

Retroperitoneal Abscess in Pediatrics: Case Report

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INTRODUCTION

Retroperitoneal abscesses are unusual phenomena with hidden and insidious presentations. Often, there is a lack of abdominal signs, leading to delays in drainage and high mortality rates. We present a case of retroperitoneal abscess in a 13-year-old male patient with no significant medical history. Clinically, he presented a two-week course of fever, headache, vomiting, anorexia, and abdominal pain. Abdominal ultrasound revealed a right subdiaphragmatic collection. Likewise, CT scan showed a perihepatic collection with the presence of gas. The patient was successfully treated with broad-spectrum antibiotics and percutaneous drainage.

CLINICAL CASE

The patient is a 13-year-old male with no reported history of chronic diseases, previous surgeries, traumatic events, infectious diseases, or hospitalizations. His vaccination schedule was up-to-date for his age.

He came to the pediatric emergency department accompanied by his mother, who reported a fifteen-day history of intense headache, fever, anorexia, vomiting, and abdominal pain and distension.

During the physical examination, the patient was hemodynamically stable, with vital signs within normal ranges and afebrile with a temperature of 36.5 °C. No adventitious sounds were heard upon chest examination. The abdomen appeared flat, with normal peristalsis, soft, depressible, and painful to deep palpation in the right anterior and lateral hypochondrium. Bilateral urethral points were negative, Giordano's sign was negative bilaterally, and no signs of peritoneal irritation were observed.

The laboratory results showed the following: hemoglobin 11.9 g/dL, hematocrit 36.6%, white blood cells 18,510 cells/ μ L, neutrophils 11,700 cells/ μ L, monocytes 2.05 cells/ μ L, glucose 85 mg/dL, urea 25.4 mg/dL, creatinine 0.5 mg/dL, total bilirubin 0.27 mg/dL, direct bilirubin 0.16 mg/dL, indirect bilirubin 0.11 mg/dL, ALT 70 U/L, AST 61 U/L, alkaline phosphatase 218 U/L, phosphorus 5.5 mg/dL, calcium 8.6 mg/dL, chloride 97 mmol/L, potassium 4.31 mmol/L, sodium 136 mmol/L, magnesium 2.44 mg/dL, lactate dehydrogenase 282 U/L. The general

urine examination showed negative leukocyte esterase, negative proteins, negative hemoglobin, 3-5 white blood cells per field, few epithelial cells, moderate bacteria, and scarce mucin filaments.

An abdominal ultrasound was performed, revealing a right subdiaphragmatic collection, probably in the Gleason capsule, with heterogeneous content and intraluminal gas. Its dimensions were 50x18x44 mm, with a volume of 21 cc (Figure 1 and 2).

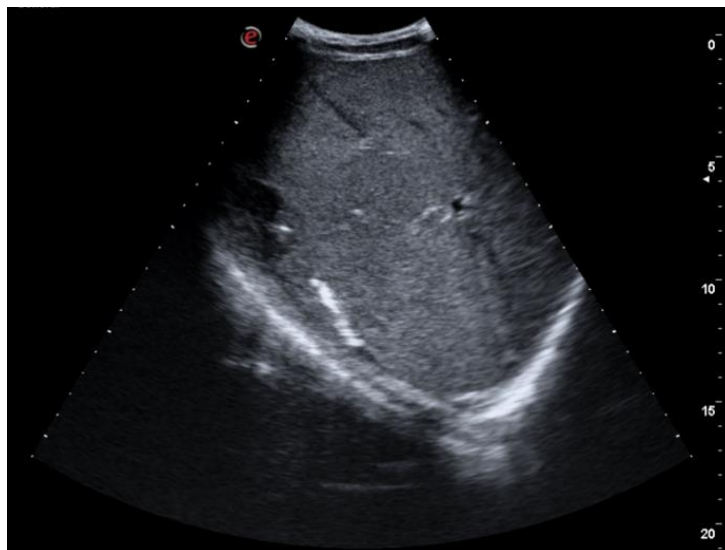


Figure 1: Abdominal Ultrasound with Perihepatic Collection.



Figure 2: Abdominal Ultrasound with Extended Scan from the Right Hypochondrium to the Iliac Crest, showing a hypoechoic collection with a linear echogenic image suggestive of gas at the posterior lateral hepatic level.

The patient was transferred to the hospitalization area under the care of the pediatric surgery service, where he experienced fever spikes of up to 39.2°C, along with persistent mild pain in the right lateral and posterior hypochondrium. No signs of peritoneal irritation were observed. A computed tomography (CT) scan of the abdomen was performed, revealing a perihepatic collection with gas extending along the paracolic gutter to the right iliac fossa (Figure 2).

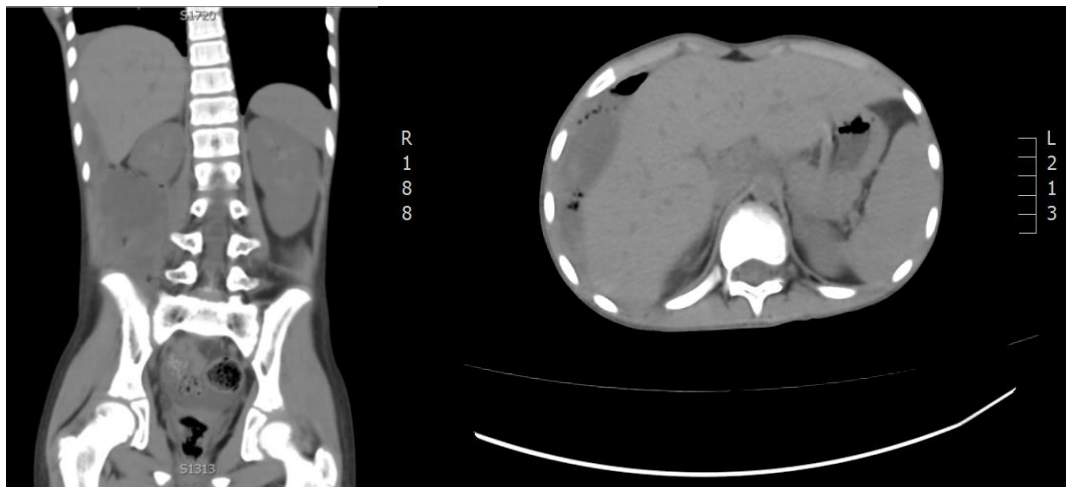


Figure 2: Abdominal CT scan showing a perihepatic collection with gas extending along the paracolic gutter.

Therefore, a dual antibiotic regimen was initiated with ceftriaxone (1 gram intravenously every 12 hours) and metronidazole (320 mg intravenously every 8 hours). Percutaneous drainage of the abscess was decided with prior ultrasound marking. Approximately 240 cc of purulent fluid was drained during the intraoperative procedure (Figure 3).



Figure 3: Percutaneous Drainage of the Abscess.

Additionally, a catheter was placed in the colostomy bag to allow continuous drainage in the hospitalization area. The total output over 10 days was 420 cc with a positive culture for *Escherichia coli* sensitive to all antibiotics, prompting the continuation of the same antimicrobial regimen (Figure 4).



Figure 4: Percutaneous catheter shown on the right flank, in the colostomy bag, with purulent drainage.

With low output through the catheter, it was removed, and the patient was discharged. Follow-up continued with regular outpatient appointments with the pediatric surgery department.

DISCUSSION

Retroperitoneal abscess in children is a relatively rare but serious condition. Retroperitoneal abscesses are uncommon in infants and children (1). They carry a high rate of morbidity and complications, including, among others, pneumonia that can lead to respiratory failure, recurrent abscesses, renal failure, heart disease, coloenteric fistula, and osteomyelitis. The most common complication is pneumonia/respiratory failure with an associated mortality of 80% (2). The reported incidence of retroperitoneal abscesses in the literature is higher in men aged 30 to 60, predominantly in males, with a very limited number of cases reported in pediatric populations (3).

Primary infection (the most common type) is due to hematogenous spread from a usually hidden source in the muscles and spine, as well as urinary infections, appendicitis, inflammatory bowel diseases, trauma, or previous surgical procedures (5). In relation to our patient, the primary source of the abscess could not be identified.

The clinical presentation of retroperitoneal abscess is nonspecific, insidious with pain and fever. Pain can be localized in the flank, groin, or back. Other symptoms include vague abdominal pain, nausea, general discomfort, chills, tachycardia, and weight loss. Generally, there is an absence of peritoneal signs that delays diagnosis (4,5). Diagnosis typically requires imaging studies. Initial abdominal plain X-rays may be performed to assess abdominal pain. Subsequently, ultrasound, useful for detecting intra-abdominal abscesses to minimize radiation in the pediatric population, and computed tomography, to confirm the presence of visceral and retroperitoneal abscesses, demonstrate anatomical details, rule out underlying pathology, and

guide treatment, can be performed (2,5,6). In our case, retroperitoneal pus accumulated in the perihepatic space and extended throughout the paracolic gutter to the right iliac fossa. It did not cause significant abdominal pain and showed no signs of peritoneal irritation, leading to a delayed surgical decision until imaging studies were obtained.

Surgical intervention should be carefully considered based on available images. Transperitoneal drainage should be avoided, if possible, as a series of 50 cases showed a failure rate of 67% (7). The most advisable approach is to treat retroperitoneal abscesses with percutaneous drainage and antibiotics. Open surgical drainage should be considered if percutaneous drainage is inadequate or in the case of large abscess cavities (8). Overall, treatment involves draining the retroperitoneal abscess along with the administration of broad-spectrum antibiotics (1). Abscesses can be drained through open surgery or percutaneous drainage under ultrasound or CT guidance (9).

Our patient was successfully treated with broad-spectrum antibiotics and percutaneous drainage.

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