

# Adenomatoid Tumor of Epididymis Associated with Tubular Ectasia of Rete Testis: Sonographic Evaluation

Suresh Vasant Phatak, Megha Manoj\*, Pratik Jayprakash Bhansali, Prasanthi Ghanta

Department of Radio-Diagnosis, Datta Meghe Institute of Medical Sciences, Wardha, Maharashtra, India

## Abstract

Paratesticular tumors are a relatively rare group of mesenchymal tumors, accounting for 7%–10% of all intrascrotal tumors. Adenomatoid tumor of the epididymis is the most common epididymal tumor. It is difficult to distinguish intra- versus paratesticular tumors and to know the nature of the lesion (benign versus malignant) on clinical examination since they may have similar presentation; therefore, ultrasound examination of these lesions is required to demonstrate its extratesticular location and also to suggest its benign nature. Elastography can further help in characterizing the lesion by evaluating the stiffness of the tumor. Here, we present a case of adenomatoid tumor of the left epididymis with tubular ectasia of the rete testis.

**Keywords:** Adenomatoid tumor of the epididymis, elastography, paratesticular tumor, ultrasound

## INTRODUCTION

Paratesticular tumors are a rare group of mesenchymal tumors accounting for 7%–10% of all intrascrotal tumors.<sup>[1]</sup> They include a wide variety of lesions that range from benign and malignant tumors of the spermatic cord, epididymis, and tunica vaginalis to tumors of vestigial remnants. Adenomatoid tumor of the epididymis, the most common epididymal tumor, constitutes about 30% of all paratesticular tumors.<sup>[2]</sup> The tissue of origin of these tumors is controversial; however, it is recently accepted to be mesothelial in origin. Although the epididymis is the most common site of origin, they may also occur in the testis, tunica vaginalis, and spermatic cord. They are mostly present on the left side with a predilection for the lower pole of the epididymis.

## CASE REPORT

A 41-year-old male presented with the complaints of a painless swelling in the left scrotum that was insidious in onset and gradually increasing in size for 2 years. There was no history of antecedent trauma or fever. On local examination, the swelling was firm in consistency, measuring approximately 4 cm × 4 cm in size. The left testis was palpable separately

from the lesion. There were no associated local inflammatory signs or skin changes.

The equipment used for the ultrasound examination was: Hitachi Aloka Arietta 70 with elastography modules. On ultrasound examination, there was a well-defined oval-to-round hyperechoic lesion with tiny calcification in the head of the left epididymis, measuring approximately 3.2 cm × 2.8 cm in size [Figure 1]. The lesion showed minimal vascularity on color Doppler [Figure 2]. On sonoelastography, the lesion showed predominantly blue color, indicating the high stiffness/low elasticity of the lesion with a strain ratio of 10.33 depicting a hard lesion [Figure 3]. An incidental finding of dilated tubules in the mediastinum testis was also noted, suggesting tubular ectasia of the rete testis of the left testis [Figure 4]. The right testis and epididymis were normal. Based on the ultrasound features, a provisional radiological diagnosis of adenomatoid tumor of the left epididymis was arrived at.

The patient subsequently underwent open surgical exploration of the left scrotal sac. An epididymal swelling was identified in

**Address for correspondence:** Dr. Megha Manoj,

Department of Radio-Diagnosis, Datta Meghe Institute of Medical Sciences, Sawangi (Meghe), Wardha - 442 001, Maharashtra, India.  
E-mail: meghamanoj17@gmail.com

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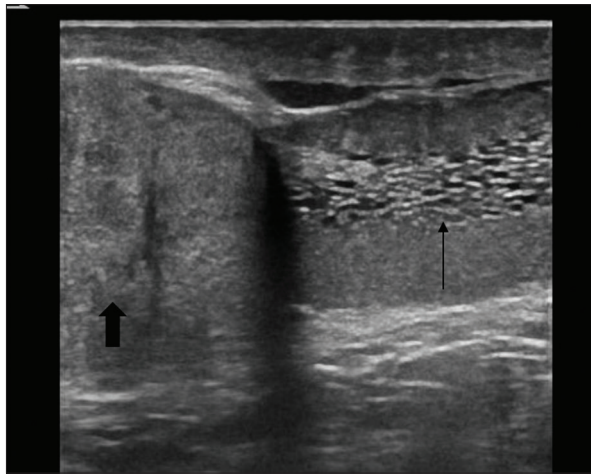
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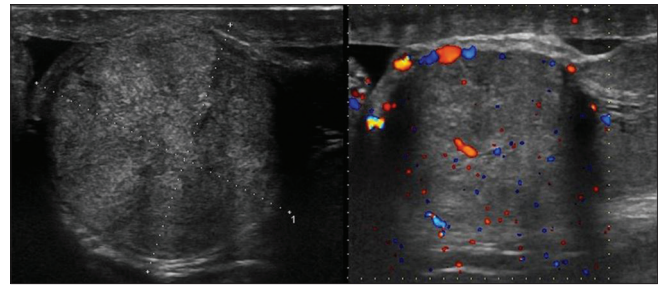
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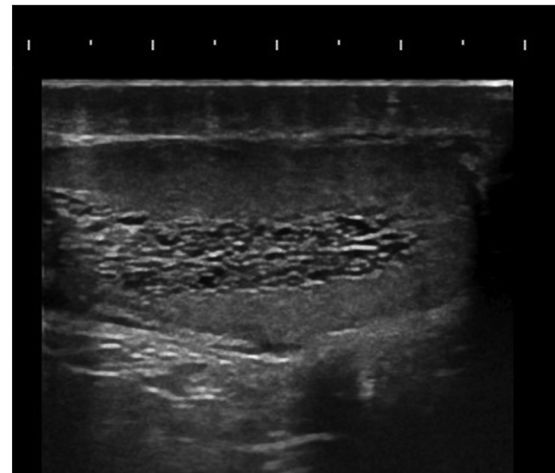
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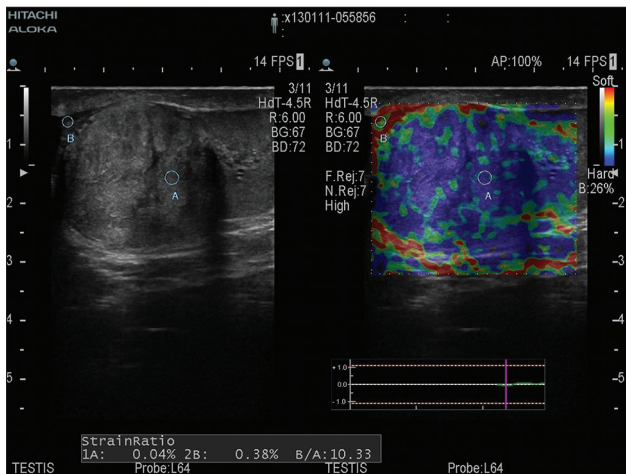
**Figure 1:** Grayscale US image shows a well-defined, round hyperechoic epididymal lesion superior to the upper pole of the left testis (Solid black arrow). Multiple dilated tubular structures are seen in the mediastinum testis of the left testis, suggesting tubular ectasia of the rete testis (Black arrow)



**Figure 2:** Grayscale US and color Doppler images show a well-defined, round hyperechoic epididymal lesion superior to the upper pole of the left testis (Solid black arrow) showing minimal vascularity on color Doppler



**Figure 4:** Grayscale US image of the left testis shows multiple dilated tubular structures in the mediastinum of the left testis, suggesting tubular ectasia of the rete testis (Black arrow)



**Figure 3:** Grayscale US and elastography images show a well-defined, round hyperechoic epididymal lesion superior to the upper pole of the left testis showing predominantly blue, with a strain ratio of 10.33, indicating the hard nature of the lesion

the upper pole of the left testis [Figure 5]. Complete excision of the swelling was done after an intraoperative frozen section examination of the swelling showed adenomatoid tumor of the epididymis. The final histopathological report of the excised tumor was also suggested adenomatoid tumor of the left epididymis.

Postoperative period was uneventful, and the patient was discharged on postoperative day 3 with instructions and advice to follow-up. There were satisfactory wound healing and no postoperative complications at follow-up.

## DISCUSSION

Adenomatoid tumor is the most common paratesticular tumor of the epididymis. Although it can occur at any age, it is most commonly seen in third or fourth decade. Guo *et al.* reported a case of adenomatoid tumor from tunica albuginea in a

12-year-old boy.<sup>[3]</sup> Clinically, it usually presents as a painless, slow-growing swelling in the scrotal sac. Skinnider and Young, reported the two cases of the epididymal adenomatoid tumor with acute scrotal pain at presentation which was unusual. The tumor in these cases was found to have extensive necrosis due to torsion.<sup>[4]</sup> These tumors are usually small measuring <2 cm in size, but they can occasionally reach up to 5 cm.<sup>[5]</sup>

Ultrasonography is the radiological investigation of choice for the evaluation of scrotal masses. On ultrasound, it may appear as a well-defined, oval-to-round extratesticular mass with variable echogenicity (most commonly hyperechoic to the epididymis) or it may appear cystic. Isoechoic nature of the lesion was found to be more in favor of a benign pathology; therefore, intraoperative frozen sections are warranted before proceeding with radical orchidectomy.<sup>[6,7]</sup> Contrast-enhanced ultrasound and sonoelastography can be performed additionally to evaluate the tissue characteristics before surgery. Although adenomatoid tumors of the epididymis are benign lesions, they can sometimes mimic malignant lesions on elastography.<sup>[8]</sup> MRI may also be used to confirm the extratesticular nature of the lesion. The imaging appearance of adenomatoid tumor is nonspecific; therefore, histopathological examination with immunohistochemistry is the gold standard for the diagnosis.



**Figure 5:** Intraoperative image of the lesion above the upper pole of the left testis (Black arrow)

On gross examination, they appear as grayish white, round masses with smooth surfaces, and have a firm consistency. Histologically, these tumors are characterized by irregular tubules lined by cuboidal epithelial cells. These cells may have moderate-to-abundant eosinophilic cytoplasm with multiple vacuoles [Figure 6]. On immunohistochemistry, these tumors may show expression of vimentin, cytokeratin AE1/AE3, and epithelial membrane antigen. These markers strongly suggest a mesothelial origin of the tumors.<sup>[9]</sup>

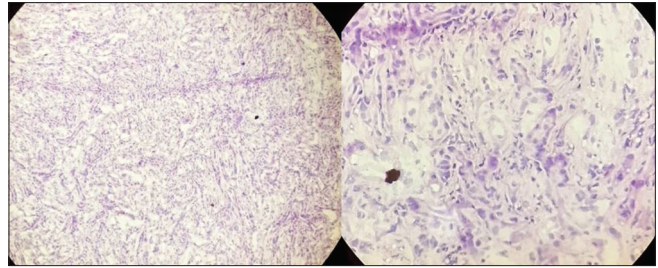
The benign nature of the lesion allows complete local excision with clean margins; follow-up and further investigations are generally not warranted.

## CONCLUSION

Adenomatoid tumors of the epididymis are relatively rare, benign type of paratesticular tumors which may clinically present like malignant testicular tumors. Ultrasound and elastography of these lesions can reveal its extratesticular location and also suggest a benign nature of the lesion. These radiological features thus help in planning intraoperative frozen section examination of the tumor and avoiding unnecessary orchiectomy.

## Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form, the patient has given his consent for his images and other clinical information to be



**Figure 6:** Section stained with hematoxylin and eosin, viewed at low power shows solid nests and dilated tubules, mesothelial cells, mild atypia, and eosinophilic vacuolated cytoplasm

reported in the journal. The patient understands that name and initials will not be published and due efforts will be made to conceal identity, but anonymity cannot be guaranteed.

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## Conflicts of interest

There are no conflicts of interest.

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