

Fitz-Hugh-Curtis Syndrome: A Case Report

Adriano Soares^{1*}, Pedro Brandão², Pedro Miguel da Silva Oliveira¹

¹Department of Obstetrics and Gynaecology, Hospital da Senhora da Oliveira, Guimarães, Portugal; ²Department of Reproductive Medicine, Instituto Valenciano de Infertilidade, Valência, Spain

ABSTRACT

The Fitz-Hugh-Curtis syndrome or perihepatitis is a rare chronic manifestation of pelvic inflammatory disease. It is an inflammation of the liver capsule and peritoneal surfaces of the anterior right upper quadrant with adhesion formation accompanied by right upper quadrant pain.

We report a case resistant to the antibiotic therapy instituted and managed with the laparoscopic surgical approach and photographic documentation of the “violin string-like adhesions” between the anterosuperior hepatic surface and the abdominal wall.

The Fitz-Hugh-Curtis syndrome is the rarest complication of pelvic inflammatory disease. Despite the extensive description of these adhesions in the literature, their photographic documentation is scarce. The authors present here a case with photographic documentation of the “violin string-like adhesions”, furthering medical literature.

Keywords: Fitz-Hugh-Curtis syndrome; Perihepatitis; Pelvic inflammatory disease; Laparoscopy

INTRODUCTION

The Fitz-Hugh-Curtis Syndrome (FHCS) or perihepatitis is a chronic manifestation of Pelvic Inflammatory Disease (PID) [1,2]. It consists of the inflammation of the liver capsule and peritoneal surfaces within the anterior right upper quadrant, sparing the liver parenchyma, with adhesion formation accompanied by right upper quadrant pain [3,4].

The Fitz-Hugh-Curtis syndrome is an uncommon complication of pelvic inflammatory disease [5]. Its association with gonococcal infection was first reported in 1934 and is most commonly associated with *Chlamydia trachomatis* infection [6,7]. The right upper abdominal pain presents as the main symptom and is aggravated by movement and deep breathing. Sporadically, the pain may radiate to the right shoulder [8]. Liver function tests are frequently normal or only slightly elevated [1].

The pathophysiology of this disease is not fully understood but may involve either direct extension of infected material from the cul-de-sac through the peritoneum and/or lymphatics or an immunologically mediated mechanism [6].

The diagnosis is normally assumed based on clinical findings, medical history, and response to treatment. However, the definitive diagnosis is only possible through direct visualization, via laparoscopy or laparotomy, of the characteristic “violin string-like

adhesions”, which affect mostly the anterior surfaces of the liver or by hepatic capsular biopsy and subsequent culture [6,9].

CASE REPORT

A 21-year-old healthy nulliparous woman was admitted to the emergency department with lower abdominal pain that started one week prior, fever, and alteration in vaginal discharge. Upon physical examination, she presented a tympanic temperature of 38.6°C, painful lower abdomen palpation, moderate tenderness of the right upper quadrant, purulent leukorrhea, and painful cervical mobilization. Her medical history is unremarkable, except for unprotected sexual contact with a new partner. Blood tests revealed leukocytosis with neutrophilia, increased C-Reactive Protein, and slightly elevated liver enzymes. Vaginal exudate for *Chlamydia Spp* and *Neisseria Spp*, as well as serologies for Hepatitis B and C, Syphilis, and HIV, were carried out. Transvaginal sonography demonstrated a normal-sized uterus, linear endometrium, a fluid lamina in Douglas Pouch, probable bilateral hydrosalpinx, an adnexal heterogeneous mass on the left side, with 73 mm of maximum dimension and ovaries with no apparent alterations.

The patient was hospitalized with a diagnosis of Pelvic Inflammatory Disease complicated by a tubo-ovarian abscess and started empirical antibiotic therapy (cefotaxime and doxycycline). By the 3rd day due to maintenance of the clinical condition with analytical

Correspondence to: Adriano Manuel de Sousa Soares, Department of Obstetrics and Gynaecology, Hospital da Senhora da Oliveira, Guimarães, Portugal; E-mail: adriano.soares089@gmail.com

Received: February 10, 2020; **Accepted:** February 19, 2021; **Published:** February 26, 2021

Citation: Soares A, Brandão P, Oliveira PMD (2021) Fitz-Hugh-Curtis Syndrome: A Case Report. Gynecol Obstet (Sunnyvale) 11:549.

Copyright: ©2021 Soares AMD, et al. This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited

aggravation, an increase in C-Reactive Protein, surgical intervention was decided. An exploratory laparoscopy was performed and showed extensive adhesions between the pelvic structures (Figure 1), a left tubo-ovarian abscess (Figure 2), and also adhesions between the anterosuperior hepatic surface and the abdominal wall (Figure 3). Sometimes referred to as “violin string-like adhesions,” this finding is characteristic of the Fitz-Hugh-Curtis syndrome, a condition in which perihepatitis develops in association with pelvic inflammatory disease. A left salpingectomy and perihepatic lysis of adhesions were conducted. The postoperative period was uneventful and the patient was discharged 5 days after surgery. At follow-up, 2 months after surgery, the patient was asymptomatic and all serologies were negative. Chlamydia trachomatis was isolated on the vaginal exudate culture.

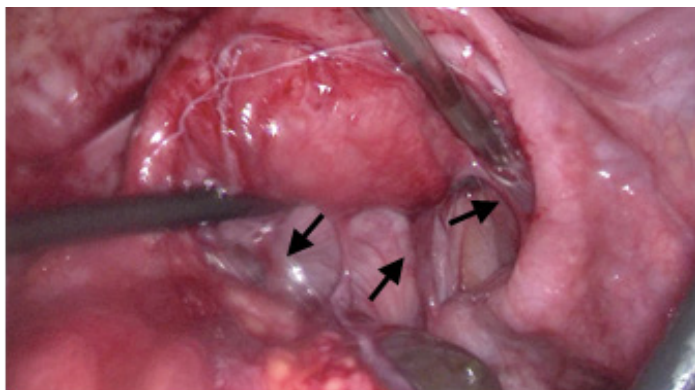


Figure 1: Adhesions between the uterus, fallopian tubes, ovaries and epiploon (arrows).

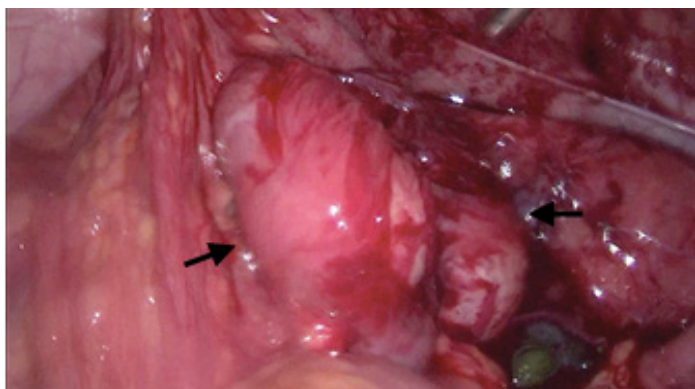


Figure 2: Left tubo-ovarian abscess.

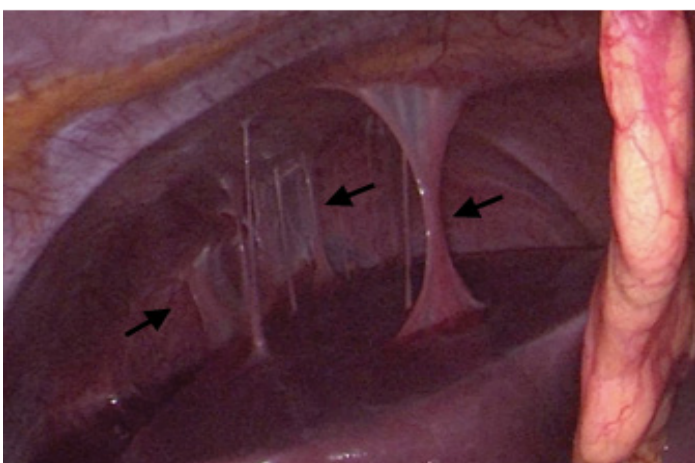


Figure 3: “Violin string-like adhesions” between the anterosuperior hepatic surface and the abdominal wall.

DISCUSSION AND CONCLUSION

Pelvic inflammatory disease is a polymicrobial infection of the upper genital tract, which usually affects sexually active young women. In the majority of cases, PID is the result of the ascension of microorganisms from the lower genital tract. In this case, the disease was complicated by a tubo-ovarian abscess and perihepatitis [10].

The pelvic inflammatory disease should always be considered in a sexually active woman with lower abdominal or pelvic pain. The differential diagnosis is made mainly with ectopic pregnancy, ovarian torsion, rupture of an adnexal mass, endometriosis, appendicitis, and gastroenteritis [11]. The presence of pain in the upper right quadrant represents a diagnostic challenge since it is a manifestation of several other hepato-biliary and gastrointestinal diseases [12]. However, the presence of other genitourinary symptoms, such as vaginal discharge and painful cervical mobilization, should lead to consideration of this syndrome.

Risk factors for PID are the same as those for the acquisition of sexually transmitted diseases, such as multiple sexual partners, young age, or unprotected sex [13]. In this case, a recent unprotected sexual contact with a new partner was mentioned.

Antibiotic therapy is the basis of PID treatment. The wide variety of implicated pathogens are typically covered by the empiric therapeutic regimens used. They depend on whether the patient is hospitalized or treated as an outpatient. This decision is made based on the severity of the infection. The multiple therapeutic regimens used are all associated with clinical and microbiologic cure rates of greater than 90 percent [14,15]. A combination of Cefoxitin (2 g intravenously, every six hours) plus doxycycline (100 mg orally, every 12 hours) as used in this case is considered a unanimous recommendation.

Given the lack of response to the therapeutic regimen instituted with clinical deterioration, an exploratory laparoscopy, the gold standard imaging technique for diagnosing the syndrome, was decided [1]. Left salpingectomy and lysis of pelvic and hepatic adhesions were also performed.

Despite having an uneventful postoperative period, long-term complications such as chronic pelvic pain, infertility, or ectopic pregnancy are a possibility for this patient [16,17].

The FHCS is the rarest complication of DIP. Despite the extensive description of “violin string-like adhesions” in the literature, their photographic documentation is scarce. In addition to the rarity of the syndrome, it is generally managed with an antibiotic regimen, being currently more frequent in countries where health care is more deficient and where its approach by laparotomy makes it difficult to obtain images. The authors present a case with photographic documentation of the “violin string-like adhesions”, furthering medical literature.

CONFLICTS OF INTEREST

The authors declare no conflicts of interest.

REFERENCES

1. Ekabe CJ, Kehbila J, Njim T, Kadia BM, Tendonge CN, Monekosso GL. Chlamydia trachomatis- induced Fitz-Hugh-Curtis syndrome: A case report. BMC Res Notes. 2017;10:14.
2. Di Rocco G, Giannotti D, Collalti M, Mele R, Pontone S, Frezzotti F, et al. Acute abdominal pain in a 24-year-old woman: Fitz-

- Hugh-Curtis syndrome associated with pyelonephritis. *Clinics*. 2012;67(12):1493-1495.
3. You JS, Kim MJ, Chung HS, Chung YE, Park I, Chung SP, et al. Clinical features of Fitz-Hugh- Curtis Syndrome in the emergency department. *Yonsei Med J*. 2012;53:753-758.
 4. Morita S, Fujikawa T. Right upper quadrant pain in a young woman. *Lancet Infect Dis*. 2020;20(6):753.
 5. Sanchez R, Jara M, Martinez G. Fitz-Hugh-Curtis syndrome: A cause of right upper quadrant abdominal pain. *Medicina Clinica*. 154; 2020, Pages 447-452.
 6. Basit H, Pop A, Malik A. Fitz-Hugh-Curtis Syndrome. In: *StatPearls*. 2021.
 7. Grigoriadis G, Green J, Amin A, Cross D. Fitz-Hugh-Curtis syndrome: An incidental diagnostic finding during laparoscopic sterilization. *Cureus*. 2020;12:10-13.
 8. Shikino K, Ikusaka M. Fitz-Hugh-Curtis syndrome. *BMJ Case Rep*. 2019;12:229326.
 9. Guerra F, Coletta D. Fitz-Hugh-Curtis syndrome. *N Engl J Med*. 2019 Nov 28;381:e38.
 10. Caeiro AF, Ramilo I, Diniz-costa T. Doença inflamatória pélvica-um desfecho inesperado. *Acta Obstet e Ginecológica Port*. 2015;9:83-86.
 11. Jean M, Helen B. Update in sexually transmitted infections, an issue of infectious disease. *Infect Dis Clinics North America*. 2013;27.
 12. Lam R, Jamidar PA, Aslanian HR, Muniraj T. Fitz-Hugh-Curtis syndrome presenting as acute abdomen. *Am J Med*. 2020;133:e596.
 13. Simms I, Stephenson JM, Mallinson H, Peeling RW, Thomas K, Gokhale R, et al. Risk factors associated with pelvic inflammatory disease. *Sex Transm Infect*. 2006;82:452-457.
 14. Pastorek JG. Antibiotic therapy for pelvic inflammatory disease. *J Reprod Med Obstet Gynecol*. 1990;35;329-332.
 15. Washington AE, Walker CK, Kahn JG, Peterson HB, Sweet RL, Washington AE, et al. Pelvic Inflammatory Disease: Metaanalysis of Antimicrobial Regimen Efficacy. *J Infect Dis*. 1993;168:969-978.
 16. Trent M, Bass D, Ness RB, Haggerty C. Recurrent PID, subsequent STI, and reproductive health outcomes: Findings from the PID Evaluation And Clinical Health (PEACH) study. *Sex Transm Dis*. 2011;38:879-881.
 17. Yeh JM, Hook EW, Goldie SUEJ. A refined estimate of the average lifetime cost of pelvic inflammatory disease. *Curr Opin Neurol*. 1996;9:369-378.