CASE REPORT

Testicular microlithiasis in a unilateral undescended testis: a rare phenomenon

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Abstract

Testicular microlithiasis (TM) is a rare benign condition with presence of multiple small microcalcifications in the seminiferous tubules. Though the aetiology is unknown, TM has been described in association with a variety of urological conditions. We report the clinico-pathological features of a 12-year-old male child who underwent orchidectomy for undescended testis. Histopathological examination of the excised testis showed multiple small intratubular calcifications without any evidence of testicular neoplasia. TM is an unusual phenomenon that should be kept in mind while evaluating testicular biopsies. Though it behaves in a benign manner in most of the cases, patients with positive family history of testicular cancer should be followed-up for testicular tumour.

Key words: microlithiasis, testicular neoplasia, undescended testis, seminiferous tubules

INTRODUCTION

Testicular microlithiasis (TM) is a rare condition, which can be diagnosed by ultrasonography or histology. TM results in the formation of intratubular calcifications within seminiferous tubules.1,2 Testicular microliths are generally multiple, small, echogenic intratubular calcifications. TM is generally bilateral but few unilateral cases have also been reported.3

The true incidence of TM is not known. Autopsy findings show the presence of TM in 0.04-11.8% of prepubertal boys and 3% of adult males.4 TM has been reported in association with conditions like infertility, testicular atrophy, cryptorchidism, hydrocele, torsion of testis and its appendages, Down’s syndrome, varicocele and male pseudohermaphroditism.5

CASE REPORT

A 12-year-old male patient presented with right sided undescended testis. On examination, the right scrotal sac was empty. The left testis was palpable in the scrotal sac.

Ultrasonography of the abdomen showed the right undescended testis to be present intra-abdominally, 2.5 cm medial to the anterior superior iliac spine. The testis was 1.6×1.2 cm in size. No focal lesion was noted.

The patient underwent diagnostic laparoscopy and right orchidectomy (in view of the age and risk of testicular neoplasia). Intraoperatively, an atrophied right testis was lying at the deep inguinal ring, intra-abdominally. The right testes with cord was excised and submitted for pathological examination.

Pathological findings

The right testis measured 1.5 x 1.2 cm with an attached cord 2cm in length. On cut section, the testis was grey yellow. No areas of necrosis, haemorrhage or calcification was noted. The testis was processed for histopathology in entirety.

Sections from the testis showed seminiferous tubules lined by predominantly sertoli cells with few of the tubules showing intraluminal concentrically laminated calcifications (Fig. 1a). These stained positive with von kossa stain (Fig. 1b). Some of the tubules revealed intratubular localization of leydig cells. The epididymis was unremarkable. No evidence of intratubular germ cell neoplasia or other testicular tumours was noted.
Further history taking did not reveal any family history of testicular tumour.

DISCUSSION

TM is an uncommon pathology, the exact cause of which is not known. Very few cases of TM have been reported in children since most of the published data deals with TM in adults.6

TM is believed to occur from the degeneration of the seminiferous epithelium. The resultant debris accumulates in the tubular lumen in the form of glycoprotein and calcium layers and evolves into the histologically and pathologically characteristic form.7

TM can be associated with conditions like infertility, testicular atrophy, cryptorchidism, hydrocele, torsion of testes and its appendages.5 The relationship between infertility and TM is not very clear. Since 30-40% of seminiferous tubules are obstructed with intratesticular concretions in these patients, TM has been suggested to be the cause of infertility in such cases.4 In studies by Janzen et al, 37% cases of TM were associated with an undescended testis.1 Our patient also had a right undescended testis with TM.

The sonographic appearance of TM is characteristic and usually is seen as multiple, diffuse, punctate, non shadowing hyperechoic foci scattered within the testicular parenchyma. The microliths detected on ultrasound are present within the seminiferous tubules and are believed to arise from atrophic and degenerated cells within the tubules.8

The evaluation of testicular biopsy and orchidectomy specimen has identified the co-existence of intratesticular microcalcifications and malignancy in many cases. Janzen described a series of 11 patients with TM, two of whom had coexistent seminoma.1 The association between TM and testicular carcinoma in situ has also been documented. Song et al in his study revealed ipsilateral microlithiasis in 14 out of 21 patients with testicular carcinoma in situ and considered the presence of focal clumped testicular microlithiasis without testicular mass an indicator of tumour.9 Backus et al reviewed 42 cases of TM in his study amongst whom 40% had associated tumours.3 However, Kocaoglu et al followed up nine boys with TM for 6 months to 6 years and none of the patients developed any tumour.6

Microlithiasis is generally considered a benign condition but in cases with positive family history of testicular malignancy strict follow-up is recommended.

In conclusion, testicular microlithiasis is a rare condition in the paediatric age group. Association of this condition has been seen with infertility, testicular atrophy and testicular tumours. Hence in cases with positive family history of testicular tumour, follow-up is recommended.

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Authors’ contributions
SS performed the literature review and wrote the manuscript. VM was the surgeon involved with the management of the patient and critically reviewed the manuscript. RG was the signing-out pathologist and critically reviewed the manuscript. All authors approved the final draft of the manuscript.

REFERENCES