

Case Report

Fitz-Hugh-Curtis Syndrome Mimicking Biliary Disease in Tanzania; A Case Series

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Abstract: **Introduction:** Fitz-Hugh-Curtis Syndrome (FHCS) is a rare complication of pelvic inflammatory disease (PID) characterized by inflammation of the liver capsule and peritoneum, often resulting from chlamydial or gonococcal infections. Although it typically presents with right upper quadrant (RUQ) pain, its diagnosis can be challenging due to its similarity to other gastrointestinal or hepatic disorders. Understanding FHCS and its associated risk factors is crucial for timely diagnosis and management. **Case 1:** A 38-year-old female presented with episodic RUQ and epigastric pain over several months, unresponsive to medical treatment. Ultrasound showed gallstones, during laparoscopic cholecystectomy revealed violin-like adhesions on the liver, suggestive of FHCS. The patient had a history of multiple chlamydial infections and post surgery she became symptom free. **Case 2:** A 32-year-old woman with persistent RUQ pain, worsened by cold weather, underwent diagnostic laparoscopy revealing violin-like adhesions over the liver confirming FHCS. She underwent adhesiolysis and improved without further complications. **Case 3:** A 30-year-old female with symptomatic cholelithiasis and recurrent RUQ pain underwent laparoscopic cholecystectomy. During surgery, violin-like adhesions were noted, suggestive of FHCS. She underwent adhesiolysis and cholecystectomy with complete symptom resolution. **Clinical Discussion:** Fitz-Hugh-Curtis Syndrome is often underdiagnosed and can mimic other conditions like gallbladder disease or gastrointestinal disorders. Early diagnosis through imaging and laparoscopic evaluation is essential. Treatment may involve involves surgical intervention via adhesiolysis. **Conclusion:** FHCS should be considered in women with unexplained RUQ pain and a history of PID or sexually transmitted infections. Early surgical intervention led to successful outcomes with symptom resolution.

Keywords: Pelvic Inflammatory Disease, Right Upper Quadrant Pain, Fitz-Hugh-Curtis Syndrome, Laparoscopy, Case Series.

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INTRODUCTION AND IMPORTANCE

Fitz-Hugh-Curtis Syndrome (FHCS), also known as Stajano's syndrome, was first described in 1922 by Stajano and initially referred to as a phrenic reaction in gynecology (Rodríguez Escudero, 2023). It is a rare extrapelvic complication of pelvic inflammatory disease (PID), characterized by perihepatic adhesions involving the liver capsule and occurring almost exclusively in women (Gul *et al.*, 2018). These adhesions, often described as violin-string-like structures, are typically associated with PID caused by

Chlamydia trachomatis and less commonly *Neisseria gonorrhoeae* (Curry *et al.*, 2019).

FHCS commonly presents with right upper quadrant (RUQ) pain and may mimic hepatobiliary or gastrointestinal conditions such as gallbladder disease or hepatitis (Tanitame *et al.*, 2020; Wei *et al.*, 2025). Although uncommon, its recognition is essential to avoid misdiagnosis and unnecessary interventions. The condition is frequently diagnosed incidentally during laparoscopic procedures such as cholecystectomy, where characteristic adhesions between the liver capsule and anterior abdominal wall are visualized (Escudero, 2022).

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The clinical presentation may include episodic RUQ or epigastric pain, sometimes associated with nausea, vomiting, fever, or cyclical exacerbations related to menstruation (Kumari *et al.*, 2024). Due to its nonspecific symptoms, FHCS is often mistaken for gallstones or peptic ulcer disease. However, identification of violin-string adhesions intraoperatively confirms the diagnosis (Kumari *et al.*, 2024). Early recognition is important, as treatment typically involves surgical adhesiolysis to relieve symptoms (Juan *et al.*, 2024).

This case series highlights the presentation, diagnostic challenges, and management of FHCS in women presenting with RUQ pain and a history suggestive of sexually transmitted infections. All cases were diagnosed intraoperatively and managed

laparoscopically with favorable outcomes, in accordance with SCARE guidelines (Sohrabi *et al.*, 2023).

CASE PRESENTATION

Case 1:

A 38-year-old female presented with episodic RUQ and epigastric pain for the past four years. The pain was described as colicky in nature and was associated with changes in bowel habits. She had been extensively worked up with multiple Oesophagogastroduodenoscopy (OGD) and Helicobacter pylori (*H. pylori*) treatment, which provided only mild relief. An ultrasound revealed the presence of gallstones, prompting the recommendation for laparoscopic cholecystectomy. However, during surgery, violin-string-like adhesions were discovered on the liver capsule, which were suggestive of FHCS (**Fig 1**).



Fig. 1: Violin string like adhesions noted over the liver capsule adhering to the anterior abdominal wall

Further evaluation and adhesiolysis were performed, alongside the cholecystectomy, resulting in the removal of the gallbladder and resolution of the adhesions. The patient had a successful postoperative recovery, with no further complaints of RUQ pain or gastrointestinal symptoms. A retrospective review of her past medical history revealed the history of multiple STI approximately 10 years ago. She was reviewed by a gynecologist who started antibiotics of STI. The patient has been doing well postoperatively and is currently pain-free, with no recurrence of symptoms.

Case 2:

A 32-year-old female presented with persistent RUQ pain, which worsened in cold weather. The pain had been persistent for several years, despite initial conservative management that included analgesics and dietary changes. Imaging studies and OGD were otherwise normal with persistence of pain suspecting due to hepatobiliary in origin thus the patient was referred for a diagnostic laparoscopy. During the procedure, violin-string-like adhesions were noted on the liver capsule, strongly suggestive of FHCS (**Fig 2**).

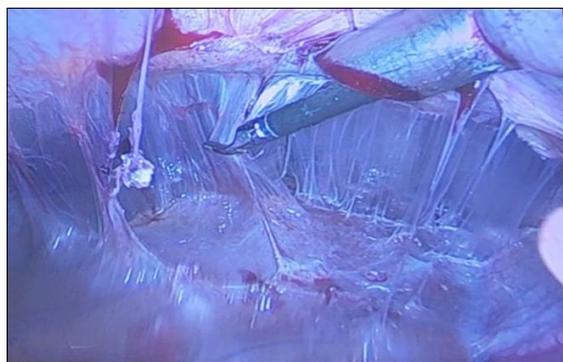


Fig. 2: Adhesiolysis of violin string like structures over the liver capsule carrier out using bipolar forceps

Adhesiolysis was performed, and the adhesions were successfully removed, resulting in significant resolution of the patient's symptoms. The patient had an uneventful postoperative recovery and retrospectively the patient was found to have a history of recurrent chlamydial infections while in university. She is now pain free for more than 5 years following a turbulent period of persistent RUQ pain.

Case 3:

A 30-year-old female with a history of symptomatic cholelithiasis and recurrent episodes of RUQ pain was scheduled for a laparoscopic cholecystectomy. Intraoperatively was found to have violin-string-like adhesions on the liver capsule, which were suggestive of FHCS. The adhesions were cleared via adhesiolysis followed by successful cholecystectomy (Fig 3).

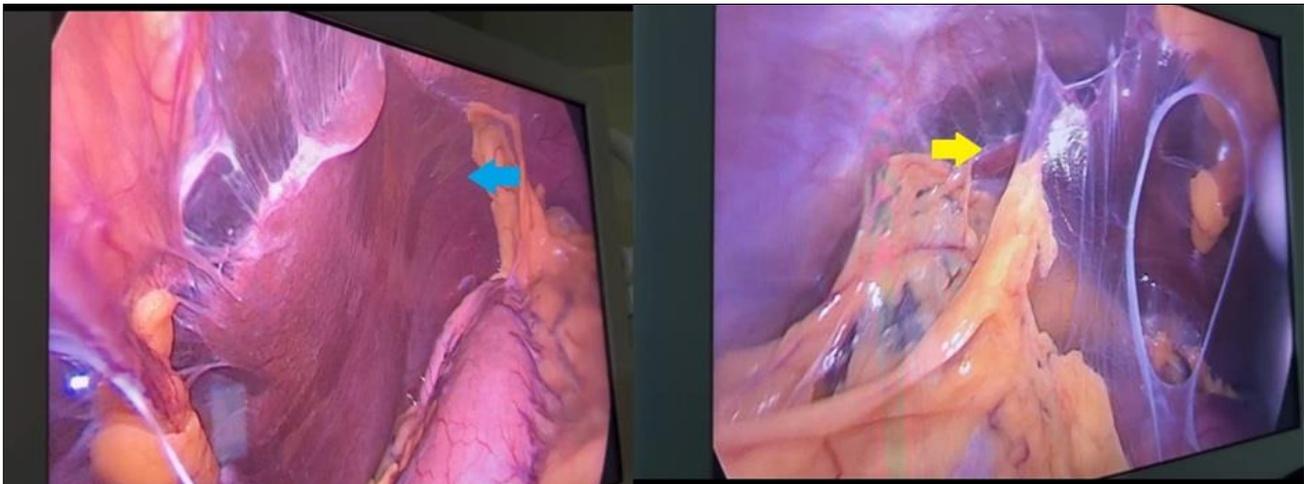


Fig. 3: Violin string like adhesions seen completely adhering the left (Blue arrow) and right lobe (Yellow arrow) of the liver to the anterior abdominal wall

Postoperatively, the patient experienced a complete resolution of her symptoms, including the chronic RUQ pain that had plagued her for several years. She was subsequently symptom-free and recovered well with no complications. This case emphasizes the need for surgeons to be aware of the possibility of FHCS during abdominal surgeries, as adhesions may be encountered unexpectedly. Retrospectively was found to have a notable history of multiple STIs 10 years ago but was disease free since.

DISCUSSION

First described by Fitz-Hugh and Curtis in the early 20th century, FHCS has evolved from a poorly understood entity to a recognized complication of PID. While historically associated with *Neisseria gonorrhoeae*, more recent evidence identifies *Chlamydia trachomatis* as the predominant causative organism (Kumari *et al.*, 2024). Advances in diagnostic modalities, including computed tomography (CT) and laparoscopy, have improved recognition of its characteristic perihepatic findings (Cho *et al.*, 2008).

The pathophysiology involves ascending infection from the pelvis to the peritoneum and liver capsule, resulting in inflammation and subsequent formation of fibrous adhesions. These adhesions create the classic violin-string appearance between the liver and abdominal wall (Gul *et al.*, 2018; Juan *et al.*, 2024). Although the exact mechanism remains unclear,

immune-mediated inflammatory processes are thought to contribute significantly.

Diagnosis remains challenging due to overlap with hepatobiliary and gastrointestinal conditions. Laboratory investigations, particularly nucleic acid amplification tests, are valuable in identifying underlying infections such as *Chlamydia trachomatis* and *Neisseria gonorrhoeae* (Curry *et al.*, 2019). Imaging modalities, especially contrast-enhanced CT, may demonstrate hepatic capsular enhancement, perihepatic fluid, or inflammatory changes without liver parenchymal involvement (Cho *et al.*, 2008). However, these findings are often subtle, making laparoscopy the gold standard for definitive diagnosis.

Management typically involves laparoscopic adhesiolysis, which provides both diagnostic confirmation and therapeutic benefit (Juan *et al.*, 2024). In our cases, intraoperative identification of adhesions followed by adhesiolysis resulted in significant symptom resolution. Adjunctive antibiotic therapy targeting PID pathogens may also be required, depending on clinical context (Curry *et al.*, 2019).

CONCLUSION

In conclusion FHCS, although rare, should be considered in the differential diagnosis of women presenting with chronic RUQ pain, particularly those with prior history of PID or risk factors for it. The case series highlights the importance of awareness of FHCS

and its intraoperative findings as they may be encountered intraoperatively during surgery for other conditions causing RUQ pain. The successful outcome of our cases, although few, illustrates the effectiveness of adhesiolysis of the “violin like” structures over the liver in management of FHCS. Diagnosis of FHCS preoperatively is difficult thus clinicians should be aware of its possibility as an intraoperative finding and how to manage them.

Abbreviations:

CT – Computed Tomography
FHCS – Fitz Hugh Curtis Syndrome
OGD – Oesophagogastroduodenoscopy
PID – Pelvic Inflammatory Disease
RUQ – Right Upper Quadrant
STI – Sexually Transmitted Infection

Author Contribution:

C.S. : Study conception, production of initial manuscript, collection of data, proofreading
O.H. : Study conception, production of initial manuscript, collection of data
M.M. : Revision of the manuscript, proofreading
A.M. : Revision of the manuscript, proofreading
A.M. : Revision of the manuscript, proofreading
A.I. : Study conception, Revision of the manuscript, proofreading

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During the preparation of this work, the authors used Grammarly to correct sentence grammar and spelling. After using this tool/service, the authors reviewed and edited the content as needed and takes full responsibility for the content of the publication

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