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Primary Mature Teratoma Presenting as an Adrenal Tumor in a Child: Case Report

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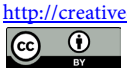

Abstract

Teratomas are germ cell tumors which are mainly gonadal in origin. Other common extra-gonadal sites are mediastinal, sacro-coccygeal and pineal regions. Adrenal teratomas are extremely rare and primary adrenal teratomas are even rarer. We reported a case of primary adrenal teratoma in a 5-year-old male child. Usually, they are asymptomatic and identified as an incidental finding. Imaging modalities such as USG, CT and MRI are useful in diagnosis. Though these tumors are mostly benign, malignant transformation may occur. Treatment includes surgical removal. We report a case of a 5-year-old boy who presented with abdominal pain. The results of his physical examinations were unremarkable. Serum and urine markers for a hormonally active tumor were negative. Computed Tomography (CT) scan and total spine MRI showed a voluminous mass of the heterogeneous left adrenal lodge. Post-operative pathologic examination revealed primary mature teratoma.

Subject Areas

Oncology, Pediatrics

Keywords

Teratoma, Adrenal, Child, Retroperitoneal

1. Introduction

With the increasing use of cross-sectional imaging, adrenal lesions are frequently

identified in routine practice and are seen in up to 5% of abdominal CT [1]. Teratomas usually occur in the ovaries and testes. However, a variety of locations, including anterior mediastinum, retroperitoneum, sacrococcygeal region, stomach, and intestine, have also been reported [2]. Adrenal teratomas are extremely rare, and their diagnosis relies on the findings from radiologic examinations. Early diagnosis and surgical resection are important for effective treatment. We report one case of a primary mature teratoma presenting as an adrenal tumor in a child and show clinical manifestation, therapy, and prognosis in our patient.

2. Case Report

This is a 5-year-old boy, from a consanguineous marriage, with no notable pathological history, admitted for intense, diffuse, isolated abdominal pain with no associated urinary or digestive signs evolving for 4 months. In whom the clinical examination finds a child in good general condition, there was no history of fever, weight loss, burning micturition, hematuria or any previous surgical intervention. The abdomen was soft, painless, with no palpable mass or hepatomegaly or splenomegaly. The articular examination showed dorsal spinal pain on palpation.

Computed Tomography (CT) scan was obtained which showed a voluminous mass of the heterogeneous left adrenal lodge with three components: fleshy, cystic and fatty. Containing calcifications, corresponding to 68 × 59 cm and extending over 82 cm, related to a teratoma which presents an endo-canal extension (**Figure 1**). All the baseline investigations were unremarkable. Alpha feto protein was 0.35 IU/ml (reference range < 5.0). In front of the dorsal rachialgia, a spinal cord and total spine MRI was performed showing a mostly cystic, multi-loculated left adrenal mass, equivalent to 6.4 × 5.8 × 5.6 cm, pushing the left kidney downwards, with a small endo-canal next to L1 - L2, without medullary compression (**Figure 2**). The patient was discussed in tumor board and was shifted to the department of pediatric surgery with the suspicion of left adrenal teratoma. Patient was optimized and surgery was planned. The tumor was surgically excised.

The pathological study showed a histological appearance of a mature teratoma, with no sign of malignancy. The post-operative period was uneventful and patient is doing well to date after a follow up of 2 years.

3. Discussion

Primary adrenal teratomas are rare neoplasms that often grow large enough to cause compressive symptoms and pain. Mature teratomas, also called cystic teratomas, are composed of 3 germ layers (ectoderm, mesoderm, and endoderm). The cyst, which is mainly composed of squamous epithelium, fat, and hair, is a benign neoplasm with malignant potential. [3] Adrenal teratomas have no specific clinical manifestations. They are often found on ultrasonography. However,

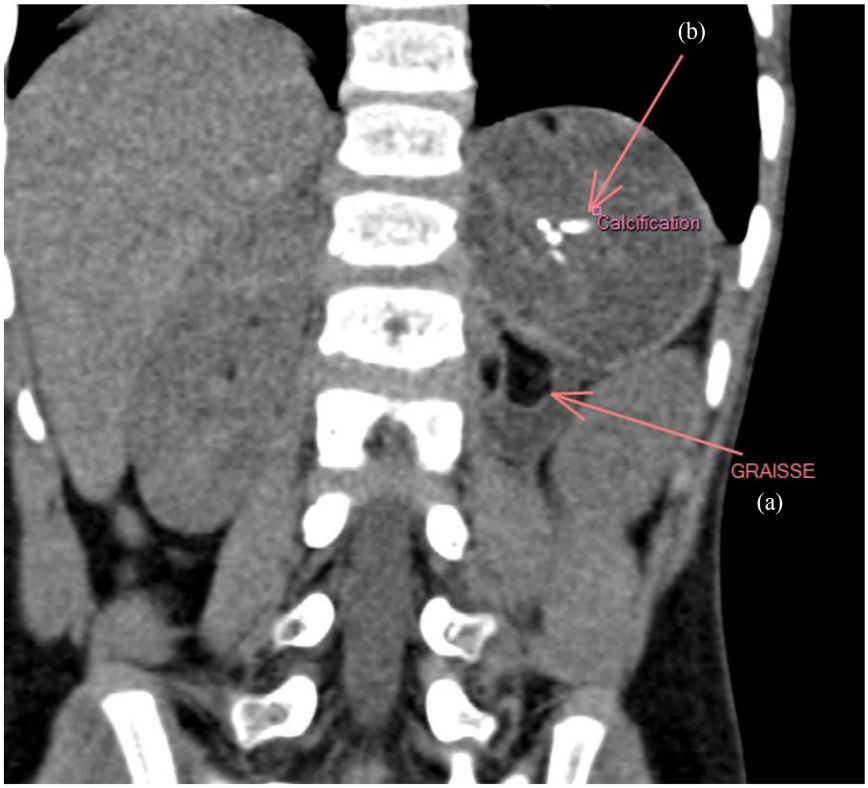

Figure 1. CT-scanned corneal section without injection of contrast product highlighting a fatty component (a) and calcifications within the left adrenal mass (b).

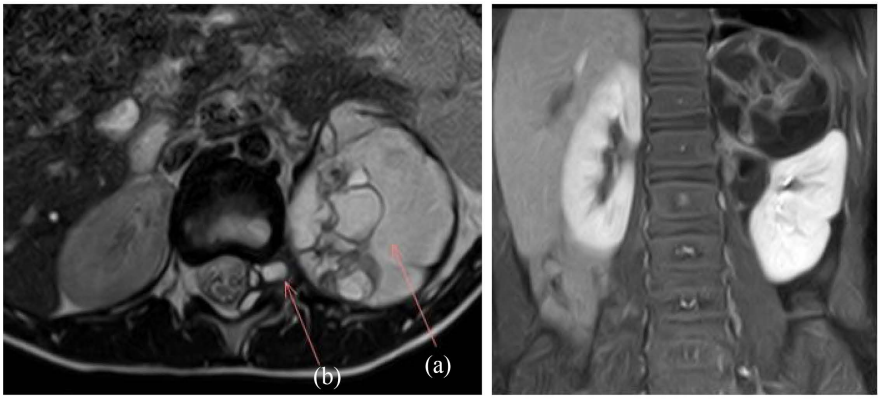

Figure 2. MRI images in axial T2 and coronal T1 sections with fat saturation and after injection of the guadoline contrast product, showing a solidocystic mass of the left adrenal lodge (a) extended intracanal (b).

abdominal distension, abdominal pain, low back pain, or, even, intestinal obstruction caused by compression of the neoplasm can occur in one half of patient [4].

The preoperative diagnosis of adrenal teratoma is difficult, as imaging characteristics vary based on the composition of the mass. Adrenal teratomas are frequently cystic and contain calcifications on CT or MRI. Common imaging characteristics include a well-circumscribed fatty tumor of heterogeneous density due

to the differentiation into multiple tissue types; however, distinguishing adrenal teratoma from the more common fatty adrenal myelolipoma remains challenging.

Due to a significant rate of malignancy in incidental adrenal masses in children (30.8%), it has been recommended that all pediatric intraadrenal masses be resected regardless of tumor size [5]. A long-term study [6] showed that complete surgical resection is associated with the best survival rates for primary retroperitoneal tumors.

A postoperative pathologic examination has often been required for a definitive diagnosis. Histologically, mature teratomas have generally been benign; however, they can undergo malignant transformation into nongerm cell malignancies, such as sarcoma and carcinoma [7].

4. Conclusion

To conclude, primary adrenal teratomas are very rare and should be considered in the differential diagnosis of retroperitoneal mass. Our patient presented with abdominal pain revealing an adrenal mass which related to a mature teratoma. The prognosis is excellent after complete resection; however, an adequate follow-up is advised in view of risk of malignant transformation.

Conflicts of Interest

The authors declare no conflicts of interest.

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