoperative diagnosis of appendicitis and/or ectopic pregnancy (3).

Conclusion

The etiopathogenic relationship between these pathologies can be explained by periappendicular inflammation caused by ectopic pregnancy, which is

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also responsible for bacterial colonization that would lead to acute appendicitis (12). Conversely, a history of an inflammatory appendicular episode that resolved spontaneously may cause lesions in the fallopian tubes through inflammatory rearrangements, favoring the development of an ectopic pregnancy (1).

However, in the present case, the association of the pathologies cannot be established by a contiguous inflammatory process, since obstruction of the appendiceal lumen was secondary to the presence of a parasite.

The possibility of simultaneous causes of abdominal pain should not be ruled out when managing acute abdomen, especially in women of reproductive age. Although the concurrent presentation of ectopic pregnancy and appendicitis is extremely rare, diagnosis should be considered in women of reproductive age with abdominal pain. Systematic evaluation with a detailed medical history, physical examination, laboratory tests, and imaging is essential to avoid diagnostic delays and improve prognosis.

Conflicts of interests

The authors have no financial or personal relationships that could inappropriately influence or bias the content of this article.

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