Case Report

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Intra-testicular epidermoid cyst: a rare case report with clinico-radiological dilemma

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ABSTRACT

Intra-testicular epidermoid cyst of testis is a benign tumour and accounts for 1-2% of all testicular neoplasms. It is a benign lesion, and should be distinguished from dermoid cyst or teratoma, which have a considerable malignant potential. We describe a rare case of testicular epidermoid cyst in an elderly male presenting with gradually increasing testicular mass since 8 months. Local examination revealed a non-tender, irregular, hard mass in the right testis. All routine laboratory investigations along with tumour markers were within normal limits. Ultrasound showed features of a testicular neoplasm following which orchidectomy was performed. Grossly, cut surface of testis showed a cyst measuring 4x2x1cm and microscopic examination revealed features of an epidermoid cyst. Extesive sampling excluded the possibility of a teratomatous focus. This case is described owing to the rarity of this neoplasm and the unusual clinico-radiological presentation. The pre-operative diagnosis of this tumour can be made if characteristic sonographic and MRI findings are obtained in the absence of which these masquerade neoplastic lesions. Histopathological examination thus is vital for a decisive diagnosis.

Keywords: Epidermoid, Testis, Teratoma

INTRODUCTION

Intra-testicular epidermoid cyst of testis is a benign tumour and accounts for 1-2% of all testicular neoplasms. It presents in the 2nd to 4th decades of life, although patient age ranges from 3 years to 77 years, and is more common in white males. It is usually unilateral, with a slightly higher prevalence in the right testis, and is composed entirely of keratin producing epithelium. Although certain radiological features and negative tumour markers raise the suspicion of this lesion, its clinical diagnosis poses a major challenge to the surgeon.

We describe a rare case of testicular epidermoid cyst in an elderly male presenting with unusual clinicoradiological features. The histopathological features of this rare neoplasm have also been discussed.

CASE REPORT

A 55 years old male patient presented to the outpatient department of surgery with a gradually increasing testicular mass since 8 months. There was no associated testicular pain and no past history of trauma, infection or testicular surgery. Local examination revealed a nontender, irregular mass in the right testis measuring 10cm x 6cm x 4cm. The mass was firm to hard in consistency. Ipsilateral spermatic cord along with contralateral testis and epididymis appeared normal on palpation. There was no palpable inguinal lymphadenopathy. All routine laboratory investigations and tumour markers i.e. alpha-

feto protein (AFP), beta- human chorionic gonadotropin (beta-HCG), CA 19.9, CA 125 and carcino-embryonic antigen(CEA) were within normal limits. On ultrasonography, a hypo-echoic lesion was seen in the right testis. With a provisional radiological diagnosis of testicular neoplasm, right orchidectomy was performed.

Orchidectomy specimen measuring 11x6x4 cm was received in Department of Pathology. Grossly, external surface was congested and tunica albuginea was intact. Cut surface showed a cyst measuring 4x2x1 cm. The cyst wall was thickened and gritty on cut. Luminal contents of the cyst were mainly necrotic. Viable testicular tissue was seen pushed to one side, measuring 4x3x2 cm (Figure 1).

On microscopic examination, sections from the cyst wall showed mainly fibro-collagenous tissue along with calcification (Figure 2a). The cyst lumen showed necrotic debris and fungal hyphae (Figure 2b). There was no associated inflammatory response noted. On further gross examination and sectioning, the cyst wall was focally lined by stratified squamous epithelium (Figure 2c). However, no skin appendages were seen. Furthermore, no other germ layer derivative could be identified on extensive sampling. Based on the histo-morphological features, a final diagnosis of epidermoid cyst of right

testis was rendered. The immediate post-operative period of the patient was uneventful. On follow-up, the patient has been doing well 8 months later.

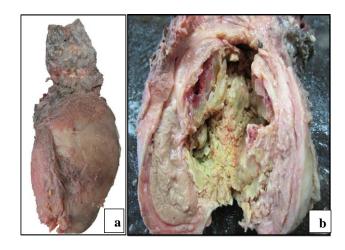


Figure 1: (a) Gross photograph shows an orchidectomy specimen measuring 11x6x3 cm with an intact tunica albuginea; (b) Cut surface shows a cyst measuring 4x2x1 cm with viable testicular tissue seen pushed to one side. The cyst wall is thickened and the luminal contents are mainly necrotic.

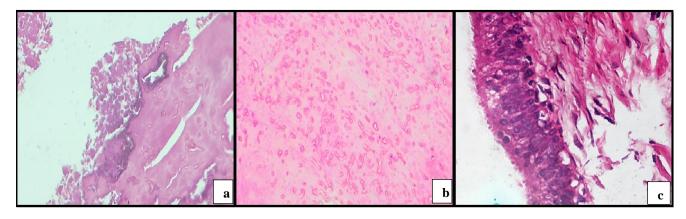


Figure 2: (a) Photomicrograph showing cyst wall comprising of fibro-collagenous tissue along with calcification (H&E x20); (b) Luminal contents show necrotic debris and fungal hyphae (H&E x20); (c) Focally the cyst wall shows a stratified squamous epithelium lining without skin appendages (H&E x40).

DISCUSSION

Testicular epidermoid cyst was firstly denominated in 1942 by Dockerty and Priestly as a rare benign tumour.⁶ It was finally in 1969 when Price et al described the histomorphological features of this rare tumour in a series of 69 cases. Thus, established criteria for a conclusive diagnosis of testicular epidermoid cyst are (i) the lesion must be located within the testicular parenchyma; (ii) the luminal contents of the cyst should comprise of keratinized debris; (iii) dermal appendages or teratoid elements should not exist within the cystic lesion; (iv) no

scars should be present in the parenchyma adjacent to the epidermoid cyst.⁷

Epidermoid cysts which comprise 1% of all testicular tumours approximately, differ from dermoid cysts as the latter contain skin along with appendages. Teratomas on the contrary contain all three germ layer derivatives. The absence of mesodermal and endodermal components distinguishes epidermoid cysts from dermoid cyst or teratoma, which have a considerable malignant potential. Clinically, epidermoid cysts appear as firm, well circumscribed, small, solitary, painless masses, which are

often indistinguishable from malignant tumours. Absence of elevated tumour markers such as AFP and beta-HCG, hyperechoic heterogeneous sonographic pattern with a characteristic 'onion skin' appearance, and no vascularisation on Doppler imaging aid in the preoperative diagnosis of this uncommon entity. Furthermore, magnetic resonance imaging typically a low intensity centre, a high-intensity mid-zone which consists of scaly squamous cells, and low intensity peripheral zone due to presence of keratin giving a 'bull's eye' appearance.^{8,9} While the tumour marker profile was within normal limits in our case, diagnostic sonographic findings were not noted leading to a pre-operative diagnosis of a testicular neoplasm. Therefore, though imaging acts as an adjunct in the diagnosis of these tumours, histomorphological assessment remains the gold standard for a conclusive diagnosis.

The genesis of this tumour remains elusive with monodermal variant of teratoma or metaplasia of the seminiferous tubules and the rete testis being theories accepted commonly. The treatment of choice for intratesticular epidermoid cyst is excision of the cyst with the surrounding testicular parenchyma to check for any teratomatous component or an accompanying malignant germ cell neoplasia. Postoperative monitoring is also recommended.

To conclude, epidermoid cysts are rare benign neoplasms of the testis with an elusive pathogenesis till date. The pre-operative diagnosis of this tumour can be made if characteristic sonographic and MRI findings are obtained in the absence of which these masquerade neoplastic lesions. Surgery followed by histopathological examination thus is vital for a decisive diagnosis.

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