

## Hiccups Caused by Fitz-Hugh-Curtis Syndrome

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To the Editor,

A previously healthy 28-year-old woman presented with a 2-week history of abdominal pain in the right upper quadrant and right lower quadrant. Her body temperature was 35.7 °C. On palpation, the patient had right hypochondriac direct tenderness with positive Murphy's sign. The patient also had hiccups, which started 2 days before consultation. On laboratory examination, her white blood cell count was  $7.43 \times 10^9/L$  ( $3.04 \times 10^9/L$ - $8.54 \times 10^9/L$ ), with neutrophils at 69.7% (reference range: 39.6%-67.0%) and C-reactive protein at 10.3 mg/L (normal value, <2.6 mg/L). Her liver enzymes were also within normal limits.

Contrast-enhanced computed tomography demonstrated fat stranding of the peritoneum in the pelvic area. Moreover, computed tomography revealed partial hepatic capsule enhancement (Figure 1a), which was inconspicuous in the venous phase (Figure 1b) but apparent in the arterial phase on the right lobe of the liver, suggesting perihepatitis from Fitz-Hugh-Curtis syndrome (FHCS).

Polymerase chain reaction of the specimen from the cervical canal was positive for *Chlamydia trachomatis*. Thus, she was diagnosed with FHCS secondary to *Chlamydia trachomatis* infection and was treated with a single 1,000 mg dose of oral azithromycin.<sup>1</sup> Her clinical course was satisfactory following treatment.

FHCS is an inflammation of the hepatic capsule secondary to genital infections and pelvic peritonitis. *Chlamydia trachomatis* is considered the most common causative pathogen of this condition<sup>2,3</sup>, followed by *Neisseria gonorrhoeae*. Hepatic capsule inflammation due to FHCS irritates the diaphragm and results in hiccups, which can be triggered by repeated, involuntary spasms of the diaphragm. Moreover, patients with FHCS may have positive Murphy's sign.

The differential diagnoses for FHCS are perforated cholecystitis, hepatic abscess, and perihepatitis from other factors such as *Mycobacterium tuberculosis* and disseminated carcinoma, which can cause perihepatic contrast enhancement. Moreover, systemic lupus erythematosus, which is occasionally associated with hepatic capsule enhancement, is an important differential diagnosis of perihepatitis in young female patients (such as in this case)<sup>4</sup>, because

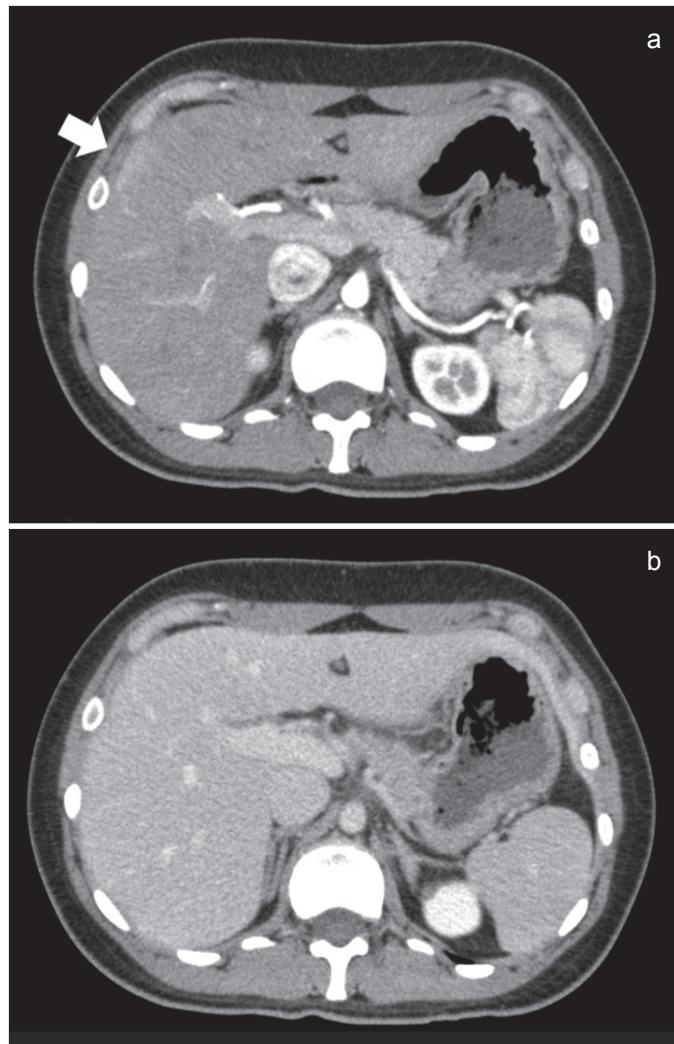


FIG. 1. Computed tomography scan demonstrating partial hepatic capsule enhancement in the arterial phase (a, arrow) and inconspicuous enhancement in the venous phase (b) in the right lobe of the liver.



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most FHCS and systemic lupus erythematosus cases occur more frequently in women than in men.<sup>5</sup> FHCS is also often associated with upper abdominal pain and right lower quadrant pain; thus, it should be also differentiated from appendicitis. However, appendicitis could complicate this condition.<sup>2</sup> A definitive diagnosis requires confirmation owing to the presence of hepatic capsule inflammation. Laparoscopy is the gold standard procedure to diagnose FHCS; however, the effect of the contrast on the arterial phase of the hepatic capsule on contrast-enhanced computed tomography, which is considered to reflect increased blood flow from inflammation<sup>2</sup>, may be a useful finding for diagnosing this condition noninvasively. Therefore, clinicians should pay attention to imaging studies when FHCS is suspected.

**Patient Consent for Publication:** Written informed consent was obtained from the patient.

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