Scrotoliths (Extra-testicular calcifications) - Are they significant?

Clinical History:

A 56-year-old male patient presented with complaints of pain and swelling in the scrotum for one month. He also had fever for 1 week. He gave no history of trauma or sports activities. By profession he was a plaster mason involved in construction.

Imaging Findings:

Ultrasound of the scrotum showed a large cystic structure measuring 5 x 3 cm in relation to the upper pole of right testis with mobile internal echoes, suggestive of a spermatocele. Right scrotum showed minimal loculated hydrocele with multiple echogenic foci showing posterior acoustic shadowing suggestive of extra-testicular calcifications (scrotoliths/scrotal pearls). The average size of the scrotoliths in our case was 2-2.5 mm. Both testicles and epididymis were of normal size, echotexture and vascularity. Bilateral spermatic cords were normal in echotexture and vascularity.

Discussion:

Scrotoliths, also known as scrotal pearls or extra-testicular calcifications, are seen between the layers of the tunica vaginalis. They are freely mobile calcified bodies [1, 4, 5]. Extra-testicular calcifications are more common than intratesticular calcifications. They may be multiple and range in size from a few mm up to 10 mm [3, 5]. Scrotoliths were first described in 1935 [3]. Although their exact aetiology is unclear, they are closely associated with chronic urogenital micro-trauma. In fact a study carried out by Frauscher et al found that the incidence of scrotoliths was nearly 80% in mountain bike riders. Other known sports activities causing scrotoliths include horse riding & equestrian sports. Scrotoliths may also represent loose bodies caused by torsion of the epididymis or appendix testis. They are also sometimes found in patients with epididymo-orchitis and secondary hydrocele. [1-5]

The patho-physiology behind scrotoliths is that repeated trauma or inflammation causes damage to the different layers of tunica vaginalis, and other soft tissues of scrotum and spermatic cord leading to abnormal re-absorption of different minerals such as cholesterol, calcium and hydroxyapatite resulting in stone formation. Repeated deposition leads to the formation of a larger calculus resembling a scrotal pearl. [1, 3]

Ultrasound is the ideal mode of imaging for scrotoliths. They appear as mobile echogenic foci causing posterior acoustic shadowing or comet-tail artefacts. The presence of free fluid within the scrotum aids in their quick identification as they would be freely moving. [3, 4, 5]

Unlike intra-testicular calculi which are mostly significant as they can be associated with malignant conditions or
testicular infarction, extra-testicular calculi on their own are not significant. But one must consider that they're most of the time associated with benign conditions related to chronic micro-trauma and inflammatory aetiologies, and are very rarely seen alone. [1-6] There is also well documented literature showing scrotoliths being associated with malignant mesothelioma of the tunica vaginalis testis, and hence scrotoliths should not be overlooked. [7]

**Differential Diagnosis List:** Scrotoliths (Extra-testicular calcifications), Calcifications of epididymis or tunica vaginalis, Calcified haematoma, Sperm granuloma

**Final Diagnosis:** Scrotoliths (Extra-testicular calcifications)

**References:**


Description: Scrotal ultrasound longitudinal axis (panoramic view) using a linear probe: shows a large cystic lesion adjacent to the right testis with internal echoes, suggestive of a spermatocele. Origin: Father Muller Medical College, Kankanady, Mangalore, Karnataka, India.
Figure 2

Description: Scrotal ultrasound longitudinal axis using a linear probe: shows minimal loculated hydrocele in the right scrotum with multiple echogenic foci, suggestive of scrotoliths/scrotal pearls.

Origin: Father Muller Medical College, Kankanady, Mangalore, Karnataka, India.
**Description:** Scrotal ultrasound longitudinal axis of the left scrotum using a linear probe: shows the left testis with multiple scrotal pearls (arrows) in the tunica vaginalis. **Origin:** Father Muller Medical College, Kankanady, Mangalore, Karnataka, India.
Description: Scrotal ultrasound longitudinal axis of the left scrotum using a linear probe: shows the left testis with multiple scrotal pearls (arrows) in the tunica vaginalis. Origin: Father Muller Medical College, Kankanady, Mangalore, Karnataka, India.
Description: Scrotal ultrasound longitudinal axis of the left scrotum using a linear probe: shows the left testis with multiple scrotal pearls (green arrow) in the tunica vaginalis. Origin: Father Muller Medical College, Kankanady, Mangalore, Karnataka, India.
**Figure 3**

**Description:** Scrotal ultrasound longitudinal axis using a linear probe: shows normal appearing bilateral epididymis. **Origin:** Father Muller Medical College, Kankanady, Mangalore, Karnataka, India.
Description: Scrotal ultrasound longitudinal axis using a linear probe: shows both testes having normal size, echotexture and vascularity. Origin: Father Muller Medical College, Kankanady, Mangalore, Karnataka, India.