CLINICAL NOTE

Fitz-Hugh-Curtis syndrome: abdominal pain in women of 26 years old

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ABSTRACT

Fitz-Hugh-Curtis syndrome is an inflammation of the liver capsule as a complication of pelvic inflammatory disease, whose most common etiologic agent is the *C. trachomatis*. The acute phase of the Fitz-Hugh-Curtis syndrome may present itself with pain in right upper abdomen, commonly confused with other hepatobiliary and gastrointestinal tract diseases. Definitive diagnosis is now possible with non-invasive techniques such as ultrasound, computed tomography, as well as techniques to isolate the responsible germ, available in most centers.

Key words: Perihepatitis. *C. trachomatis*. Pelvic inflammatory disease.

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INTRODUCTION

Pain in the upper right quadrant of the abdomen is a symptom usually associated with hepatobiliary diseases such as cholelithiasis or cholecystitis, duodenal ulcers, liver abscess, subphrenic abscess, herpes zoster, etc. (1). A rare cause with or without hypogastric pain is the Fitz-Hugh-Curtis syndrome, which is characterized by inflammation

of the liver capsule concomitantly with pelvic inflammation without compromise of the hepatic parenchyma. It occurs in approximately 12-14% of cases of pelvic inflammatory disease (PID) (1,2). The pain is caused by the adhesion of the liver capsule to the surface of the parietal peritoneum and clinically is of pleuritic characteristics (unchained by body movements, respiration, etc; sometimes radiating to right shoulder (2,3).

Fitz-Hugh-Curtis syndrome has been considered a gynecological disease, however the most common reason for consultation in the acute phase is right upper quadrant pain, therefore often attributed to the digestive tract during the first diagnostic approach (4).

Pelvic inflammatory disease is an infection usually caused by a sexually transmitted agent. The cardinal symptom is abdominal pain in lower quadrants, it can sometimes be very subtle, getting worse with intercourse. The onset of pain during or shortly after menstruation is particularly suggestive. About half of the cases present fever, purulent endocervical exudate, cervical and adnexal sensitivity (1,2,5). It has also been reported that subclinical PID is characterized histologically by neutrophils and plasma cells in endometrial tissue and is the most common cause of tubal factor infertility (3,5,6). The classic etiologic agent is the *N. gonorrhoeae*, however in recent years the *C. trachomatis* has been detected with increasing frequency (2,6).

CASE REPORT

Female patient is 26 years old, nulliparous, sexually active, whose personal history highlights hormonal contraceptive vaginal ring, about 5 episodes of abnormal vaginal discharge in the past year, some of which received topical antifungal treatment, drainage of adjacent to clitoris abscess 3 months earlier, deep dyspareunia and leukorrhea untreated of 1-month duration. Smoker of 15 cigarettes a day, no other toxic habits and not following standard therapy.

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Admission of patient due to clinical frame of 5-day duration right upper quadrant pain, rapidly progressive start, exacerbated with deep inspiration, Valsalva maneuvers and movements, initially irradiated flank and right iliac fossa without postprandial exacerbation, sometimes accompanied by nausea without vomiting. The onset of pain coincided with the beginning of the last menstrual period, was accompanied by mild to moderate pain in lower abdomen. She had not developed fever, altered bowel habit or other symptoms. On examination in the emergency room, she was hemodynamically stable, afebrile. Normal pulmonary and cardiac auscultation. Abdomen not distended, preserved peristalsis, soft depressible very painful on superficial palpation and defense in right upper quadrant and mild pain in lower abdomen. Positive Blumberg reflected in that location. Positive right lumbar fist-percussion reflected to right upper quadrant. A genital examination evidenced vulvar and perianal erythema, vaginal ring inside and leukorrhea. Cervix in posterior position formed and closed.

Blood tests showed Hb: 12.1 g/dL, WBC: 12,800, neutrophils 77%, platelets 281,000, quick: 103%, fibrinogen 3.1 mg/dL, creatinine 0.5 mg/dL, total bilirubin 0.2 mg/dL, Sodium 138, Potassium 3.5, AST 14, ALT 12, amylase 41, LDH 271; CRP: 6.77 mg/dL, ESR 28. Urine sediment was normal. The chest radiograph was within normal limits and the abdomen radiograph only evidenced pneumatization of the colon, without dilated loops of small bowel as well as gas in rectal ampulla.

Due to suspicion of hepatobiliary disease, being the most common cause of right upper quadrant pain, despite finding no alteration in the analytical about it, they decided to perform abdominal ultrasound reporting distended gallbladder, with thin walls and acalculous and with minimal amount of perivesicular fluid.

Discarding hepatic, biliary lithiasic and vesicular diseases, a CT scan of abdomen with contrast is performed, which detects homogeneous hepatomegaly without focal lesions, diffuse periportal edema (Fig. 1); non dilated bile duct, perivesicular liquid, normal kidneys and non dilatation of bowel loops. Normal cecum and appendix with pelvic location. Normal pancreas. Minimal pelvic fluid of left periadnexal location. The rest is normal.

Being discarded other diseases that cause left upper quadrant pain, such as hepatobiliary, pneumonia, renal disease, etc., for both analytical and imaging studies, and taking into consideration the pain characteristics, ultrasound and CT scan findings suggestive of inflammatory perihepatic involvement, left periadnexal liquid and elevated inflammatory markers, in the context of likely gynecological infection with pelvic compromise, diagnosis is focused to *infectious perihepatitis*, reason why the transvaginal ultrasound is performed, reporting normal uterus and ovaries, 8 mm homogeneous endometrium without free fluid in the bottom of the pouch of Douglas. Samples of vaginal discharge are obtained for crops that are positive for *Candida albicans*, *Gardnerella vaginalis* and *Ureaplasma urealyticum*. The study of gene amplification by PCR (poly-

Fig. 1. Abdominal CT shows periportal edema (arrow) due to inflammation of the perihepatic capsule.

merase chain reaction) for *Chlamydia trachomatis* was positive.

Once confirmed the diagnosis as a perihepatitis by *C. trachomatis* from a PID as starting point, treatment is initiated with oral 2 g azithromycin single dose, showing marked improvement of pain and inflammatory parameters after 24-48 hours. Also began treatment with clotrimazole vaginal tablets showing improvement of itching and vaginal discharge. Because *Chlamydia trachomatis* is a sexually transmitted germ, serological tests were performed to rule out other agents in the same category such as HIV and VDRL, being both negative. After having antibiotic treatment completed, abdominal CT control is performed, which features a thin line of fluid collection at the bottom of the pouch of Douglas. The remaining study is normal.

After 1 month the clinical status of the patient is reviewed and a new analytical control is performed, finding her in good general condition without vaginal discharge, dyspareunia, superficial and deep abdominal pain to palpation.

DISCUSSION

Fitz-Hugh-Curtis syndrome is characterized by perihepatic inflammation concomitantly with pelvic inflammatory disease, mainly among women of childbearing age. In the acute phase presents pain of pleuritic characteristics in right upper quadrant (1,2). While in the chronic phase, by laparoscopy or laparotomy, adhesions of the liver capsule to the abdominal wall are observed, typically described as "violin string", that is the diagnostic criteria. It occurs in 12-14% of cases of PID (3,7). The common etiologic agent isolated was *N. gonorrhoeae*, however since 1985, Lopez-Zeno et al. (2), showed that *C. trachomatis* was the most common germ. The mechanism by which this inflammation occurs in the liver capsule is due to the spread of these germs that ascend from the pelvis to the surface of the liver

or spleen as a result of the peritoneal fluid movement through the paracolic gutter into subphrenic space. The presence of peritoneal fluid in normal conditions can vary between 1 and 21 cc, furthermore has been shown that this fluid bathes all abdominal and pelvic organs and can even enter the lumen of the Fallopian tubes. Also hematogenous and lymphatic spread or hyperimmune responses to *C. trachomatis* have been described (1-3).

Pelvic inflammatory disease may present with a significant variety of symptoms ranging from low abdominal pain to dysuria, as well as asymptomatic to a severe clinical frame (6,8). Low abdominal pain is the most common symptom, and is described as dull or cramping and tends to be exacerbated by movement, exercise or sexual intercourse (dyspareunia). Abnormal vaginal discharge is present in approximately 75% of cases. Physical examination usually reveals lower abdominal tenderness, pain to uterine and cervical motion or adnexal tenderness. The leukocytes are usually within normal limits or slightly elevated (6,8). Liver enzymes are normal or slightly elevated, although nonspecific transaminase elevations have been reported that improve with antibiotic treatment, attributed to perihepatic inflammation. The erythrocyte sedimentation rate (ESR) and C-reactive protein are elevated in 90% of the EIP and decrease progressively with treatment, a finding that has also been objectified in cases of Fitz-Hugh-Curtis syndrome (1,2,5,6).

For the isolation of the pathogen, samples are usually taken from the cervix exudate, although they also may be taken in the rectum, urethra, and pharynx. Gene amplification testings as the chain reaction (PCR) are considered as goal standard, being highly sensitive and specific and have replaced conventional culture tests, likewise specific serological tests for *C. trachomatis* are also used (8,9). Being a sexually transmitted germ, other agents must be discarded in the same category.

Imaging studies help confirm the diagnosis. The chest radiograph is performed to rule out right basal pneumonia and abdominal ultrasound to exclude cholecystitis, cholelithiasis and other common causes of right upper quadrant pain (1,2). Several typical ultrasonographic abnormalities in the perihepatic area related to the of Fitz-Hugh-Curtis syndrome have been described, such as fluid in the hepatorenal space and splenic hilum, loculated fluid in the abdomen and pelvis and anterior extrarenal space increased (2). The CT scan supports the diagnosis showing a contrast enhancement of the liver capsule (1,4,5). In the case of our

patient this information was not present; however other tomographic and ultrasound findings such as perihepatic and perivesicular involvement and free left paraanexial fluid were objectified.

A meta-analysis concluded that no single test exists that is neither sensitive nor specific, but certain combinations of tests for the diagnosis of PID and thus the syndrome of Fitz-Hugh-Curtis in the acute phase, due to the high variability of these diseases (8,10).

In the vast majority of cases of Fitz-Hugh-Curtis syndrome there are improvement in symptoms, laboratory abnormalities and imaging with appropriate antibiotic treatment (1,2), as clearly documented with our patient.

The number of diagnosed cases of this syndrome has increased due to the development of imaging techniques; however it is commonly misdiagnosed as other diseases, conditioning unnecessary tests and treatments with long hospital stay (1). For these reasons we recommend to remember this disease, especially when patients are women of childbearing age, sexually active and whose reason for consultation is right upper quadrant pain.

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