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ULTRASOUND AND MAGNETIC RESONANCE IMAGING FEATURES OF ECCRINE SPIRADENOMA OF THE SCROTUM

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ABSTRACT

Eccrine spiradenoma is a rare benign dermal tumor which is usually diagnosed after excision by histopathological results. A few case reports described imaging by ultrasound only. We describe additional magnetic resonance imaging features of scrotal eccrine spiradenoma by different sequences. We report the case of a 67- year- old man presented with a mildly painful intrascrotal swelling that had been increasing in size. The lesion was evaluated with ultrasound and magnetic resonance imaging, and the diagnosis of eccrine spiradenoma was confirmed by histopathology. The patient underwent surgical removal of the lesion. The patient recovered well and was followed up for 12 months. Scrotal eccrine spiradenoma is a rare tumor and little is known about its imaging features. The combination of ultrasound and magnetic resonance imaging features may help radiologists to strongly suspect the diagnosis before histopathological confirmation.

KEYWORDS

Eccrine spiradenoma, ultrasound, magnetic resonance imaging

LEARNING POINTS

- Scrotal eccrine spiradenoma is a rare tumor and little is known about its imaging features.
- The combination of ultrasound and magnetic resonance imaging features may help radiologists to strongly suspect its diagnosis before histopathological confirmation.

BACKGROUND

Eccrine spiradenoma (ES) is a rare benign tumor that was first described in 1934[1]. It is considered a dermal tumor that arises from the eccrine sweat glands. The tumor shows indistinct features on gross pathology with difficult clinical assessment mandating pathological correlation for accurate diagnosis[2-5]. We report ultrasound and magnetic resonance imaging (MRI) features of a scrotal ES.

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CASE PRESENTATION

A 67-year old man presented with a painless right intrascrotal swelling increasing in size for the last 3 years. He originally presented to the urology clinic for follow up of prostatic symptoms. On examination the patient had an extra-testicular slightly tender large soft lesion. The patient had no family history of similar lesions or history of significant trauma. Ultrasound examination was performed with a 5- to 12-MHz linear probe. Longitudinal and short axis scans with color Doppler images were obtained and showed a right hemiscrotum ovoid hypoechoic well-defined subcutaneous lesion. It measured 4.5 × 3.5 cm with a regular smooth 2.8 mm capsule with a single internal irregular septum transecting it and ending deeply and a thickened posterior ridge-like part *(Fig. 1)*. The capsule contained thick, echogenic fluid with posterior acoustic enchantment. The testis and epididymis bilaterally were normal with no evidence of varicocele. MRI was preformed *(Fig. 2)* with T1WI pre-contrast sagittal and axial views, T2WI fat saturated and non-fat saturated images in sagittal and axial views, T1WI post-contrast (gadolinium, gadopentetate dimeglumine) scans diffusion weighted low and high b-values and apparent diffusion coefficient maps. It showed a cystic lesion (slightly hyperintense on T1WI and hyperintense on T2WI) with well-circumscribed non-enhancing margins and enhancing internal papillary projections in its lower part with an enhancing internal septum coinciding with ultrasound findings. It showed no drop off on fat suppression images or on clinical shift images. No diffusion restriction was noted.

The lesion was excised and sent for histopathological examination. The specimen consisted of a single piece of gray, tan intact cyst, weighing 31.8 grams and measuring 5 × 4.8 × 3 cm, and covered by part of skin measuring 2.8 × 1 cm. The outer surface was smooth, glistening and grayish/brownish with no other structures like the spermatic cord or epididymis. Sectioning revealed a unilocular cyst filled with gelatinous brown material. The wall thickness was between 0.1 × 0.3 cm. Internal vegetation (papillary projections) were identified measuring 1.7 × 1.5 × 0.4 cm attached with necrotic material. Microscopic examination of the specimens A1-A5: internal vegetation (papillary projections); A6-A7: cystic wall with internal vegetation; A8: cystic wall with skin concurred with ES.

The patient recovered well and was followed up by clinical examination and by ultrasound for 12 months.

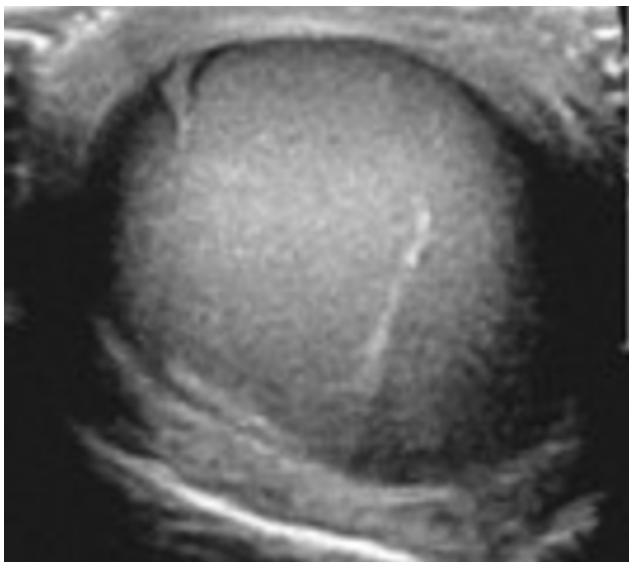


Figure 1. Transverse ultrasound image showing a cystic testicular lesion with internal echoes and a thin septum.

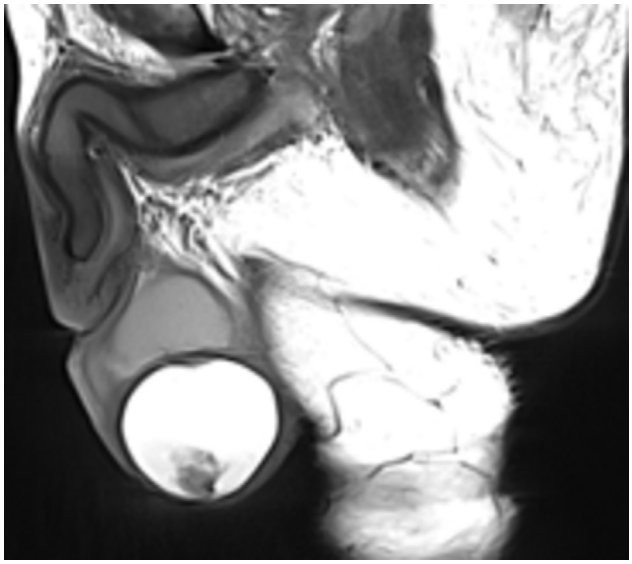


Figure 2. Magnetic resonance imaging. Sagittal T2WI showing hyperintense homogenous contents with hypointense nodule caudally.

DISCUSSION

Eccrine spiradenoma (ES) is a benign dermal tumor arising from the sweat glands. Hwang et al.[6] described ultrasonographic features of ES in 8 male (no ES in the scrotum) and female patients. In their series, most of the lesions had a lobular shape, and all had well-defined margins. Three of them had a tract like structure in the superolateral portion of the mass that may relate to the histological morphological characteristics of ES[6]. Histologically, the eccrine secretory unit comprises a simple tubular epithelium lining the secretory coils, situated in the reticular dermis, and eccrine ducts that conduct the sweat through the dermis and epidermis onto the surface of the skin. If the eccrine duct is obstructed by tumor cells or secretory fluid, it is possible that the tract like structure would be seen on ultrasound. The excised lesion of scrotal ES had smooth outlines with absence of connecting external tracks to dermis. Comparing findings with literature, this track is only seen in cases of subcutaneous ES in the extremities. Mullaney et al.[7] described MRI findings of benign nodular hidradenoma (a skin tumor that has been described by various names) in a subcutaneous lesion with a cystic component that had homogeneous, high-intensity, T1 and T2 signals, with no signal loss on the fat-suppressed sequences. The central mass showed low-intensity T1 and T2 signals. The ultrasound appearance of their lesion is a predominantly cystic mass with a mural nodule. The deep aspect of the cystic component is separate from the flexor tendon and sheath[7].

It should be taken into consideration in the differential diagnosis of intrascrotal extra-testicular lesions particularly cystic ones. One limitation of our study is that follow up was done using ultrasound imaging only. To our knowledge this is the first description of ultrasound and MRI findings of ES of the scrotum. In our case the ultrasound images reflect the histopathological pattern of the gelatinous contents of the cyst while MRI showed the enhancing nature of the septum and papillary growth within the lesion. Also, the enhancing mural nodule and septum correspond to those described in the literature but in different (subcutaneous) locations.

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