Case 14320

Left paratesticular rhabdomyosarcoma in 15-year-old male.
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Section: Uroradiology & genital male imaging
Area of Interest: Genital / Reproductive system male
Procedure: Computer Applications-Detection, diagnosis
Imaging Technique: Ultrasound
Imaging Technique: Ultrasound-Colour Doppler
Special Focus: Neoplasia Case Type: Clinical Cases
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Patient: 15 years, male

Clinical History:

A 15-year-old male presented with a painless scrotal swelling over the past 2-3 months.

Imaging Findings:

Ultrasound of the scrotum revealed a solid, markedly heterogeneous, noncalcified mass involving the left epididymis body-tail region. Doppler ultrasound showed markedly increased vascularity of the mass.

Both testes and the right epididymis were normal.

Discussion:

The paratesticular region comprises of the spermatic cord, epididymis, vestigial remnants and tunica vaginalis [2]. The majority of paratesticular lesions are benign (cysts, fluid collections, inflammatory lesions or hernias). Malignant tumours of the epididymis are rare. These include sarcomas, metastases and adenocarcinomas. Secondary epididymal involvement with testicular lymphomas may also occur, though this is usually microscopic, in which case it is not discernible sonographically [1].

Paratesticular rhabdomyosarcoma represents an uncommon and highly aggressive embryonic tumour of infancy and childhood [1]. The tumour is intrascrotal and involves the spermatic cord, epididymis, or tunica vaginalis. The tumour has a bimodal age distribution, presenting in the first 3 years of life or in adolescence. Clinically, the patient presents with painless scrotal enlargement and sometimes, scrotal tumefaction. Metastatic involvement is seen in 40% cases. Lymph nodes, lungs and cortical bone are the commonest sites of distant metastases [3].

On ultrasound, paratesticular rhabdomyosarcoma presents as a large, solid, heterogeneous paratesticular mass; heterogeneity is usually attributable to haemorrhage and necrosis. Mass may encase or even invade the testes. Doppler ultrasound is notable for markedly increased vascularity of the mass relative to testis [1, 2]. On extrascrotal evaluation, para-aortic lymphadenopathy may be seen at the level of the renal veins. MR may be useful for early detection and both MR/CT have a role in disease staging, although definitive diagnosis is made on pathology [2].

Treatment modalities include surgery (radical orchiectomy and retroperitoneal lymph node dissection), and adjunctive chemo- and radiotherapy. Risk group stratification and treatment individualization is performed based on
extent and stage of disease. Outcomes most intimately correlate with the stage of disease, pathological subtype of the tumour, and patient’s age. The prognosis is excellent among younger patients (<10 years) with a local tumour and embryonal pathology [4].

Take home message: Given the highly aggressive nature of this entity, it is imperative for the radiologist to consider this among the differential diagnoses of all extratesticular solid tumours of the scrotum. The clinical teams should be expeditiously notified and further imaging/ management should be undertaken promptly.

**Differential Diagnosis List:** Left paratesticular/epididymal tumor-Embryonal rhabdomyosarcoma., Metastases., Inflammatory myofibroblastic tumor of the epididymis.

**Final Diagnosis:** Left paratesticular/epididymal tumor-Embryonal rhabdomyosarcoma.

**References:**


Description: Scrotal ultrasound demonstrates normal size and homogeneous echotexture of both testes. Origin: University of Rochester Medical Center, Rochester, NY, USA.
Figure 2

Description: Gray scale ultrasound of the left hemiscrotum in the region of the epididymal body reveals a large, markedly heterogeneous, non calcified mass involving the epididymal body. Origin: University of Rochester Medical Center, Rochester, NY, USA.
**Description:** Gray scale ultrasound of the left hemiscrotum in the region of the epididymal tail reveals extension of this mass through the epididymal tail. **Origin:** University of Rochester Medical Center, Rochester, NY, USA.
Description: Colour Doppler evaluation of the mass in the region of the left epididymal body/tail reveals intensely increased vascularity throughout the mass. Origin: University of Rochester Medical Center, Rochester, NY, USA.