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**Case Report**

# Fitz Hugh Curtis syndrome as a cause of acute abdomen: case report

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## ABSTRACT

The case of a young adult woman who came to the emergency room with acute surgical abdomen is presented. As part of her treatment, laboratory studies were performed, highlighting leukocytosis at the expense of neutrophilia. An abdominal CT study with contrast was also performed, which showed free fluid in the abdominal cavity without diagnostic confirmation, so a diagnostic laparoscopy was performed where perihepatic adhesions were evident on violin strings suggestive of Fitz Hugh Curtis syndrome. Fitz Hugh Curtis syndrome is an entity little reported in the surgical literature. Its manifestations are nonspecific with generalized abdominal pain, nausea, vomiting, and fever. It is a diagnostic challenge since it can be confused with other surgical gastrointestinal pathologies such as appendicitis or cholecystitis, occurs in both genders, although it is more common in women of reproductive age, its diagnosis is usually a postoperative finding, the prognosis will depend on the postoperative findings and non-surgical management. We present a review of the literature and a reported case.

**Keywords:** Acute abdomen, Fitz Hugh Curtis syndrome, Perihepatic, Surgery, Violin string adherences

## INTRODUCTION

Assessment of acute abdomen requires an understanding of the possible causes responsible for the pain and recognition of typical and atypical clinical patterns and presentations. Fitz-Hugh-Curtis syndrome (FHCS), also known as perihepatitis, is a rare complication of pelvic inflammatory disease as a result of direct infection due to intraperitoneal dissemination, presenting inflammation of the liver capsule and peritoneal surfaces without involvement of the liver parenchyma.[1] Its clinical manifestations are nonspecific and include rapidly evolving pain and discomfort in the right upper quadrant, frequently confused with other hepatobiliary, digestive tract, or kidney diseases. The possibility of this syndrome should be considered, since a diagnostic mistake can lead to unnecessary surgical interventions. A clinical case of a woman with a diagnosis of acute abdomen is presented, presenting with leukocytosis and with cabinet images with free fluid in the cavity, for which a diagnostic laparoscopy was performed, identifying adhesions of the liver and right parietocolic groove to the abdominal wall "in violin strings" making the anatomical visualization of the cavity impossible, for which open exploratory laparotomy was performed, evolving in a satisfactory clinical manner until discharge.

## CASE REPORT

A 31-year-old female patient presented to the emergency room with intense abdominal pain that had been going on for 12 hours, accompanied by nausea and loss of appetite. She denied fever, acholia, or choluria upon questioning, with no clinical-surgical history, such as nulliparous gynecological history, active sexual life. Since the age of 17, 2 sexual partners, condom family planning method,

reports recurrent episodes of urinary infections and currently with vaginal discharge without treatment, on physical examination globular, semi-rigid abdomen, decreased peristasis, with intense pain rated 9/10 referred in right hypochondrium that increases with valsalva maneuvers and sometimes radiates to the shoulder or back, vaginal examination without presence of malodorous discharge, as part of the diagnostic protocol laboratory studies are requested in which it showed leukocytosis of 15 thousand at the expense of neutrophilia , with normal liver function tests, office tests were performed with ultrasound of the liver and bile ducts with collapsed gallbladder with adjacent collection and free fluid in referred sites, gallstones, without dilation of the intra- or extrahepatic bile duct, without evidence of free fluid in Morrison's space, in turn, a simple tomography of the abdomen was performed where the integrity of the gallbladder was seen, with evidence of stones inside, absence of free fluid, data of pelvic inflammation with probable collection, myoma that compresses the its face to interior to rectum, presence of coprostasis (Figure 1). Reason why it was decided to perform diagnostic laparoscopy when inspecting the abdomino-pelvic cavity, including organs and abdominal wall. When observing the liver surface, adhesions were found in “violin strings” between the liver and the abdominal wall, which are pathognomonic of Fitz Hugh Curtis syndrome in its chronic stage, which was why it was decided to perform a lap, within the findings wall abscess+scleroatrophic gallbladder with stone inside, multiple adhesions of loop-loop, loop-wall, liver-omentum, omentum-vesicular, adhered to the uterine fundus, right salpinge with discharge of frank purulent material, right uterine tubes erythematous and edematous, friable, distorted anatomy of the uterus with adhesion of the omentum, so it was decided to perform a subtotal reconstitutive cholecystectomy+total hysterectomy+right salpingo-oophorectomy+release of adhesions, which was performed successfully and without complications (Figure 2). The patient was informed of the finding and continued with good clinical progress until her discharge.

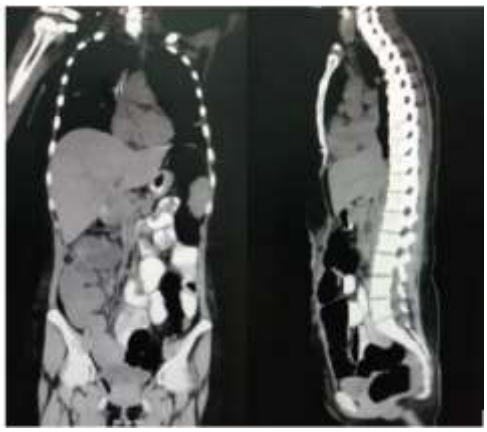

**Figure 1: Abdominal tomography with contrast in coronal and sagittal reconstruction showing pelvic inflammation with probable collection.**

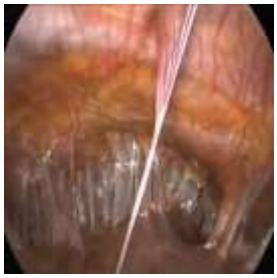

**Figure 2: Diagnostic laparoscopy was performed where adhesions were visualized between Glisson's capsule, the diaphragm and the anterior abdominal wall on the “violin strings”.**

## DISCUSSION

Fitz-Hugh-Curtis syndrome (SFHC), also known as perihepatitis, was first described by Dr. Carlos Stajano in 1920. It is a rare complication of pelvic inflammatory disease (PID), with an incidence variable depending on the diagnostic criteria used.[1,2] It affects all women of reproductive age who have had a previous episode of PID, with an incidence that varies between 2% and 14%, although only Taking into account adolescent patients, the figures rise to 27%; cases in men, although described, are extremely rare.[3-5]

The cause of pain is secondary to adhesions between Glisson's capsule, diaphragm and anterior abdominal wall, which due to their macroscopic appearance are called "violin strings" can mask the diagnosis of PID and is frequently confused with other hepatobiliary diseases, such as hepatitis, acute cholecystitis, biliary colic, cholangitis or liver abscess, among others, diseases of the digestive tract such as gastric or duodenal ulcers; basal pneumonias, pulmonary thromboembolism, pleuritis or even pyelonephritis or renal colic, depending on the evolution, acute, subacute and chronic forms of presentation can be distinguished, the last two being the most frequent.[3] Mild exudative inflammation of the liver surface is the main manifestation of the acute phase, while "violin-string" adhesions between the anterior surface of the liver and the abdominal wall are considered pathognomonic of the chronic phase. The syndrome was first associated with gonococcal salpingitis in 1920, and later with *Chlamydia trachomatis*, *Mycoplasma genitalium* other germs, such as *Ureaplasma urealyticum* or *Mycobacterium tuberculosis*, have been described more recently and in fewer cases.[6-9]

In a review carried out by You et al it was reported that the most frequent symptom was pain in the right hypochondrium (71%), and later pain in the hypogastrium (6.1%), pain in the right flank (4.9%) and pleuritic pain (1.2%).[10] Among the complications, cases of intestinal obstruction or hemoperitoneum due to rupture of adhesions have been described.[11] Although gynecological symptoms are usually absent, it was rare that it did not manifest in some way before the

gynecological examination, both before speculoscopy (cervicitis, discharge), or before the bimanual examination (pain on uterine palpation, mobilization of the cervix, adnexal, pelviperitonitis).[12]

Within the laboratory tests, they reflected the existence of inflammatory phenomena, there was leukocytosis with neutrophilia as well as elevated CRP, aminotransferases are usually normal or slightly elevated, which helped us differentiate perihepatitis (SFHC) from hepatitis.[13,14] Regarding imaging tests, ultrasound and abdominal CT are the most useful for making the differential diagnosis with other forms of peritonitis located in the upper right quadrant of the abdomen. CT with intravenous contrast usually shows subcapsular fluid, with thickening of the liver capsule in the arterial phase, enhancement of the liver parenchyma involved in more than half of the patients, and only in a quarter are "violin-string" adhesions usually seen.[15]

The antibiotic treatment is the same as recommended in PID, and the antibiotics used must be directed following the protocols established by each center, with special emphasis on treating sexual partners. When the clinical evolution is not favorable or complications appear, urgent surgical treatment may be necessary, as previously mentioned, preferably through a laparoscopic approach.[15] In the case of laparotomy or laparoscopy, SFHC can be classified into 3 stages according to the number and thickness of the adhesions present: mild, when less than 5 thin adhesions are present between the right hepatic lobe and the anterior abdominal wall; moderate, when there are more than 5 adhesions, and severe, if the adhesions are present in both liver lobes, long-term follow-up of patients is recommended to rule out complications such as infertility problems, chronic abdominal pain or "after the fact" development of adhesions.[16,17]

## CONCLUSION

Acute abdomen continues to be a challenge for the general surgeon; adequate knowledge and experience is required, reducing mortality that can trigger a delay in treatment. Fitz-Hugh Curtis syndrome is a rare clinical presentation of abdominal pain with few pelvic symptoms, and “violin string”-shaped adhesions between the liver and the diaphragm or the anterior wall of the abdomen. Given the clinical characteristics, the diagnosis is a challenge for the surgeon since it is usually delayed in time or is erroneous, the most common being to attribute the condition to hepatobiliary, appendicular or urological pathology; and sometimes it can cause unnecessary surgical interventions. The analysis is not very specific, and mild leukocytosis with neutrophilia, increased CRP, and liver enzymes are usually normal or slightly increased. The antibiotic treatment is the same as that which would be used in a pelvic inflammatory disease, however, when there is no confirmatory diagnosis and the patient presents with symptoms of acute abdomen, surgical intervention is necessary through a laparoscopic approach where adhesions " violin-string”, as was reported in this case.

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