



Scrotal abscess secondary to appendicitis. A case report

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ABSTRACT

Appendicitis is the leading cause of acute abdomen in pediatric age. Approximately one third of all cases are complicated with appendicular perforation at the time of surgical intervention. Postoperative complications of this condition include abscesses at unusual or ectopic sites, like scrotal abscess. For an intra-abdominal event to cause a scrotal abscess due to fluid displacement there must be a permeable *processus vaginalis*.

This article reports the case of a child with perforated appendicitis. After undergoing surgery he had an abscess in the scrotum which developed through a permeable vaginal duct. It had to be drained and the patient was treated with a triple course of antibiotics. The patient evolved satisfactorily.

Key words: appendicitis, postoperative complications, residual abscess, inguinal canal.

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Appendicitis is the leading cause of acute abdomen in pediatric age. Approximately one third of all cases are complicated with appendicular perforation at the time of surgery.¹ Certain factors, such as weakness of the wall of the organ in question, favor early perforation of the cecal appendix. Atypical presentations are the most common forms in acute cases, in particular the retrocecal with 60% of cases.^{2,3}

Diagnosis is easy when the typical symptoms are observed: pain, vomiting, and fever, but does not occur in 30% of patients; therefore, when dealing with a patient with atypical symptoms the difficulty of diagnosis and the possibility of complications like appendicular perforation increase.^{3,4}

The most common complications are infection of the surgical wound and residual abscess depending on the level of contamination of the abdominal cavity. Residual abscesses, single or multiple, occur in 0.5 to 5% of cases.⁵ Therefore, in patients with acute appendicitis who undergo surgery early, the possibility is less than 9% and can be as high as 30% when there is perforation or free purulent matter in the abdominal cavity.⁶

CLINICAL CASE

Male patient age 12 years whose condition began two days before consultation with abdominal cramp in the mesogastrium accompanied by nausea and vomiting. He was seen by a private physician who prescribed an analgesic and an antispasmodic. Subsequently he had fever of 38.3°C, for which he went to the emergency service. Physical exploration found teguments pale, oral mucosa dehydrated, abdomen soft and depressible, pain to the touch in right iliac fossa, and Mc Burney positive, with signs of peritoneal irritation. Laboratory studies were performed: leukocytes 14,900, hemoglobin 13.2 g/dL, hematocrit 39.9%, platelets 730,000,

prothrombin time 13.6 seconds, 72.4% activity; thromboplastin time 33 seconds. A simple abdominal x-ray showed scoliosis and a fecaloma in the right iliac fossa.

Explorative laparotomy was performed finding the cecal appendix perforated in the proximal third, with necrosed areas and fecalomas in its interior (Figure 1). The cecum was friable with purulent matter in the parietocolic gutters and in the pelvic cavity, approximately 300 cm³. Appendectomy and washing of the cavity were performed. The postoperative evolution was favorable, applying a triple course of antibiotics with cefotaxime, amikacin, and metronidazol.

The fifth day after surgery the patient had fever of 39.5°C, dysuria, and increase in volume of the



Figure 1. Cecal appendix perforated in its proximal third with fecalomas in its interior.

scrotum and the right inguinal region (Figure 2). Ultrasound revealed a collection in the right testicular mediastinum of approximately 20 cm³.

A right abdominoinguinal incision was made entering the aponeurosis of the superior oblique muscle; the cremaster muscle was dissected, finding purulent matter, approximately 20 cm³, in the inguinal canal; the peritoneal-vaginal duct was permeable and had purulent matter in its interior (Figure 3). Cleaning was performed and a Penrose drain was left in the scrotum; the surgical wound was sutured by plane in the usual manner. The postoperative evolution was favorable.



Figure 2. Right side of the scrotum with increased volume.



Figure 3. Permeable peritoneal-vaginal duct with purulent matter.

The patient was hospitalized for seven days under treatment with clindamycin and paracetamol; he evolved satisfactorily.

The official pathology report concluded: soft tissues with edema, fibrin vascular congestion and formation of abscesses. Treatment continued with antibiotics. Discharge due to improvement. Patient is presently without symptoms and has evolved favorably.

ANALYSIS

In 1886 Reginald Fitz coined the term *acute appendicitis* to describe the clinical manifestations of the condition and laid the foundations for early clinical diagnosis. He proposed opportune surgical treatment to avoid complications.^{7,8} Usually, proper anamnesis and physical exploration are sufficient to establish diagnosis. Unfortunately, lack of experience and criteria cause frequent

complications due to delay in diagnosis and therapeutic treatment.

The most common complications include residual abscesses, single or multiple, which develop in 0.5 to 5% of cases.⁹ The customary location of appendicular abscesses is paracecal or pelvic; there are atypical or ectopic cases such as retroperitoneal, right subdiaphragmatic, inguinal, or scrotal; they may manifest as gangrene or perineal fasciitis, and even as urinary blockage.^{10,11}

For an intra-abdominal event, like appendicitis, to cause a scrotal abscess due to fluid displacement there must be a permeable *processus vaginalis* or an inguinal hernia.¹² In our patient there was a permeable *processus vaginalis*.

The peritoneal-vaginal duct appear in the twelfth week of gestation; it is a serous diverticulum which extends to the inguinal ring.^{13,14} Usually, obliteration of this structure occurs spontaneously around the second year of life; in approximately 20% of the population the duct remains permeable for their entire life without its causing alterations.^{13,14}

Intra-abdominal infections occur when the host's defenses allow bacterial flow to produce a fibrin capsule around a lesion.¹⁵ To form, they usually require 10⁷ bacteria per milliliter, among other factors. The pathways of dissemination of purulent matter in the peritoneal cavity are defined: it circulates toward the upper abdomen in the suprahepatic and infrahepatic spaces, as well as the paracolic gutter and toward the pelvic cavity. Movement in the upper abdomen probably represents circulation of fluid toward a low-pressure region, produced by absorption of matter by diaphragmatic lymph nodes and a suction effect caused by the force of gravity on the upper abdominal organs, especially the liver.¹⁵⁻¹⁷ Circulation of fluid to the lower parts of the pelvis

or in the paracolic gutters is probably due to the force of gravity acting in ventral decubitus or in a partially erect position.¹⁸

The presentation of scrotal abscess secondary to appendicitis was first described in 1919.¹⁹ It is an extraordinarily rare complication; patients may have dysuria, urethral blockage, urinary retention, hematuria, or pyuria; however, differential diagnosis is broad in acute scrotal inflammation and includes testicular torsion, torsion of the testicular appendix, epididymitis, orchitis, trapped hernia, necrosis of scrotal fat, and thrombosis of scrotal veins.^{19,20}

The importance of this clinical case is to alert pediatric doctors and surgeons to the existence of this condition which, due to its rarity and variable manifestations, represents a challenge for diagnosis.

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