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Renal Teratoma in Children: A Case Report and Literature Review

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ABSTRACT
Renal teratomas are extremely rare pediatric tumors, composed of tissues from the three embryonic germ layers: ectoderm, mesoderm, and endoderm. Due to their radiological similarity to Wilms tumors, diagnosis is rarely made preoperatively and requires histopathological confirmation. We report a case of a renal teratoma in a 5-month-old infant treated at the pediatric surgery department of Rabat University Hospital. This article aims to describe the clinical presentation, diagnostic process, and therapeutic management of this rare tumor, supported by a review of the literature.
Keywords: Renal tumor; Teratoma; Pediatric surgery; Wilms tumor; Histopathology.

I. INTRODUCTION

Renal teratomas are among the rarest neoplasms affecting the kidneys in pediatric patients. These tumors contain mature or immature tissue derivatives from ectodermal, mesodermal, and endodermal origins. They are often misdiagnosed as Wilms tumors, which are the most common renal malignancies in children [1]. Preoperative diagnosis is challenging and definitive identification relies on histological examination [2].

II. CASE REPORT

A 5-month-old male infant was admitted to the pediatric surgery department for evaluation of an abdominal mass. Clinical examination revealed a palpable, firm mass in the left flank, without associated fever or hematuria. Ultrasound and abdominal CT scan showed a heterogeneous renal mass with cystic and calcified components, suggesting a nephroblastoma [3]. A total nephrectomy was performed. Histopathological examination revealed a mature teratoma composed of skin, neural tissue, muscle, and gastrointestinal epithelium [4]. No immature or malignant components were identified. The postoperative course was uneventful, and no adjuvant therapy was required.

III. DISCUSSION

Renal teratomas are extremely rare, with very few cases reported in the literature [1,5]. They can be classified as mature or immature depending on their histological components [6]. The main differential diagnosis is Wilms tumor, which accounts for more than 90% of renal tumors in children [7]. Radiological imaging often fails to distinguish between these entities [8]. Histopathology remains the gold standard for diagnosis [2]. Treatment is primarily surgical, with complete resection typically curative in mature teratomas [9]. The prognosis is excellent, and follow-up should include periodic imaging to detect recurrence [10].

IV. CONCLUSION

Renal teratomas, although extremely rare, should be considered in the differential diagnosis of renal masses in infants [5]. Accurate diagnosis relies on histopathological analysis [2,4]. Surgical excision remains the cornerstone of treatment, with favorable outcomes in the absence of immature or malignant components [9].

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Figures

Figure 1.Intraoperative view showing a large left renal mass (teratoma).

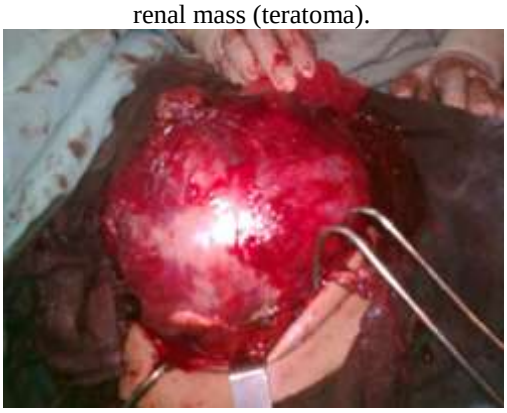

Figure 2. Gross specimen of the nephrectomy: a left renal mass measuring 16×14×8.5 cm and weighing 800g.

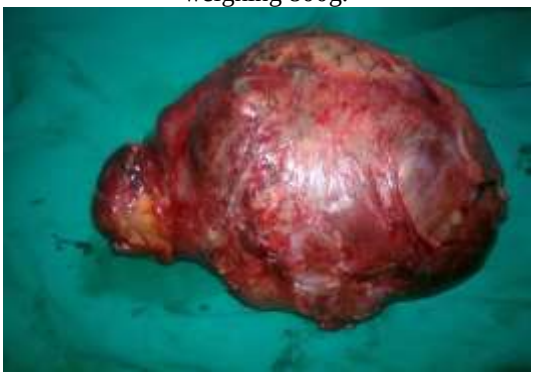

Figure 3. CT scan showing a large heterogeneous renal mass with cystic areas, crossing the midline.

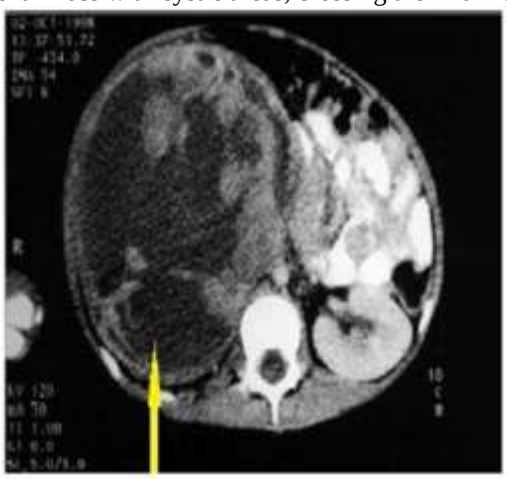

Figure 4. Histological section of intrarenal teratoma showing glandular formations lined by mucinous epithelium with many Goblet cells (H&E, x100).