

# Leiomyoma of the Epididymis

S K Wong

## ABSTRACT

**Epididymal leiomyomas are rare intrascrotal neoplasms. It is a slow growing tumour and usually present as an enlarged, painless scrotal mass. A case with an unusual presentation is reported with a review of the possible sonographic findings of this entity and the differential diagnosis of a mass in the epididymis.**

**Keywords: epididymis, leiomyoma, sonography, extratesticular mass**

## CASE REPORT

A 36-year-old Chinese man was referred for ultrasonography to evaluate a right scrotal mass. The mass was discovered when he presented with pain within the right testis. He was treated conservatively on two separate occasions with antibiotics and the pain subsequently subsided. However, the right scrotal swelling persisted and a discharging sinus developed over the scrotal skin adjacent to the mass. Physical examination revealed a hard, solid scrotal mass inseparable from the right testis.

Ultrasound showed a well-defined solid mass postero-lateral to the lower pole of the right testis and was partially adherent to it (Fig 1). The echoes were inhomogenous and hypoechoic compared with the adjacent testis. There was no internal calcification or acoustic shadowing distal to the mass. No significant increased vascularity was demonstrated with colour doppler. Both testes were otherwise normal. No hydrocoele was detected. The ultrasound diagnosis was that of an epididymal tumour.

The patient underwent excision of the right epididymis. It was enlarged and indurated. A sinus track seen leading from the epididymal mass to the scrotal skin was also excised. On gross examination, the whitish nodular mass measured 1.2 x 1.2 x 1 cm. Microscopic evaluation demonstrated elongated bundles of smooth muscle tissue consistent with leiomyoma. Focal collection of inflammatory cells was also noted.

## DISCUSSION

Ultrasound is a useful tool to evaluate any scrotal mass. It is a non-invasive way to confirm the presence of a mass and to establish its location and characteristic features. The normal epididymis is situated postero-lateral to the testis. It has homogenous echotexture

which is isoechoic or slightly hyperechoic to that of the testis. The head of the epididymis is up to 10 mm thick while the body is usually less than 4 mm. The tail may not be seen as it is closely applied to the testis.

With ultrasound, cystic lesion of the epididymis like epididymal cysts and spermatoceles are easily distinguished from solid lesions. Solid epididymal masses are however non-specific in appearance as neoplastic and inflammatory or granulomatous masses, have variable echogenicity and may appear relatively similar. The inflammatory or granulomatous disease to be considered in the differential diagnosis include: epididymitis, sperm granuloma, sarcoidosis and tuberculosis.

Acute epididymitis presents as an enlargement of the epididymis with lessening of the normal acoustic texture. The etiology is varied with the most common being idiopathic and infection. Trauma or retrograde urine flow occur less frequently<sup>(1)</sup>. Colour doppler can demonstrate an increased number and concentration of identifiable vessels in the affected region of the epididymis that develop in acute infection or inflammatory conditions due to hyperemia. Prominent venous flow may also be noted, a finding that is not present in the normal state. This is important as gray scale images have been documented to be normal in 20% of patients with epididymitis<sup>(2)</sup>.



**Fig 1** – Transverse sonogram of right hemiscrotum shows an inhomogenous solid extra testicular mass (M) adjacent to the lower pole of the testis (T).

Chronic epididymitis are non-specific and the diagnosis is usually established on the basis of clinical findings after exclusion of other disorder especially epididymal tumour. The only finding noted on ultrasound may be an irregular thickened epididymis with thickening of the tunica albuginea.

Tuberculous epididymitis is diagnosed primarily on the clinical presentation of scrotal swelling, pain, discharging sinus supported by laboratory findings and bacteriologic tests<sup>(3)</sup>. Majority of patients have a history of previous tuberculosis. Sonographically, the characteristics are the same as those seen in any non-specific epididymitis.

Sperm granuloma commonly presents as a roundish well circumscribed hypoechoic mass in the epididymal head. It usually occurs in vasectomised patient or in patients with a previous history of infection or trauma<sup>(4)</sup>.

Epididymal sarcoidosis is a rare disease and presents as an unilateral painless nodule<sup>(5)</sup> with bilateral involvement in less than one-third of cases. Occasionally it may present with pain and swelling that mimics epididymitis. Sonographically, it is also well circumscribed and hypoechoic.

Primary solid neoplasms in the epididymis are rare, representing 5% of intrascrotal neoplasms. Seventy-five percent are benign, the majority of which are adenomatoid tumours of the epididymis. Leiomyomas are the second most common primary benign tumour of the epididymis<sup>(6,7)</sup>. Malignant paratesticular tumours (including sarcoma, carcinoma and metastases) are rare and generally occur in men over 40 years of age except rhabdomyosarcomas which are usually seen in men under the age of 20 years.

Epididymal leiomyomas are slow growing tumours and usually present as an enlarged, painless scrotal mass. They are usually unilateral and occur with equal frequency on either side. Bilateral tumours are rare but have been reported<sup>(8)</sup>. Out of 17 cases reviewed by Block and Block<sup>(9)</sup>, only one presented with pain and an intrascrotal mass. In the current case, the patient presented with a painful intrascrotal mass. Post-exploration, the clinical impression was epididymal tuberculosis in view of the hard indurated mass which was associated with a discharging sinus track. Histology however, confirmed the diagnosis of a leiomyoma. Focal collections of inflammatory cells suggested superimposed inflammation which was likely controlled with antibiotics.

Sonographic imaging reports of epididymal leiomyoma have described a variety of appearances. However, none is specific or diagnostic of leiomyoma. They usually appear as a solid hypoechoic or heterogenous mass<sup>(8,9,10)</sup> as in the current case. Areas of calcification within the tumour appearing as small bright echogenic foci with distal shadowing had been reported<sup>(10)</sup>. A recent article has described multiple distinct linear acoustic shadows within the leiomyoma which did not originate from any echogenic foci<sup>(11)</sup>. This pattern of linear shadows within the substance of the mass is commonly seen in uterine leiomyomas and corresponds to transition zones between the various tissue components of the mass<sup>(12)</sup>.

In conclusion, sonography is a safe and reliable method to confirm and characterise an epididymal mass. However, it is not possible to distinguish a leiomyoma from other solid epididymal tumour like an adenomatoid tumour of the epididymis. Surgical exploration is probably the only way to confirm the diagnosis and to rule out a malignant mass.

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