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Metanephric adenoma: A rare benign renal tumour

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Case Report

Metanephric adenoma: a rare benign renal tumour

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Abstract

Metanephric adenoma is a rare benign renal tumour. We are reporting one histologically proven such case in a 23 year old male from Afghanistan. He presented with severe right flank pain since 3 weeks. Nephrectomy was done and histopathology was consistent with the diagnosis of metanephric adenoma. This novel renal mass has been reported to have benign clinical course despite its symptomatic presentation and large tumour size. There is no distinguishing radiological feature with can differentiate it from malignant tumours.

So far, a uniformly benign clinical course has been associated with Metanephric adenoma, but given its relatively recent identification and rarity and the lack of clinical, radiographic, or cytologic means to establish a definite diagnosis, Metanephric adenoma remains primarily a pathologic diagnosis.

Introduction

Metanephric adenoma (MA) is a rare benign neoplasm of kidney that has characteristic histology, immunohoistochemistry and indolent clinico-biologic behaviour. The kidney develops from metanephric blastema. If remnants of this tissue remain within the renal parenchyma in postnatal life, they often develop into Wilms' tumour or rarely into metanephric adenoma (MA). Thus Wilms' tumour and MA are histogenetically related and MA is considered to be the benign counterpart of Wilms' tumour in adults.[1]

Case Report

Twenty three year old male from Afghanistan presented with severe right flank pain since 3 weeks. He had history of low-grade fever, nausea and vomiting. On examination there were no urinary symptoms or hematuria. No anemia or jaundice was seen. A palpable tender firm mass was noted in right lumbar area. Genitalia and digital rectal examination showed no abnormal findings. His haemoglobin was 11 gm% and creatinine was 1.0 mg/dl. Urinalysis showed no pyuria or haematuria. Ultrasound revealed a 10 cm complex heterogenous enhancing mass arising from the right kidney. CT scan showed 10x9x5 cm low attenuating well defined mass arising from upper-pole of right kidney with areas of calcification and peripheral contrast enhancement (Figure 1). No evidence of lymphadenopthy was present. Right radical nephrectomy was done and specimen was sent for histopathology. Specimen showed a large necrotic and haemorrhagic tumour measuring 10 x 8 cms. It was separated from the normal renal parenchyma by a thin capsule. Microscopically the tumour was largely necrotic with the viable areas having tubules lined by low cuboidal epithelium (Figure 2). The nuclei exhibited minimal pleomorphism and inconspicuous nucleoli. Cytoplasm was basophilic and scanty. Occasional mitoses and calcifications were seen. A diagnosis of metanephric adenoma was made.

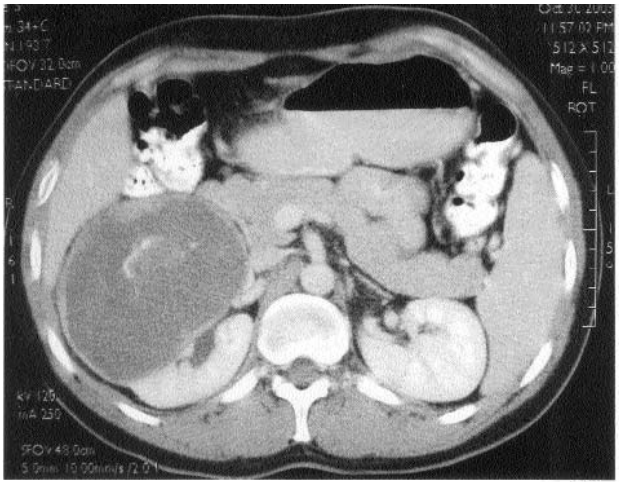

Figure 1.

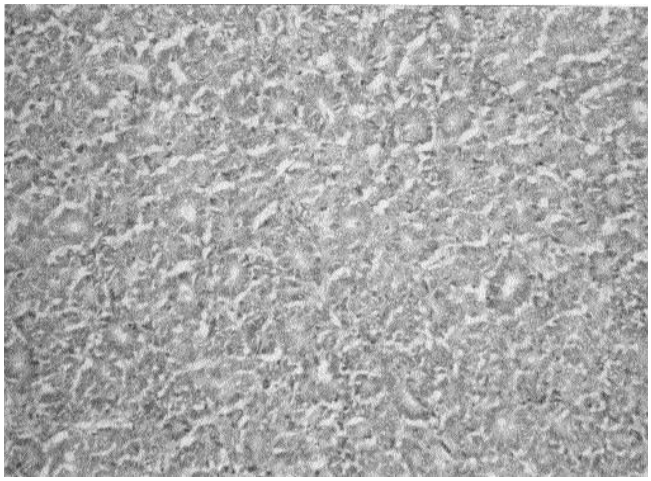

Figure 2.

Discussion

The largest series of this entity was published by Davis[2] and colleagues from The Armed Forces Institute of Pathology, who studied 50 cases diagnosed with the tumour.

Approximately 50% are incidental findings with others presenting with polycythemia, abdominal or flank pain, mass or hematuria. In the series of 50 patients reported by Davis et al, 20 had incidental discovery of the tumour during evaluation of other problems.[2] MA is occasionally responsible for paraneoplastic syndromes such as polycythemia and hypercalcemia. The largest tumour reported to date is 20x 19x15 cm in size. It occurs at all ages, most commonly in fifth and sixth decade. There is a 2:1 female preponderance. Grosssly it is solid in appearance however cystic MA has been described in a solitary kidney by Patankar et al.[4] Morphologically it is a highly cellular tumour composed of compact tubules and golmeruloid like structures which show lobulated papillary projections. Stroma ranges from inconspicuous to paucicellular edematous appearance. Psammomatous calcifications are common and may be numerous. J R Fielding et al[3] has found MA to be hyperechoic on ultrasound due to the presence of interfaces caused by numerous tubules that make up the tumour as well as psammomatous calcifications.[3]

Fielding has also described contrast enhancement of these tumours on CT scan and lower attenuation compared with the adjacent renal parenchyma as seen in our case.

References

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