

## Case Report

DOI: <https://dx.doi.org/10.18203/2320-6012.ijrms20242946>

# Fitz-Hug-Curtis disease and cholelithiasis: literature review and case report

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**Received:** 10 September 2024

**Accepted:** 25 September 2024

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## ABSTRACT

Fitz-Hug-Curtis disease (FHCS) was first documented in 1930 and has subsequently gained increasing recognition as a rare complication of pelvic inflammatory disease (PID) in which microorganisms that cause sexually transmitted infections are commonly implicated. Methods: It is a Case Report of the classic presentation of FHCS that typically involves systemically healthy women in fertile age, who present with acute atypical abdominal pain in the right upper quadrant that is often confused with another hepatobiliary or gastrointestinal pathology. The diagnosis was confirmed by laparoscopy, which allows the classic adhesions reminiscent of the strings of a violin to be visualized and the infectious agent responsible for pelvic disease to be isolated.

**Keywords:** Chronic cholelithiasis, Fitz-Hug-Curtis's disease, Laparoscopic cholecystectomy

## INTRODUCTION

PID is an ascending microbial infection that affects the genital tract in sexually active women between 15 and 30 years of age. The United States experiences 750,000 cases of PID each year. FHCS is an uncommon manifestation of PID affecting about 4% of adolescents.<sup>1</sup> Although many organisms are associated with FHCS, Chlamydia trachomatis is the most common pathogen involved.<sup>2</sup> The prevalence in women with mild to moderate pelvic inflammatory disease may approach 4%. The prevalence may be higher in genital tuberculosis. It occurs most frequently in women of childbearing age; however, rare cases have been reported in men.<sup>3</sup>

The epidemiology of Fitz-Hug-Curtis (FHCS) is complex and varies according to the population studied. FHCS is considered a rare disease and the incidence is generally estimated to be approximately 1 to 2 cases per

100,000 population per year.<sup>4</sup> In Mexico, a recent case of this disease has been presented in a 49-year-old male with a personal pathological history of grade 1 obesity, umbilical plastic surgery 9 years ago, smoking and alcohol abuse of 20 years of evolution.<sup>5</sup>

## Pathophysiology

The pathophysiology of perihepatitis SCCHF is unclear, but direct infection of the liver capsule, hematologic or lymphatic dissemination, and an exaggerated immune response have been suggested.<sup>6</sup> Although the first microorganism described as the causative agent of SCCHF was *N. gonorrhoea*, *C. trachomatis* appears to be the most common cause of the syndrome today. Other microorganisms, such as *Ureaplasma urealyticum* or *Mycobacterium tuberculosis*, have been described more recently and in fewer cases. Also, association with anaerobic bacteria, such as *Mycoplasma genitalium* and

other gram-negative bacteria.<sup>7</sup> A theory has been suggested through a case report in which the spread of the infection could take place through the bloodstream. Hematogenous spread was supported by the finding of focal lesions in a patient with HCSF, which was resolved with the use of antibiotics. Another theory suggests dissemination through the lymphatic tract, and this could explain the fact that most patients have no signs of extensive intra-abdominal infection or disseminated bloodstream infection.<sup>8</sup> Complications include endometritis, salpingitis, ovarian tube abscess, pelvic peritonitis and perihepatitis. Finally, hematogenous dissemination is also possible, as with tuberculosis.<sup>8</sup>

### Risks factors

Fitz-Hugh-Curtis syndrome is often diagnosed by computed tomography (CT) and ultrasound. Findings on a CT report of Fitz-Hugh-Curtis syndrome are consistent with increased hepatic capsular enhancement in the arterial phase. However, it can often be an incidental finding during laparoscopic procedures.<sup>9</sup>

On the other hand, Fitz-Hugh-Curtis syndrome (FHCFS) can lead to a variety of complications, some of which can be serious and life-threatening. One of the most common complications of HCFS is the formation of adhesions between abdominal organs, which can lead to intestinal damage, such as obstruction and chronic pain. These adhesions can be formed as a result of chronic inflammatory response and scar tissue formation in the peritoneal cavity.<sup>10</sup>

Another complication of HCFS is the formation of hepatic or peritoneal abscesses, which may cause fever, severe abdominal pain and general malaise. Liver abscesses may require surgical or radiological drainage to prevent the spread of infection and avoid sepsis. In rare cases, HCFS can lead to hepatic rupture or liver cyst formation, which may require emergency surgery to prevent bleeding and the spread of infection.

In addition, other complications related to infection with sexually transmitted pathogens, such as infertility and obstetric complications in pregnant women, have been reported. HCFS can lead to a variety of complications, including adhesion formation, liver or peritoneal abscesses, liver rupture and liver cysts. These complications may require medical and surgical treatment and, in some cases, can be life-threatening.<sup>10</sup>

### Clinical presentation

Clinical manifestations are nonspecific and include pain in the right hypochondrium, sometimes radiating to the shoulder or back, pain with deep inspiration, fever, nausea or loss of appetite. The characteristic symptoms of PID can sometimes be of little relevance or even absent, with pelvic manifestations usually being absent in the

case of male patients. Patients often report epigastric discomfort or pain in other quadrants of the abdomen.<sup>7</sup>

### Relation of the disease to chronic calculous cholecystitis

Chronic cholecystitis is a chronic disease caused by ongoing inflammation of the gallbladder resulting in mechanical or physiological dysfunction of its emptying. It presents as a latent course that may be accompanied by acute exacerbations of increasing pain (acute biliary colic) or may progress to a more severe form of cholecystitis requiring urgent intervention (acute cholecystitis).

There are classic signs and symptoms associated with this disease, as well as its prevalence in certain patient populations. The two forms of chronic cholecystitis are calculous (occurring in the context of cholelithiasis) and acalculous (without gallstones). However, most cases of chronic cholecystitis are commonly associated with cholelithiasis.<sup>11</sup> Fitz-Hugh-Curtis disease may be related to chronic calculous cholecystitis. However, there are few studies that define this relationship.<sup>12</sup>

### CASE REPORT

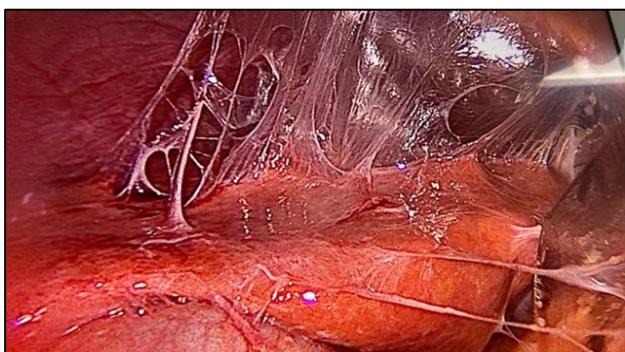
This is a 34-year-old female patient with a history of 4 urinary tract infections in the last 4 months with multiple sexual partners. History of tubal recanalization 4 years ago due to infertility. She was admitted to the emergency department for 3 days because of rapidly progressive right hypochondrium stabbing pain, exacerbated in the last 24 hours, which increased with food intake. On physical examination, abdomen with distension, normoperistalsis, painful palpation in the right hypogastrium and hypochondrium, positive Blumberg, genitals with presence of vulvar and perianal erythema, with mild leucorrhea, on rectal examination, posterior and closed cervix.

Analytically, blood biometry BH 11.5 g/dl, Leukocytes 11,500, neutrophils 80% Platelets 230,000, PFH: BD 3.5 BI 2.3 BI 1.7 AST 300 ALT 401 FA 679 amylase 41, CRP 8.5 mg/dl ESR 25 QSC: glucose 123 mg/dl Creatinine 1.2 mg/dl, Coagulation times: PT 11 TPP 30 INR 1.2, urine sediment normal.

In view of the suspicion of acute hepatobiliary pathology, hepatobiliary ultrasound was requested, which reported lithos and vesicular wall values of 5 mm (Figure 1), so laparoscopic surgery was decided. After inserting a 12 mm trocar and performing 360-degree vision, multiple suprahepatic adhesions of "violin strings" type was observed (Figure 2), adhesiolysis with energy and biopsy was performed (Figure 3), security vision was performed (Figure 4) and laparoscopic cholecystectomy was performed without complications, the patient was discharged 24 hours after surgery with prophylactic antibiotic treatment, which was adjusted 4 days later due to a report of *N. gonorrhoea*.



**Figure 1: Visualization of gallbladder calculus.**



**Figure 2: Multiple sup hepatic adhesions (violin strings).**



**Figure 3: Adhesiolysis of the patient.**



**Figure 4: Visualization of the Callot's triangle in the transoperative, Strasberg's "safe view" after Adherenceolysis.**

## DISCUSSION

Fitz-Hugh-Curtis disease is characterized by peri hepatic inflammation concomitant with pelvic inflammation, mainly in women of childbearing age. In an acute phase, it presents as abdominal pain in the right upper quadrant (hypochondrium), while the chronic phase is only observed by laparoscopy observing the adhesions of the hepatic capsule to the abdominal wall, classically described as "violin strings", which is diagnostic criterion. Biochemically, we can find leukocytosis in more than half of the patients as well as elevation of acute phase reactants with ESR and CRP. However, liver function tests are normal.

Regarding other diagnostic imaging support such as tomography, it is a characteristic image of peri hepatic enhancement along the anterior surface of the liver in the initial phases. However, it is not pathognomonic. However, it can often be an incidental finding during laparoscopic procedures, as is the case of our patient who showed no alterations in the imaging study. Although after laparoscopic cholecystectomy prophylactic antibiotic treatment is indicated, in the case of our patient it was decided to prophylaxis with gentamicin at a loading dose of 2 mg/kg and later with 1.5 mg/kg every 8 hours, with a dose of clindamycin 300 mg orally every 8 hours until completing 14 days, as explained by Sánchez and colleagues, which remitted both abdominal and genital symptoms.<sup>7,9</sup>

## CONCLUSION

Fitz-Hugh-Curtis disease is a rare clinical presentation of upper gynecological infections, characterized by perihepatic inflammation and adhesions in the form of "violin strings" concomitant with pelvic inflammation, mainly in women of childbearing age. In an acute phase, it presents as abdominal pain in the right hypochondrium and in a chronic phase it can be found as a surgical finding. In reality, the association of cholelithiasis and HCFS is clinical, since there are different diagnoses and there is no established pathological association between both pathologies.

The cornerstone of the diagnosis is the clinical. The number of diagnosed cases of this disease has increased due to the development of imaging techniques. However, it is commonly underdiagnosed as other diseases, and the lack of knowledge of this unusual pathology leads us to not identify it and therefore not treat it properly like it is recommended that in all diagnostic laparoscopy perform a cautious exploration of the entire abdominal cavity, in intentional search of this uncommon pathology, but important differential diagnosis.

*Funding: No funding sources*

*Conflict of interest: None declared*

*Ethical approval: Not required*

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**Cite this article as:** Santos LG, Guzmán EI, Cruz I, Higareda DI, Reyes LA. Fitz-Hugh-Curtis disease and cholelithiasis: literature review and case report. *Int J Res Med Sci* 2024;12:3857-60.