



Right-Sided Extra-Testicular Mass Coexisting with Right Sided Hydrocele

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Abstract

Context: An extra-testicular mass coexisting with a hydrocele presents a diagnostic challenge as the hydrocele may obscure clinical examination findings. This overlap can hinder detection of the mass and complicate radiological interpretation, making diagnostic imaging crucial for evaluation and management.

Methods: Clinical and radiological data were obtained from the case records of a 60-year-old male presenting with right-sided scrotal swelling. The patient underwent physical examination and diagnostic imaging, including Doppler ultrasound. Imaging findings were reviewed to assess the characteristics of the mass and its effect on adjacent scrotal structures.

Results: Doppler ultrasound revealed a well-defined, heterogeneous right-sided extra-testicular mass at the lower pole of the right testis, coexisting with a moderate hydrocele. The hydrocele obscured accurate palpation of the underlying lesion. The mass displaced the testis anteriorly and exerted pressure on the epididymis, but vascular flow was preserved in both testes and epididymis. No internal vascularity was detected within the lesion. Based on these findings, the patient underwent surgical excision of the mass and hydrocele repair, which provided both diagnostic clarification and definitive treatment.

Conclusion: This case underscores the diagnostic difficulties posed by hydrocele in identifying coexisting extra-testicular masses. Doppler ultrasound remains indispensable in differentiating benign from malignant scrotal lesions when clinical evaluation is inconclusive. Surgical exploration not only establishes a definitive diagnosis but also serves as a therapeutic intervention. Early recognition of this diagnostic challenge can prevent delays in appropriate management.

Keywords: Extra-testicular tumor; Hydrocele; Scrotal ultrasonography; Adenomatoid tumor; Case report.

Introduction

Scrotal swellings are a common presentation in urological and general practice, particularly among elderly males. While most extra-testicular masses are benign—commonly lipomas, adenomatoid tumors, and epididymal cysts—they still pose a diagnostic challenge because their clinical and radiological features may overlap with malignant lesions¹⁻³. Hydroceles, defined as abnormal fluid collections within

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the tunica vaginalis, are typically benign but can obscure underlying pathology, delaying accurate diagnosis.

The coexistence of an extra-testicular mass with a hydrocele is rare and sparsely reported in the literature, making recognition and management particularly important. The presence of hydrocele

complicates both physical examination and imaging interpretation, as fluid may mask the size, consistency, and anatomical relationships of the mass. In such cases, ultrasound with Doppler interrogation remains the gold standard, offering high sensitivity in differentiating intra- from extra-testicular lesions and in assessing vascularity⁴. However, a notable discordance exists between radiological impressions and final histopathological outcomes, with some studies reporting misclassification rates ranging from 10–20% for extra-testicular masses^{5,6}. This highlights the importance of surgical excision for both diagnostic confirmation and therapeutic management, even when imaging suggests a benign lesion.

A further diagnostic and management challenge lies in the choice of surgical approach. While benign-appearing lesions may be approached scrotally, an inguinal approach is often recommended when malignancy cannot be confidently excluded, as it allows en bloc resection and prevents potential tumor spillage. This case of a 60-year-old male with a right-sided extra-testicular mass coexisting with a hydrocele underscores these diagnostic dilemmas and highlights the role of imaging, histopathology, and surgical decision-making in ensuring optimal patient outcomes.

Case Report

A 60-year-old male presented with a history of right scrotal swelling and discomfort of approximately six months' duration. The swelling had been gradually progressive, associated with intermittent dull pain but without fever, trauma, urinary tract symptoms, or weight loss. His past medical and surgical history was unremarkable, and there was no family history of testicular or scrotal tumors.

On physical examination, the right hemiscrotum was enlarged, fluctuant, and transilluminant. The right testis was difficult to palpate separately from the mass, raising concern for a possible underlying lesion concealed by the hydrocele. No inguinal lymphadenopathy, overlying skin changes, or systemic stigmata of malignancy were identified. Although the absence of red flag features favored a benign etiology, the inability to clinically delineate the testis from the swelling left the possibility of malignancy open.

Scrotal Doppler ultrasound demonstrated normally

sized testes with preserved echo patterns and vascular flow bilaterally. At the lower pole of the right testis, a well-defined, heterogeneous extra-testicular mass measuring 20.9 × 24.3 mm was identified. The lesion displaced the testis anteriorly and compressed the epididymis, which appeared swollen but retained vascular flow. Importantly, no internal vascularity was detected within the mass. A moderate right hydrocele (≈14 cm³) was also noted, but there was no varicocele or scrotal wall abnormality.

Given the inconclusive clinical findings and the discordance risk between radiological and histological diagnoses of extra-testicular masses—which has been reported to be as high as 10–20%—surgical excision was pursued for both diagnostic clarification and symptomatic relief. Scrotal exploration was performed, revealing a

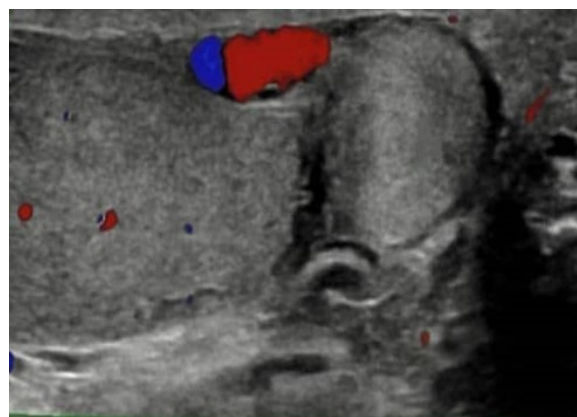


Fig 1: Doppler ultrasound image of the right extra testicular mass showing flow in the right testis but no flow in the extra testicular mass (courtesy of Alpha Clinics)



Fig 2: Ultrasound image showing the fluid accumulated in the right scrotal sac.

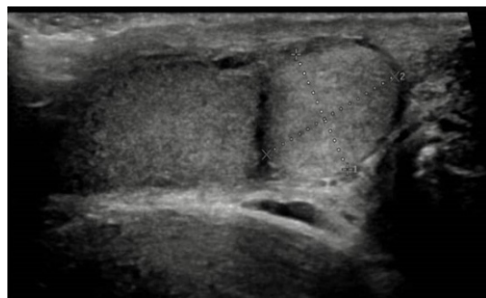


Fig 3: A gray scale ultrasound image of the right extra testicular mass and the testis

discrete, encapsulated mass adherent to the epididymal tail and displacing the testis. The lesion was excised in toto, and hydrocele repair was undertaken. The ipsilateral testis and epididymis were preserved.

Histopathology confirmed the diagnosis of a benign epididymal tumor, most consistent with an adenomatoid tumor. Postoperative recovery was uneventful, and a follow-up Doppler ultrasound two weeks later showed normal bilateral testicular architecture and vascularity, with no residual or recurrent mass. The patient remained asymptomatic at follow-up.

Although adenomatoid tumors represent the most frequently encountered benign extra-testicular neoplasm, the peculiarity of this case lies in its coexistence with a sizeable hydrocele, which masked clinical findings and complicated radiological assessment. In our practice, intra-scrotal swellings are relatively common, but extra-testicular tumors constitute a small minority. This case therefore illustrates the need for a high index of suspicion, emphasizes the limitations of imaging in distinguishing benign from malignant lesions, and highlights the role of timely surgical intervention in both diagnosis and management.

Discussion

An extra-testicular mass coexisting with a hydrocele presents a diagnostically challenging scenario in urological practice, as the hydrocele may obscure palpation of the testes and reduce the sensitivity of physical examination¹. Most extra-testicular lesions are benign, with adenomatoid tumors and lipomas being the most frequently reported^{2,3}. Adenomatoid tumors, benign mesothelial neoplasms typically arising from the

epididymis, may mimic malignant lesions when associated with hydroceles that distort local anatomy⁶. Similarly, lipomas of the spermatic cord can be mistaken for inguinal hernias or malignant tumors, particularly when clinical examination is limited by fluid collections³.

Ultrasonography remains the first-line imaging modality for scrotal pathology and is indispensable in differentiating intra- from extra-testicular masses^{2,7}. Features suggestive of benignity include well-circumscribed margins, homogeneity, and absent internal vascularity, while malignant lesions are often irregular, heterogeneous, and vascularized^{7,8}. Bhatt et al.⁸ further highlighted that extra-testicular lesions without internal vascularity but with preserved testicular perfusion are strongly associated with benign outcomes, findings that were consistent with our patient's scan. Thus, while ultrasonography is essential in the initial evaluation of all scrotal swellings, its limitations in reliably excluding malignancy underscore the importance of surgical excision when diagnostic doubt remains.

In our case, the hydrocele masked clinical detection of the mass and created uncertainty regarding its nature. Although imaging localized and characterized the lesion, it could not definitively exclude malignancy. This diagnostic uncertainty was ultimately resolved through surgical exploration and excision, which confirmed a benign adenomatoid tumor and simultaneously provided therapeutic relief. The surgical approach via scrotal exploration was selected, as intraoperative findings suggested a localized lesion amenable to excision without compromising testicular integrity.

Few reports describe the coexistence of adenomatoid tumors with hydroceles, and in most of these cases the diagnosis was only established postoperatively. Our case therefore adds to the limited literature by illustrating how hydrocele can mask underlying extra-testicular pathology and emphasizes the importance of considering such coexistence during evaluation.

Conclusion

This case highlights two important lessons: first, hydroceles may conceal extra-testicular pathology and complicate both physical and radiological evaluation; and second, while Doppler ultrasound provides valuable diagnostic guidance,

histopathology remains the gold standard in confirming benign versus malignant lesions. In this context, “early diagnosis” refers not only to the timely use of imaging once symptoms are reported but also to avoiding delays in surgical exploration when uncertainty persists. For elderly patients with long-standing scrotal swellings, prompt recognition of these diagnostic challenges and appropriate operative intervention are key to optimizing outcomes.

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