



Causative Organism of Infectious Renal Masses in Children in a Developing Country and Their Management

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Dear Editor-in-Chief

Infectious renal masses are rare among children. They are reported as isolated case reports (1-4) and their real incidence is still unknown. The diagnosis of the causative organisms and their management is still a challenge (5-6-7).

Charts of children treated for infectious renal masses between Jan 2000 and Dec 2017 at the Department of Pediatric Surgery of Hedi Chaker Hospital, Sfax, Tunisia and the Department of Urology of Habib Bourguiba Hospital, Sfax, Tunisia were reviewed. Inclusion criteria were the presence of a renal formation on radiology with a size of at least 3 cm and positive biology and / or histologic confirmation of the infectious etiology. Patients with insufficient data were excluded. Ethical consent was obtained from the local board.

During the study period 20 cases were enrolled (11 boys, 9 girls). The median age was 9,7 yr (range 3 to 18 yr). The renal masses corresponded to hydatid cyst (HC) in 6 cases, xanthogranulomatous pyelonephritis (XGP) in 7 cases, renal abscess in 3 cases, tuberculosis in 2 cases, amoebic cyst and mucormycosis respectively for the remaining 2 cases (Table 1). The main clinical symptoms were abdominal mass (50%) and abdominal pain (45%) followed by fever (40%) and

urinary tract infection (40%). US was performed in all cases and had lower specificity than CT scan. It suggested the diagnosis of HC in 4 cases, renal abscess in 3 cases, and XGP in 4 cases with a history of urolithiasis. For the 2 remaining patients with HC a CT scan was performed (Fig. 1).

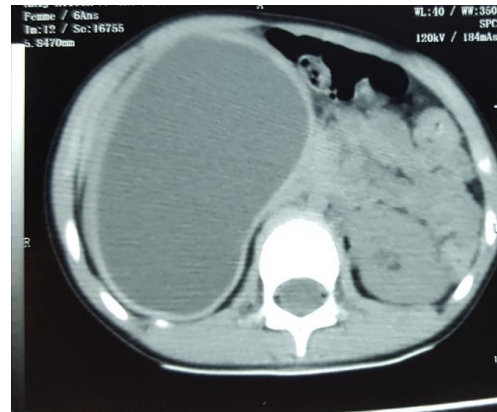


Fig. 1: CT scan showing large unilocular cystic lesion of the right kidney with well-defined wall

It was also performed in 3 cases with XGP who had US aspect of renal tumors. Renal tuberculosis was evoked in 2 cases based on medical history and clinical symptoms; CT scan was performed in the two cases. Renal mucormycosis



was diagnosed in a 9-yr-old girl who presented for sepsis. CT scan and US evoked an inflammatory pseudo tumor; the Anatomopathology confirmed the diagnosis. Amoebic cyst was isolated

in a 14-yr-old child who presented abdominal pain and fever; the diagnosis was confirmed by serology. Results of biology are summarized in Table 1.

Table 1: Summary table of etiology of infectious renal masses and management

<i>Variable</i>	<i>Number</i>	<i>Mean age or age</i>	<i>Biology/ histology (Positive Results)</i>	<i>Radiology</i>	<i>Treatment</i>	<i>Evolution</i>
HC	6	8	Hydatid serology (4)	US (6) CT (2)	Conservative surgery	Uncomplicated
XPN	7	8	Urinary analysis (4)+histology (7)	US (7) CT(4) IU(3)	Antibiotherapy + nephrectomy	Uncomplicated:6 Renal insufficiency:1
Renal abscess	3	3	Urinary analysis (3)	US (3) CT(3)	Antibiotherapy + drainage	Uncomplicated(1) Urinary tract infection (2)
Tuberculosis	2	17	IDR (2)+ Histology (2)	US (2) CT (1)	Nephrectomy	Uncomplicated
Mucormycosis	1	9	Histology (1)	US (1) CT(1)	Nephrectomy + antifungal treatment	Death
Amibiase	1	14	Serology (1)	US (1)	Antibiotherapy + drainage	Uncomplicated

US: ultrasound; CT: CT scan; IU: intravenous urography; HC:Hydatid cyst; XPN: Xanthogranulomatous Pyelonephritis

Sixteen patients underwent surgery (80%). Nephroureterectomy was performed in all cases with XGP, 2 cases with tuberculosis and one with mucormycosis. Renal HC were treated conservatively (punction-aspiration-injection-reaspiration and the resection of prodruming dome). Drainage and antibiotherapy was performed in 4 cases (3 renal abscess and one amoebic cyst). The evolution was uncomplicated in 16 cases. One patient with XGP developed renal insufficiency. Two patients had recurrent urinary infections. One patient with renal mycormucosis died after severe sepsis. The mean follow up period was 65 months.

This study demonstrated that the most common causes of infectious renal masses in our developing country are Hydatidosis and XGP. Conservative management should be considered as a first line for children. We emphasize on prevention from hydatid infestation by establishing prophylactic measures and prevention from XGP by early diagnosis of urolithiasis. It may avoid the use of invasive treatment.

Conflict of interest

The authors declare that there is no conflict of interests.

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