Simultaneous occurrence of renal and splenic abscesses in a 10-year-old boy

Case Report

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Abstract

Background: Urinary tract infection (UTI) is common in children and has many complications, but simultaneous occurrence of renal abscess and splenic abscess is rare.

Case report: In this case report, a 10-year-old boy with right flank, abdominal pain and high-grade fever was referred to Pediatric Nephrology Ward at Amirkola Children's Hospital, northern Iran. In this patient abdominal ultrasonography revealed renal and splenic abscesses simultaneously. The patient was treated with kidney abscess drainage with the insertion of double-J (DJ) stent plus antibiotic therapy for about 4 weeks. An abdominal CT scan revealed complete cure and he was discharged with good condition.

Conclusions: Simultaneous occurrence of renal and splenic abscess should be considered in any patient accompanied with underline urinary tract obstruction.

Key Words: Renal, Abscess, Ultrasonography, Urinary Tract Infections.

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Introduction

Urinary tract infection (UTI) is one of the most common bacterial infections in children. There are two types of acute and long-time complications of UTI [1]. Renal abscess is a rare acute complication of UTI and usually can be caused by bacteremia in young infants [2]. Staphylococcus aureus is the most common organism in renal abscess, but after UTI especially with urological abnormality, gram-negative bacillus or enterococcus is the most common causative organism [3]. Signs and symptoms of renal abscess are not specific and the suspected renal abscess may develop after prolonged fever or failure to respond to antibiotics. Ultrasonography is performed on patient with suspected diagnosis of renal abscess but, computed tomography (CT) scan is usually needed to prove renal abscess [3, 4]. Ureteropelvic junction obstruction (UPJO) is stenosis or obstruction of urine flow from renal pelvic to ureter. In severe cases, the surgical repair is recommended for UPJO. Kidneys with UPJO are susceptible to infection and stones. Splenic abscess is a rare in children and renal abscess coexisting with splenic abscess is more rare [5]. Here we describe a 10-year-old boy with both renal and splenic abscesses.

Case Report:

A 10-year-old boy with abdominal pain and high-grade fever was referred to Pediatric Nephrology Ward at Amirkola Children's Hospital, northern Iran. He had abdominal pain around the umbilicus and right flank. Patient's position did not change the quality of pain. He had a history of hospitalization two weeks ago for Ureteropelvic junction obstruction (UPJO) repair. In the initial examination, the vital signs were as follows: Bp: 110/70 mmHg, RR: 23/min, T: 39c° , PR: 97 bpm.

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He had abdominal colicky pain. Initial lab tests were reported: WBC: 16700/µl, Hemoglobin: 10 g/dl, platelet: 521×103 /µl, PMN: 88%, lymph: 9%, ESR: 125 mm/h, CRP: 75 mg/dl, Urine analysis {WBC: many, RBC: 8-10}, Urine culture: Proteus. sp, Culture colony counts: 10^3 colony/ml, Na: 140 meq/L, K: 4 meq/L, BUN: 80, Cr: 0.9 mg/dl, BS: 88, ALT: 29 u/l, AST: 33 u/l, ALP-P: 62 u/l. Abdominal and pelvic ultrasonography indicated echogenic collections and debris with size of 74×67 mm in the upper lobe of the kidney and one abscess in the spleen. In right kidney, hydronephrosis was reported. In urine culture, Proteus was grown up to 25,000 CFU, which is susceptible to cefotaxime. At baseline, the patient was treated with cefotaxime, which was continued after urine culture and antibiotic susceptibility tests. The fever discontinued two days after admission, and the inflammatory markers (CRP) were decreased.

The second ultrasonography showed reduced size of the abscess in both kidney and spleen. Two weeks after admission, the patient complained again about sudden abdominal pain with vomiting. At this time no fever was detected. The ultrasonography clearly represented decreased size of the echogenicity in the spleen and kidney. After hydration, a double-J (DJ) stent was inserted into urinary tract to remove the obstruction of ureter with pus.

An abdominal CT scan revealed abscess formation in the right kidney and spleen (figure 1). We continued antibiotic therapy for about 4 weeks and at the end he was discharged with good general condition.

Figure 1. Abdominal CT scan of our patient, shows renal and splenic abscesses

Discussion

This case report presented a 10-year-old boy with both renal and splenic abscesses simultaneously. Renal abscess is a very rare infection disorder in children. It can mainly occur in children with or without predisposing factors. Clinical findings are fever, anorexia weight loss and back pain. Physical examination in most patients is normal as well as palpable mass and flank tenderness may be detected. However, a definitive diagnosis depends on ultrasound and CT scans [6].

A study was conducted on 2278 patients with UTI for three years, but proteus species were found only in 17% of cases [7]. Secondary renal abscess followed by surgical interventions is mainly due to the common causative microorganisms of UTI, while proteus is less common [8]. The urine culture of our patient was positive for Proteus mirabilis, which was interesting.

Most patients with renal abscess have nonspecific signs and symptoms, obscure discomfort and fever of unknown origin; hence, the diagnosis of a renal abscess maybe delayed up to two or three weeks.

The renal and splenic abscesses in the same side are rare and in our case, the splenic abscess was occurred in the opposite side of renal abscess.

Most patients have kidney stones with renal abscess whereas our case had no renal stone [9] but, suffered from UPJO.

To treat the renal abscess, the antibiotics were used for at least two or three weeks. Surgical intervention may be needed in urinary tract anomalies [10] while the splenic and renal abscesses were resolved with medical treatments in our patient who improved during four weeks through antibiotic therapy and drainage of pus.

In conclusion, renal abscess should be considered in children with UTI, and it may be accompanied with splenic abscess.

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