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Case Report

Valentino's syndrome: the simulation of an appendicitis

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ABSTRACT

Acute abdominal pain is still the domain of the surgeon. Among the many differential diagnosis that should be considered, acute appendicitis must be one of the main options for the clinician. Even though we have excellent diagnostic tools nowadays, accomplishing an accurate diagnosis is not that easy. We all know that is better to perform surgery on a normal appendix than not operating an appendix that will result in complications; we also know that the diagnostic challenge will be higher in a female patient. But, what if right lower quadrant pain is produced by a pathology that doesn't involve that anatomical region? We present two cases that clearly explain this situation.

Keywords: Abdominal pain, Acute abdomen, Appendicitis, Peptic ulcer, Valentino's syndrome

INTRODUCTION

Acute appendicitis is one of the main causes of acute abdomen, and the most common cause of urgent abdominal surgery in the world.[1] It's a pathology with a vast number of differential diagnosis, and even though we have diagnostic tests with great sensitivity and specificity, it continues to be a challenge for the surgeon. Several studies report a diagnostic error between 5 and 15% when approaching a patient with abdominal pain that suggests appendicitis.[2]

In fact, at least 10% of all appendectomies made by a single surgeon should be reported with no pathological finding, otherwise he could be missing true cases of appendicitis or diagnosing them too late.[2]

Diagnostic errors occur more frequently in female patients because of anatomical reasons.[1] Some of the pathologies that commonly imitate acute appendicitis are listed below:

Pathologies that can simulate acute appendicitis

- Crohn's disease
- Tubo-ovarian abscess
- Acute ileocecal enterocolitis (typhlitis)
- Sigmoid diverticulitis
- Cecum tumors
- Colorectal cancer
- Appendix tumors
- Perforated acute cholecystitis
- Gastric or duodenal perforated ulcer
- Pseudomembranous colitis and CMV in AIDS positive patients
- Ovarian torsion
- Necrotic/hemorrhagic leiomyomas
- Endometriosis
- Ovarian vein thrombosis
- Infectious ileocecitis
- Epiploic appendagitis or epiploic appendix torsion
- Mesenteric adenitis

- Right colonic diverticulitis

It is called Valentino's syndrome to the signs and symptoms that mimic an acute appendicitis, but are in fact produced by a perforated gastric or duodenal ulcer.[4] Once the visceral wall rupture occurs, gastric or intestinal fluids migrate to the right iliac fossa through the paracolic gutters, producing a periappendicits. It is known by this name in honour to the Italian actor Rudolph Valentino, who died in 1926 due to peritonitis produced by a gastric ulcer perforation, that in the beginning simulated an acute appendicitis.[5] In this article, we present two clinical cases in which the suspicion of acute appendicitis was ruled out during the surgical event.

CASE REPORT

Case 1

A 26-year-old male patient, with no family history of importance, with a smoking index of 13 points. Drug user (cocaine and MDMA) with three months of abstinence. Eight hours prior to his arrival to the E.R. he begins with acute colicky abdominal pain, located in the hypogastrium, with an intensity of 8 out of 10 in the pain scale, with irradiation to the right iliac fossa and flank, and was exacerbated on decubitus. Other symptoms included hyporexia, nausea, and vomiting. Physical examination with tachycardia and a slight increase in body temperature.

Abdomen with involuntary muscular resistance, hyperalgesia and pain when pressing the right iliac fossa and flank, all of the appendicular signs present (McBurney, Von Blumberg, Rovsing, Dunphy and psoas). Laboratory test revealed leukocytosis of 14,500 with 13% of bands and 77% neutrophilia. Urinary test with no abnormalities. Abdominal X-rays showed a fixed intestinal loop in the right iliac fossa and the loss of psoas shadow in the same region. As part of the surgical approach, a abdomino pelvic ultrasound was performed, it showed scarce free fluid in the right cul-de-sac and mesentery infiltration (Figure 1).

Figure 1: Free fluid in the right cul-de-sac.

Being not conclusive for a definite diagnosis, a CT scan was performed, which reported free air and liquid in the abdominal cavity with predominance in the right flank and iliac fossa with no contrast material leakage and not finding a specific perforation site or the appendix (Figure 2).

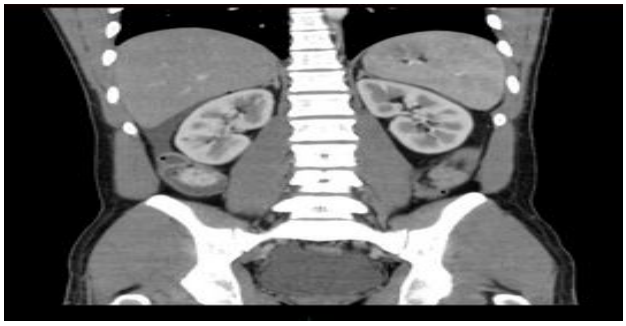

Figure 2: Gastric fluid pathway through the right paracolic gutter, which induced peritoneal irritation in the right iliac fossa.

A diagnostic laparoscopy was performed insufflating capnoperitoneum with Veress technique. Once inside the abdominal cavity, free liquid in the pouch of Douglas was seen with gastric characteristics and fibrin accumulation (Figure 3).

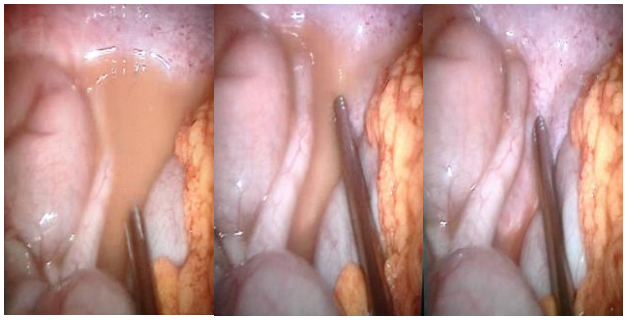

Figure 3: Not-inflamed appendix surrounded by gastric fluid.

An exploration of the cavity was performed finding a gastric antrum perforation of approximately 1cm (0.4 inches) in diameter, 5cm (2 inches) next to the pylorus (Figure 4).

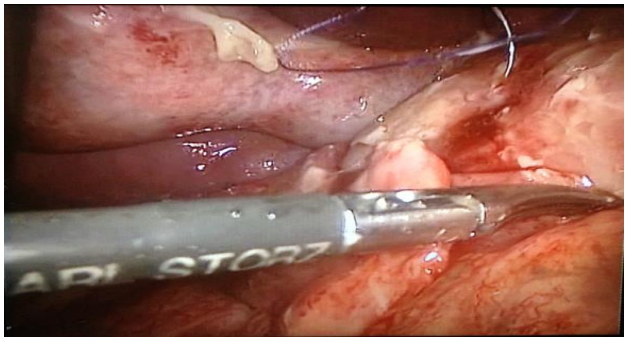

Figure 4: Perforated gastric ulcer.

A primary closure with simple interrupted stitches was done with multifilament absorbable suture (Polysorb®) and a omentum patch was placed. Patient was covered with a double antibiotic regimen of ciprofloxacin and metronidazole and remained with a nasogastric tube on continues suction and oral intake restriction for 5 days, gradually progressing diet. The patient outcome was satisfactory and mediate or late post-operatory complications where seen. When asked about risk factors for peptic ulcer formation, the patient accepted he consumed NSAID's on a regular manner (400mg of ibuprofen) as recommended by his psychiatrist to complement abstinence syndrome treatment.

Case 2

A 76-year-old male patient, with no family history of importance, with a smoking index of 25 points, 3 days prior to his arrival, he begins with colicky abdominal pain in the umbilical region, with an intensity of 6 out of 10 in the pain scale, it then migrated to the right iliac fossa and genitals, he also presented fatigue, anorexia, nausea and obstipation. He seeks medical attention due to increased pain intensity. At physical examination with stable vital signs, protuberant abdomen due to subcutaneous fat and meteorism, hyperalgesia and pain when pressing the right iliac fossa. McBurney, Von Blumberg, Rosving and Dunphy signs where positive. Laboratory findings reported a 13,500 leukocytosis, 7% bands, and a 73.3% neutrophilia, urinary test with no abnormalities. Abdominal chest X-ray showed no infradiaphragmatic air. Abdominal X rays showed dilated bowel loops in the right lower quadrant and air-fluid levels, which suggested ileus. As part of the diagnostic approach, an abdominal ultrasound was performed, which revealed pericecal fluid and no peristalsis, the appendix was not found (Figure 5).

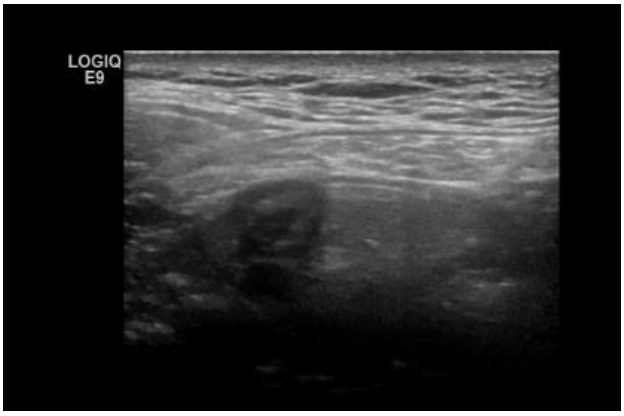

Figure 5: Suggestive image of acute appendicitis in the right iliac fossa.

Acute appendicitis diagnosis was made and a laparoscopy appendectomy was planned. While performing surgery, purulent fluid in the right paracolic gutter and cul-de sac and inflammation of the mesoappendix was found. Because of these findings, appendectomy was performed. He remained 3 days hospitalized after surgery. During the mediate postoperatory he presented continuous episodes of epigastric pain with an intensity of 8/10 that remitted with ketorolac administration. However, he tolerated diet, peristalsis was present and evacuations with no abnormalities where present. He was discharged with cefuroxime as the antibiotic treatment. Pathology report, obtained days later, referred periappendicitis and acute inflammation of the mesoappendix with no acute appendicitis found. Five days later after the patient discharge, he returned to the E.R. with intense epigastric pain, with an 8/10 intensity and bile vomit in 5 occasions. Physical examination revealed fever, tachycardia and signs of acute abdomen. A tangential abdominal X-ray revealed an important pneumoperitoneum (Figure 6), surgical reintervention was decided.

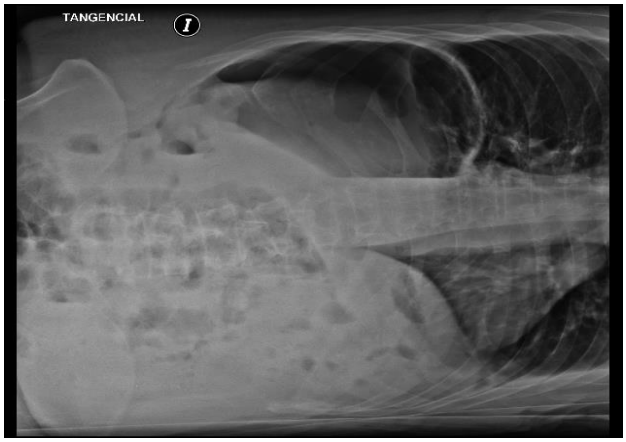

Figure 6: Massive pneumoperitoneum due to duodenal perforation.

An exploratory laparotomy was performed, finding a 0.5cm (0.2 inches) perforation in the second part of the duodenum. It was repaired using a Graham patch and simple interrupted stitches of multifilament absorbable suture. A cavity lavage and aspiration was done and Saratoga drains where placed. Nasogastric tube suction was placed, starting diet 5 days after surgery. The patient outcome was satisfactory and was discharged 7 days after the second surgery. Neither mediate and late postoperatory complications where present.

DISCUSSION

When studying a patient with abdominal pain, it is important to differentiate between acute abdominal syndrome and acute abdominal pain. Acute abdominal syndrome is the combination of acute abdominal pain with signs of peritoneal irritation, which has many etiologies. Acute abdominal syndrome is a surgical urgency that represents between 5 and 10% of the consults in the E.R. and that will require immediate management by a surgeon.[3] One of the most important signs to integrate an acute abdominal syndrome is involuntary muscular resistance. Abdominal pain, on the contrary, has different etiologies with non-surgical causes. Even though nowadays we have many diagnostic

tools, acute abdominal pain is still a challenge for the surgeon.

In a multinational study in which Mexico participated, 10,682 patients with acute abdominal pain were evaluated, it was determined that the 4 main causes are: 1) non-specific abdominal pain, 2) acute appendicitis, 3) acute cholecystitis, 4) small bowel obstruction. Peptic ulcer perforation ranks in the 8th position.[6]

When having a patient with acute abdominal pain localized in the lower right quadrant with signs of peritoneal irritation and systemic inflammatory response syndrome, we are obligated to discard acute appendicitis. Clinical history and physical examination are still the main tools to integrate the differential diagnosis of acute abdominal pain. In fact, determinant factors for the appropriate diagnosis are: 1) pain location, 2) pain characteristics and 3) accompanying signs.[1]

Surgeons have many methods to confirm diagnosis. Abdominal CT scan with IV contrast is considered as the gold standard, it has a 94% sensitivity and 95% specificity.[7] This test is not harmless and it exposes the patient to a considerate amount of radiation. Because of this, abdominopelvic ultrasound, which reaches an 86% sensitivity and a 81% specificity, continues to have an important role as a diagnostic tool in a patient with abdominal pain.[7] Even though it is a harmless test, it has a widely known main disadvantage: it is operator dependent. We must emphasize that these tests are not perfect, and they cannot confirm nor discard the diagnosis we are evaluating.

In the first case, we have a patient with acute abdominal syndrome, which should've been subjected to a surgical procedure, and considering sex, age, symptoms presentation and a systemic inflammatory response syndrome, the most probably diagnosis, with no doubt, is acute appendicitis. Imaging tests were not conclusive, but the presence of free fluid in the flank and right cul de sac, seem to confirm diagnosis, however surgical plan changed completely during surgery. This case is an example of the patient background and clinical history should make us suspect other etiologies. The effects of cocaine in E2 prostaglandines and C4 leukotrienes synthesis in gastric mucosa are well known, as well as its systemic vasoconstriction effects.[8] The patient smoking habit and the recent use of non steroid anti-inflammatory drugs represent two factors that contribute the alterations between PGE2 and LTC4.

The second case presents also an acute abdominal syndrome, but this time in a male geriatric patient. Pain location and associated system inflammatory response, justifies the possibility of acute appendicitis. The double peak of incidence of this pathology increases the possibilities that he may actually have appendicitis, but at the same time it justifies unusual presentations of other diseases. In this patient, smoking habit stands out, its effects on gastrointestinal physiology are well known: 1) it interferes with histamine receptor activation, 2) gastric emptying speeds up, 3) it favours duodenogastric reflux, 4) it inhibits bicarbonate pancreatic secretion and 5) it also inhibits E2 prostaglandin production.[9]

CONCLUSION

When approaching a patient with acute abdomen, there are neither established protocols nor definitive diagnostic tests. With these two cases we learned that clinical data obtained by the patients history can make us think of other diagnosis and not only suspect the most common ones. Precisely in these patients is where laparoscopic surgery becomes an invaluable method and superior compared to others to approach a patients with abdominal illness. This is why the surgeon is forced to perform a diagnostic laparoscopy during the procedure. There is a level A evidence recommendation to perform a laparoscopic procedure when the possibility of acute appendicitis exists, but also when suspecting a gastroduodenal perforation. Since 1990, Mouret showed that a laparoscopic procedure in gastrointestinal perforations is possible. Finally, with these cases we reassure the necessity of the surgeon to develop skills to correctly approach a patient with acute abdominal syndromes, since the diagnosis might be unsuspected and the surgical plan can change in the last minute.

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