Chlamydia trachomatis Associated Fitz-Hugh-Curtis Syndrome

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Abstract

Fitz-Hugh-Curtis syndrome (FHCS) is characterized by hepatic capsulitis associated with pelvic inflammatory disease. This syndrome often presents with right-sided abdominal pain mimicking other hepatobiliary and gastrointestinal diseases, therefore posing a potential diagnostic dilemma. We present a case of Fitz-Hugh-Curtis syndrome secondary to Chlamydia trachomatis with computed tomography (CT) findings of hepatic capsule and subcapsular enhancement.

Case Presentation

A 25-year-old female with known intravenous substance abuse presented to the emergency department with 2 weeks of worsening right upper quadrant pain. The patient noted recent development of right pleuritic chest pain with radiation into the right shoulder and neck. In addition, she reported suprapubic pain and nausea. She did report recent vaginal discharge and denied fevers, change in bowel habits and urinary symptoms. Last menstrual period was 10 days prior. Previous surgical history was notable for remote cholecystectomy. Pain was exhibited with palpation of the right upper and both lower quadrants. Pelvic examination was positive for cervical motion tenderness. Transvaginal ultrasound of the pelvis revealed free fluid with enlargement and hyperemic left fallopian tube, indicative of salpingitis (Figure 1). Clinical, ultrasound and laboratory findings of cervical cultures positive for Chlamydia trachomatis confirmed diagnosis of pelvic inflammatory disease (PID). CT with intravenous contrast revealed extensive inflammatory changes in the pelvis, thickening of the peritoneum and intense enhancement and thickening of the hepatic capsule (Figures 2). These findings in association with PID supported diagnosis of FHCS.

Discussion

Fitz-Hugh-Curtis syndrome represents an extrapelvic complication of pelvic inflammatory disease first reported in 1920 but characterized by Thomas Fitz-Hugh and Arthur Curtis in the early 1930’s. FHCS is characterized by hepatic capsulitis and perihepatitis and frequently is associated with right upper quadrant (RUQ) pain in concert with signs and symptoms of PID (fever, lower abdominal and pelvic pain, vaginal discharge, cervical motion tenderness). According to Centers for Disease Control and Prevention 2015 Sexually Transmitted Diseases Treatment Guidelines, the diagnostic criteria for PID includes unexplained lower abdominal or pelvic pain and at least one of the following signs: cervical motion tenderness, uterine tenderness and adnexal tenderness. RUQ pain is typically sharp in character and often referred to the right shoulder. Nausea, vomiting, fever, hiccuping, night sweats and malaise may accompany this disease. While pelvic symptoms indicative of PID are usually present at the time of diagnosis, FHCS may be present in patients without lower abdominal and pelvic pain. The presence of RUQ and shoulder pain may pose a diagnostic challenge to physicians, as these symptoms may be a manifestation of other hepatobiliary, gastrointestinal and urogenital diseases. FHCS is almost entirely restricted to women and likely reflects the intra-abdominal spread of infection from the pelvis to the subphrenic and peripancreatic spaces via the right paracolic gutter. FHCS is most common in women of child bearing age with a prevalence of 12 -14% in women with PID. Causative organisms include Neisseria gonorrhea and Chlamydia trachomatis, with the latter accounting for the majority of the cases. Medical management of FHCS coincides with the management of PID and consists of antibiotic therapy with azithromycin or doxycycline. Laparoscopy is generally warranted in the setting of symptomatic adhesiolysis for symptomatic relief. The long-term complications include abdominal pain, small bowel obstruction and infertility.

Ultrasound may demonstrate fluid within the RUQ but is not diagnostic of FHCS. However, the value of ultrasound corresponds to the exclusion of other etiologies associated with RUQ pain and the diagnosis of PID. US findings associated with PID include pelvic fluid, salpingitis, oophoritis, hydrosalpinx, pyosalpinx, and tubo-ovarian abscess. Laparoscopic
Figure 1. PID: (a) Longitudinal transvaginal ultrasound image shows complex free fluid within the cul-de-sac (arrow). (b) Longitudinal transvaginal color Doppler ultrasound image of the pelvis reveals thickened and hyperemic left fallopian tube (arrow) compatible with salpingitis.

Figure 2. Fitz-Hugh-Curtis Syndrome: (a, b) Axial CT images show enhancing and thickened hepatic capsule (arrows).
evaluation in the acute phase of
the FHCS reveals hepatic capsular
inflammation with patchy exudate
formation. ‘Violin string’ adhesions
between the liver capsule and
the anterior abdominal wall or
diaphragm are observed in the more
advanced or chronic stages of the
disease.  

While laparoscopy is the
gold standard for diagnosing FHCS
and PID, less invasive tests for the
evaluation of the RUQ are preferred.

Hepatic capsular thickening
and enhancement due to
increased blood flow and adjacent
inflammation is the characteristic
finding on contrast enhanced CT.  

Capsular inflammation may also
lead to geographic areas of variable
subcapsular hepatic perfusion.

Fat stranding and fluid within the
abdomen may be present, extending
from the pelvis by way of the right
paracolic gutter. In addition, CT
reveals inflammatory changes of the
pelvis associated with PID. Classic
‘violin string’ adhesions between
the liver capsule and abdominal
wall may be found in the presence
of perihepatic fluid accumulation.

**Conclusion**

Fitz-Hugh-Curtis syndrome
represents a complication of PID
and is defined as inflammation
of the peritoneal capsule of the
liver. Ultrasound plays a vital role
in excluding other diagnoses and
aiding in the evaluation of PID.

Contrast enhanced CT reveals
the characteristic finding of FHCS
consisting of enhancement of the
hepatic capsule and facilitates
correct diagnosis. The presence
of abdominal and shoulder pain
may pose a diagnostic challenge
to physicians, as these symptoms
may be a manifestation of other
hepatobiliary, gastrointestinal
and urogenital diseases.

Therefore, FHCS should be
considered in women of
childbearing age with RUQ pain.

**References**