CASE REPORT

Paratesticular myositis ossificans of the spermatic cord

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SUMMARY

A 56-year-old man presented with a painless scrotal lump, enlarging over the preceding 1 month. The lump was roughly 1 cm in size, and located in his left hemiscrotum and separate from the testis. An ultrasound revealed an echogenic focus with dystrophic tissue calcification. Subsequent surgical excision and histopathological analysis revealed it to be late-stage myositis ossificans, a benign, extraosseous formation of the bone or cartilage. We report of only the second described case of myositis ossificans of the spermatic cord in the literature to date.

BACKGROUND

Spermatic cord tumours (SCTs) are rare, and account for roughly 4% of all scrotal tumours¹ and 75% of all paratesticular tumours.² Lipomas are the most commonly identified SCT, identified in roughly 70% of cases,^{1,2} whereas myositis ossificans (MO) has only been described once before in the spermatic cord.³ MO describes a benign, self-limiting, extraosseous formation of the bone and/or cartilage. It most frequently occurs in the muscle as a solitary lesion and frequently follows trauma.⁴

CASE PRESENTATION

A 56-year-old man was referred to the urology service with a 1-month history of an enlarging, painless left scrotal lump. There was no history of trauma to the region, no associated lower urinary tract symptoms or haematuria.

His medical history included ischaemic heart disease, coronary artery bypass graft, right total hip replacement, parotidectomy and transurethral resection of prostate. He was a non-smoker.

On initial examination there was a 10 mm hard mass high in his left hemiscrotum, separate from the left testis. Both of his testes were otherwise normal.

Figure 1 Left spermatic cord nodule. H&E-stained sections at 40× (A) and 100× (B) magnification showing mature bone with admixed spindle cells and intact fibrous capsule.

INVESTIGATIONS

An ultrasound of his scrotum revealed a small hydrocele adjacent to the superior pole of the left testis, and a 15 mm echogenic focus superiorly in the left hemiscrotum consistent with an area of dystrophic soft tissue calcification.

DIFFERENTIAL DIAGNOSES

Inguinal hernia, hydrocele, spermatocele, haematocoele, epididymis tumour, cyst and scrotolith.

TREATMENT

The patient underwent left scrotal exploration using a 25 mm inguinal incision just above the inguinal ligament. The spermatic cord was identified and the testis delivered through the superficial inguinal ring. Two calcified spermatic cord lesions were identified over the superior pole, separate from the epididymis, and were removed. The small hydrocele was also repaired.

OUTCOME AND FOLLOW-UP

Histopathological analysis after resection of the lesion grossly demonstrated a firm white calcified nodule (22×18×17 mm) with a fibrous capsule and required decalcification prior to microscopic examination. Microscopic evaluation revealed a well-formed nodule of mature bone with admixed cytologically bland spindle cells surrounded by an intact fibrous capsule (figure 1). There was no necrosis, mitotic activity or infiltrative growth pattern. Immunohistochemical staining was negative for desmin and smooth muscle actin, and CD34 was also negative. The histological appearances were felt to represent late-stage MO.

DISCUSSION

As described above, SCTs are rare.^{1,2,5} Most cases of SCTs present as a unilateral, painless, solid lump either at the level of the inguinal canal or in the scrotum.⁵ The lesion is usually separate from the testis and can be accompanied by a hydrocele,^{3,5} as in the case described. The differential for such lumps is wide, and they can often be mistaken for an inguinal hernia, hydrocele, spermatocele or haematocoele. The imaging of choice is ultrasound, as it can help determine the location and distinguish intratesticular from extratesticular lesions.⁶ Benign lesions tend to be hypoechoic, well-demarcated and homogeneous.⁷ Due to the rarity of SCTs, there is no consensus on how to manage them. For benign and malignant lesions of the spermatic cord,

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surgical excision is recommended, given the high probability of sarcomas.⁵

MO is a benign, reactive, extraosseous formation of the bone or cartilage tissue.⁴ Fifty per cent of cases have a history of trauma, and the most common locations are the flexor muscles of the upper arm, quadriceps femoris and the adductor muscles of the thigh in horse riders ('rider's bone'). Although the pathophysiology of MO is poorly understood, it is thought that it occurs due to aberrant differentiation of fibroblasts into osteogenic cells,^{4,8} caused by inflammatory cytokines in response to tissue injury. Histopathologically MO is characterised by mesenchymal metaplasia, chondro-osseous differentiation, and in late stages mature bone formation. In the early stages, it can be mistaken for a sarcoma.⁴

Only one other case report has described MO of the spermatic cord.³ In that particular case, a 53-year-old man presented

with a painless, hard and mobile inguinal mass (6×5 cm), and was investigated using ultrasound,³ similar in presentation to the current case described.

Contributors JMH, TMCD and AZT conceived the work. JHM and KOH retrieved the data. JMH, KOH, TMCD and AZT interpreted and analysed the data. JMH, KOH, TMCD and AZT approved the final version of the manuscript and are accountable for all aspects of this work.

Competing interests None declared.

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Learning points

- ▶ Spermatic cord tumours are rare, accounting for 4% of all scrotal tumours.
- ▶ Lipomas are the most commonly identified benign tumour, whereas sarcomas are the most common malignancy.
- ▶ Myositis ossificans describes a benign, self-limiting, extraosseous formation of the bone or cartilage.
- ▶ We describe only the second case of myositis ossificans of the spermatic cord.

REFERENCES

- 1 Guttilla A, Crestani A, Zattoni F, *et al.* Spermatic cord sarcoma: our experience and review of the literature. *Urol Int* 2013;90:101–5.
- 2 Rodríguez D, Olumi AF. Management of spermatic cord tumors: a rare urologic malignancy. *Ther Adv Urol* 2012;4:325–34.
- 3 Özgür A, Tarcan T, Simsek F, *et al.* An unusual tumor of the spermatic cord: myositis ossificans. *Arch Esp Urol* 2003;56:1072–4.
- 4 Walczak BE, Johnson CN, Howe BM. Myositis ossificans. *J Am Acad Orthop Surg* 2015;23:612–22.
- 5 Moschini M, Mattei A. Diagnosis and management of spermatic cord tumors. *Curr Opin Urol* 2017;27:76–9.
- 6 Frates MC, Benson CB, DiSalvo DN, *et al.* Solid extratesticular masses evaluated with sonography: pathologic correlation. *Radiology* 1997;204:43–6.
- 7 Akbar SA, Sayyed TA, Jafri SZ, *et al.* Multimodality imaging of paratesticular neoplasms and their rare mimics. *Radiographics* 2003;23:1461–76.
- 8 Mavrogenis AF, Soucacos PN, Papagelopoulos PJ. Heterotopic ossification revisited. *Orthopedics* 2011;34:177.

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