

CASE REPORT

PERINEPHRIC AND RENAL ABSCESES IN CHILDREN: A STUDY OF THREE CASES

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SUMMARY

Perinephric and renal abscesses are rare in childhood, but they must be remembered in the differential diagnosis of fever and abdominal or flank pain. This paper reports three cases whose solution was found after clinical and surgical treatment. The importance of ultrasound and computerized tomography (CT) in prompt diagnosis is highlighted in this work. The use of these methods along the improved antimicrobial therapy may result in decrease in mortality due to this pathology.

KEYWORDS: Renal abscess; Perinephric abscess

INTRODUCTION

Perirenal and renal abscesses are uncommon¹, yet potentially lethal diseases⁶. They may be associated with different predisposing conditions: obstructive or infectious urinary tract diseases, diabetes mellitus, intravenous use of illicit drugs, trauma, recent abdominal or urological surgery and immunodepression as in cancer or AIDS².

The symptoms are vague⁶ and the diagnosis can be prompt with new available methods^{4,5,8}. Three recent cases are reported in this paper, where it is given more attention to the most frequent symptoms, predisposing conditions, laboratory and radiology findings and the treatment applied to the patients.

CASE REPORTS

CASE 1: An 18-month-old female infant with high fever, abdominal pain was taken to hospital for treatment. Fifteen days before admission, she had urinary tract infection. The physical findings were fever, abdominal tenderness and mass in the left flank. Urinalysis was normal. The urine culture was negative. The white blood cell count was 29,500 mm⁻³ with a marked left shift. VHS was 86 mm. Serum creatinine level was 0.6 mg% and serum urea level was 17 mg%. Ultrasound scan and computerized tomography (CT) showed positive results for left-sided perinephritic abscess and ureteropelvic dilatation. Blood cultures were negative for bacteria.

The bacteriology of the abscess was positive for *S. aureus*. The girl was prescribed with Amikacin and Oxacillin during the three following

weeks and percutaneous abscess drainage was performed. The patient recovered and was discharged.

CASE 2: A 4-year-old boy was admitted to hospital with a history of fever and he was under treatment with cefalexin for urinary tract infection. He complained of abdominal pain. There were abdominal tenderness and debility. The urinalysis was normal and the urine culture was not performed because he was under antibiotic therapy. White blood cell count was 12,200 with a left shift. Serum creatinine level was 0.6 mg% and serum urea level was 13 mg%. An ultrasound scan detected left-sided perinephritic fluid, which was drained percutaneously. Culture of the fluid was positive for *S. aureus*. He was medicated with Ceftriaxone and Oxacillin for two weeks. Recovery was uneventful.

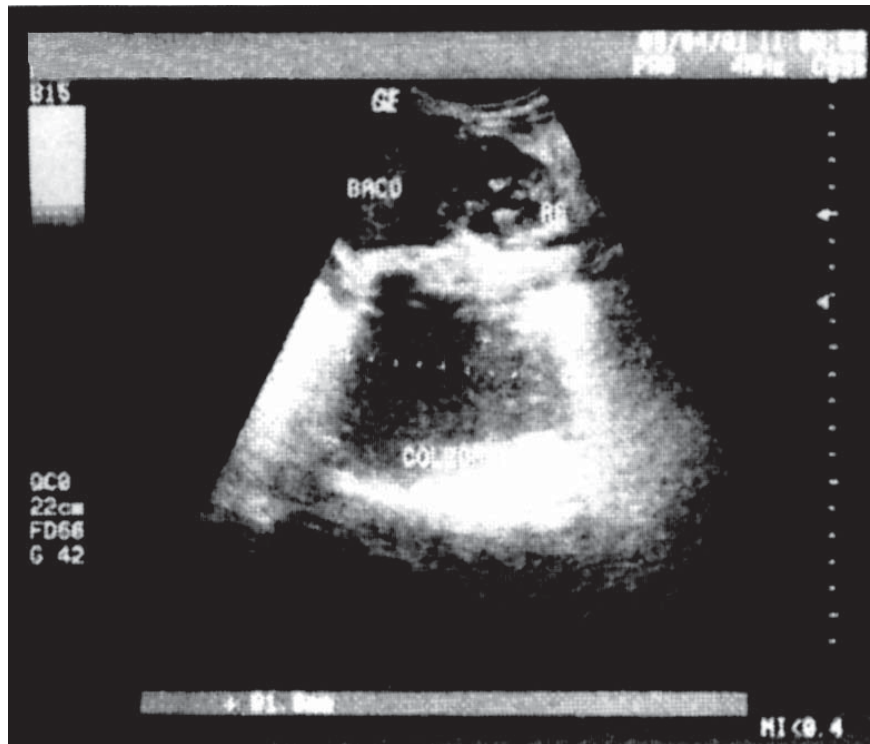
CASE 3: A 4-year-old female was hospitalized with abdominal complain and fever. Urinalysis was performed and its result was normal. White blood cell count was 18,100 mm⁻³ with a left shift. Serum creatinine level was 0.7 mg% and serum urea level was 19 mg%. Ultrasound scan and computerized tomography revealed right-sided renal abscess. She underwent open drainage and received Amikacin and Oxacillin for three weeks. Cultures of blood, urine and abscess were negative for bacteria. She responded positively to the therapy.

COMMENTS

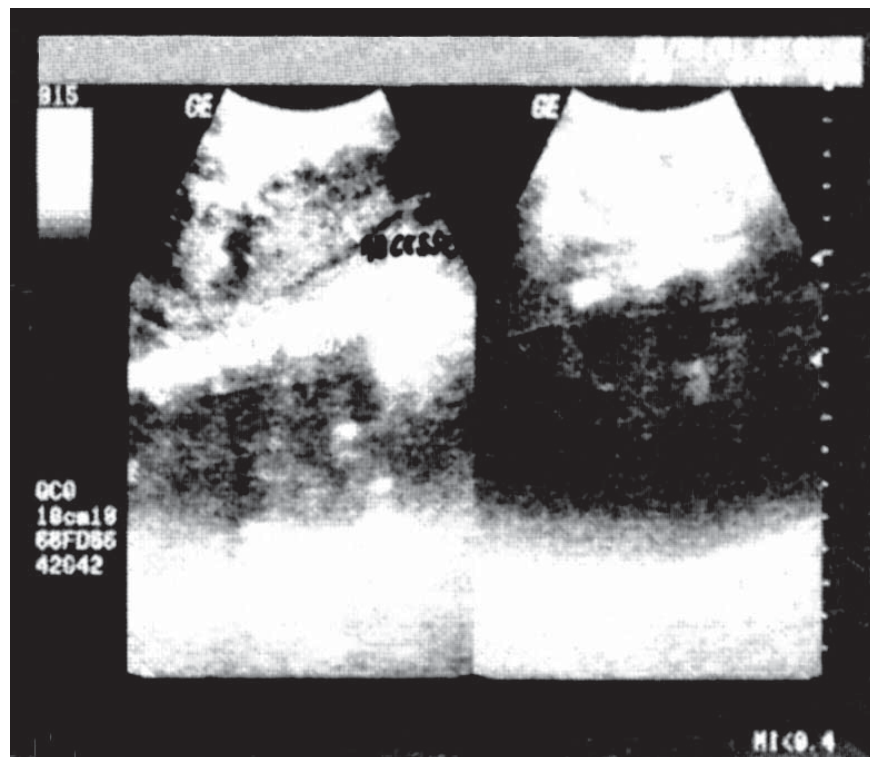
Despite of cases being uncommon we diagnosed two cases of perirenal abscesses and one of renal abscess during the months of April and May, 2001 in the Department of Pediatrics of the hospital where the treatments were performed.

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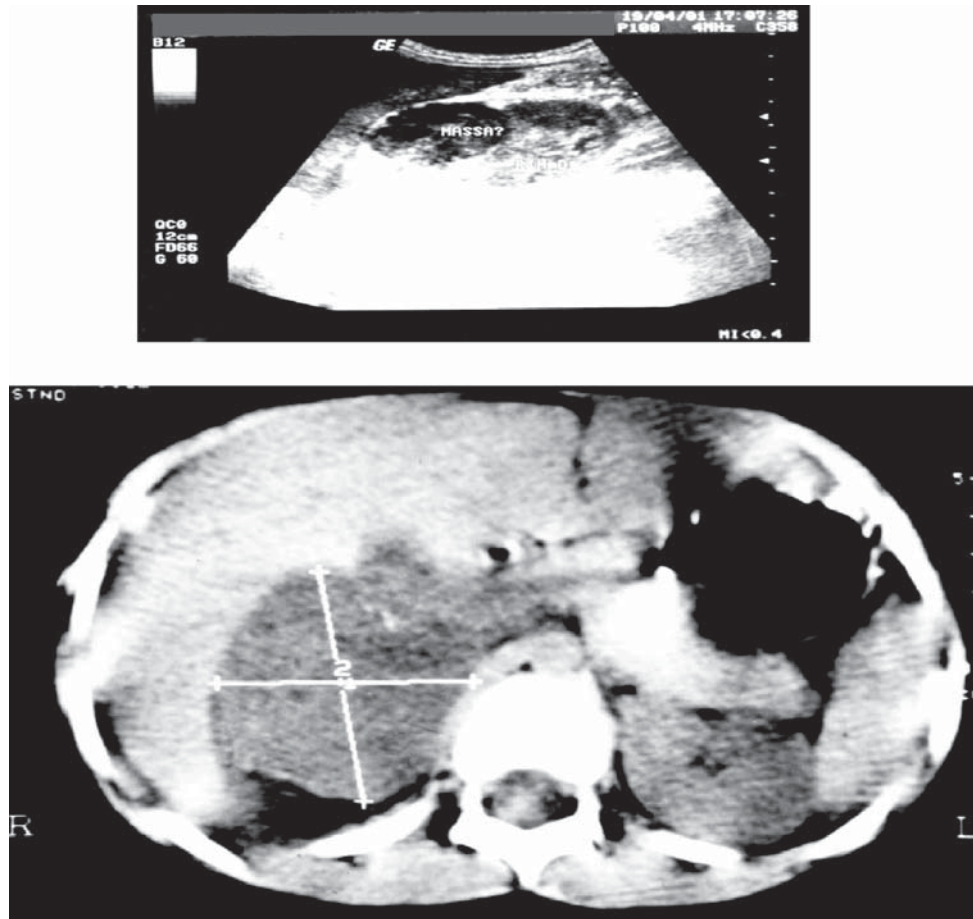
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Case 1 – Ultrasound positive for leftside perinephric abscess.



Case 2 – Ultrasound positive for leftside perinephric abscess.



Case 3 – Ultrasound and computerized tomography positive for right-sided renal abscess.

The first case had a history of urinary tract infection, 15 days before the admission while in the second case, this infection was being treated. In the third case, the causative condition was not detected. As reported in the literature fever, abdominal pain or mass were the complaints. In the two perirenal abscesses cases *S. aureus* was associated. In the cases, urinalyses were normal. Blood and urine cultures performed were negative. The urinalysis in perinephric and renal abscesses usually does not reveal any abnormalities unless the abscess communicates with the collecting system. It was detected in two cases of our study. Another reason would be the use of antibiotics before the analysis, like in the second case. Blood cultures also are generally negative⁵. Renal abscesses may be cortical and in these cases *S. aureus* are isolated and these are from hematogeneous spread from a primary focus of infection anywhere in the body⁴; or corticomedullary associated with underlying urinary tract obstruction and infection⁴. Enteric gram-negative aerobes bacilli are commonly responsible for them⁴. This fact justifies the empiric antimicrobial therapy with aminoglycoside and antistaphylococcal beta-lactamic. The etiology by anaerobes must be remembered when there is a perforated viscus³. It is necessary a proper method to isolate them. Chloramphenicol, clindamycin or metronidazole should be prescribed. Other potential pathogens are *Candida* and *Aspergillus*.

Perirenal abscesses are collections of suppurative material between the renal capsule and Gerota's fascia commonly resulting from rupture of intrarenal abscesses⁴. The etiologic agents are the same as in renal abscesses.

In case 1 and 2, despite of urinary-tract infections, Gram-negative organisms were not isolated and a probable reason was the use of broad spectrum antibiotics before drainage. The culture for anaerobes was not performed. Ultrasonography, CT and resonance magnetic imaging (MR imaging) have greatly improved the ability to diagnose this disease. CT is considered the diagnostic technique of choice as it identifies the abscess and defines its extension beyond the renal capsule and the surrounding anatomy, including extension into the psoas muscle. MR imaging and CT are equally efficacious although MR imaging may be advantageous for those patients who should not receive contrast agents caused by allergies or renal insufficiency⁴.

Ultra sounds and computerized tomography scans were positive for abscesses. Ultra sound was also used to guide the percutaneous drainage and in the follow-up care.

In three cases, the abscesses analysed were bigger than 5 cm and

they were treated with antibiotics and surgical drainage (Cases 1 and 2 by percutaneous drainage and Case 3 by open drainage). In smaller abscesses (< 3 cm) antibiotics alone must be used. We realized that the surgical treatment was fundamental for prompt recovery.

In summary, perirenal and renal abscesses should be included in the differential diagnosis of fever and abdominal pain or mass and they should be investigated by appropriate means.

RESUMO

Abcessos perinefrético e renal em crianças: um estudo de 3 casos

Abscessos perinefrético e renal são raros na infância, mas devem ser lembrados no diagnóstico diferencial de febre e dor abdominal ou no flanco. Apresentamos três casos que tiveram resolução após tratamento clínico e cirúrgico. A importância da ultrassonografia e da tomografia computadorizada em diagnósticos mais rápidos é enfatizada. Estes métodos e o tratamento antimicrobiano mais eficaz são responsáveis pelo declínio na mortalidade desta patologia nos dias atuais.

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