Bilobed testis due to epidermoid cyst: a case report.

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Abstract

Introduction
Testicular epidermoid cysts are rare benign keratin containing intratesticular lesions which account for 1-2% of all testicular neoplasms. These are intratesticular lesion with no malignant or metastatic potential. We are reporting a 19 year old patient with testicular epidermoid cyst in which major body of the cyst was outside the testicular contour along with a discussion on the aetiology, diagnosis and treatment options for this rare lesion.

Case report
We are reporting a 19 year old patient with a testicular epidermoid cyst in which major body of the cyst was outside the testicular contour along with a discussion on the aetiology, diagnosis and treatment options for this rare lesion.

Discussion
Epidermoid cyst should be considered in the differential diagnosis of the painless testicular masses, both in adults and children. Clinically, it is difficult to differentiate the epidermoid cyst from malignant tumours and they are mostly diagnosed by histopathology of orchietomy specimen. On scrotal Sonography, “Onion ring” appearance is considered characteristic for epidermoid cyst. Testicular sparing surgery can be performed if the germ cell tumour is excluded by frozen section analysis of cyst wall as well as adjacent parenchyma.

Conclusion
In our case, a major part of the epidermoid cyst was outside the contour of the testis and fulfilled Price’s criteria as well, on histopathology along with having an intraparenchymal origin at the upper pole.

Introduction
Testicular epidermoid cysts are rare benign keratin containing intratesticular lesions which account for 1-2% of all testicular neoplasms.1 These were first reported by Dockerty and Priestly in 1942 and around 300 cases have been reported so far.2,3 It is usually a solitary lesion and rare instances of bilateral and multiple epidermoid cysts have been reported in association with Gardner syndrome (one case), Klinefelter syndrome (two cases) and cryptorchism.4,5,6 The reported age range for epidermoid cysts of the testis is from 3 years to 77 years, being more common in 2nd to 4th decade of life.4,7 It has been found to be more common in the right testis in comparison to the left.4,7,8 We are reporting a case of testicular epidermoid cyst in which major body of the cyst was outside the testicular contour along with discussion on aetiology, diagnosis and treatment options for this rare lesion.

Case report
A 19 year old patient presented with a painless right testicular swelling which has been growing slowly for five months. On clinical examination a hard, non tender mass of 3.5 cm X 3 cm with a well defined margin was arising from the upper pole of the right testis. Most part of the mass was outside the contour of testis with the base being fixed to the upper pole giving it a bilobed appearance (Figure 1). The left testis was normal. On scrotal sonography, a 3.5 cm X 3 cm X 2.5 cm hypoechoic mass with onion peel appearance, suggestive of epidermoid cyst was observed, arising from the upper pole of the right testis. (Figure 2).

This mass was avascular on Colour Doppler study. Serum α-fetoprotein and β-hCG levels were within normal limits. CT Scan of the abdomen and X-ray chest had no evidence of lymphadenopathy or metastatic disease.

Figure 1: Clinical photograph showing bilobed appearance of the right testis.

Figure 2: USG showing ‘Onion ring’ appearance of epidermoid cyst of testis.

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Competing interests: None declared.

All authors contributed to conception and design, manuscript preparation, read and approved the final manuscript.

All authors abide by the Association for Medical Ethics (AME) ethical rules of disclosure.
The frozen section analysis confirmed the diagnosis of epidermoid cyst and there was no evidence of adenial tissue or malignancy in it. Sections of adjacent parenchyma also ruled out any evidence of germ cell tumour. These findings were confirmed by histopathological examination.

Discussion
Epidermoid cysts of the testis are benign lesions with no malignant or metastatic potential. Majority of the patients present with a painless testicular mass, which is often detected by the patient himself. On examination, epidermoid cyst is a painless firm, smooth and non-tender mass, having a mean diameter of 2-3 cm. Testicular epidermoid cysts are hormonally inactive and serum levels of α-foetoptrotein and β-hCG are universally normal. Clinically, it is difficult to differentiate the epidermoid cyst from malignant tumours and these are mostly diagnosed by histopathology of the orchiectomy specimen.

There are various hypotheses regarding the embryonic origin of this lesion, with the most accepted being the monoclonal development of a teratoma. However, other opinions favour, its origin from metaplsia of the reteteseces and seminiferous epithelium or from a simple inclusion cyst. Price in 1969 identified the following criteria for diagnosis of an intratesticular lesion as an epidermoid cyst: (i) The lesion must be an intraparenchymal cyst, (ii) The lumen must contain keratinized debris or amorphous material with cleft like spaces, (iii) The cyst wall is composed of fibrous tissue with a complete or incomplete inner lining of squamous epithelium, (iv) There should be no teratomatous or adenaxal element in the cyst or neighbouring parenchyma and (v) There should be no scar in the remaining parenchyma. The presence of the teratomatous component or a parenchymal scar signifies a burnt-out malignant germ cell tumour. If, the adjacent tissue shows presence of testicular intraepithelial neoplasia then the lesion should be considered a true teratoma.

In cases of epidermoid cysts of testis, reported sonographic features are a mass with a central echogenic area surrounded by a hypoechoic periphery-"target" or "bull's eye" appearance, alternating hypo and hyper echogenic concentric rings called as having an "Onion ring" appearance and an echogenic mass with dense acoustic shadowing due to calcification and a well circumscribed mass with an echogenic rim. Among these features, the "Onion ring" appearance is considered characteristic for an epidermoid cyst. Some studies using MRI, have reported alternating concentric rings of low and high signal intensity on T1 and T2 weighted images corresponding to multiple layers of keratin debris along with absence of contrast enhancement consistent with the avascular nature of this lesion. Traditionally, orchiectomy by inguinal route is considered the treatment of choice for painless testicular masses as a significant majority of them have malignant aetiology. However in recent years a number of investigators have considered Testis Sparing Surgery (TSS) as the treatment of choice both in children and adults. Numerous recent reports suggest that conservative surgery is a reasonable alternative for small masses (<3cm) or masses associated with negative tumour markers and imaging features suggestive of epidermoid cysts (specifically the onion ring appearance on sonography and avascularity on colour Doppler). However, onion ring appearance has also been reported with teratomas and a considerable percentage of testicular germ cell tumours may not have elevated serum levels of α-foetoptrotein and β-hCG. So it is recommended that TSS should be done only after careful frozen section analysis of the cyst as well as adjacent parenchymal excision to exclude germ cell tumours, scars or carcinoma in situ. A large review of conservative surgery for testicular epidermoid by Heidenreich, has conclusively shown that there is no local or metastatic recurrence even with follow up till 23 years. Of all the criteria’s for TSS, frozen section analysis remains the most important with reported sensitivity and specificity of 100%, in distinguishing between benign and malignant lesions.

Conclusion
In our case, a major part of the epidermoid cyst was outside the contour of the testis, which is probably a unique presentation, as all previous reports have described it to be essentially an intratesticular lesion. We did a local excision with enucleation of the base of the mass, as all preoperative investigations suggested it to be an epidermoid cyst which was confirmed by intraoperative frozen section analysis of lesion and surrounding testicular parenchyma. This lesion fulfilled Price’s criteria as well, on histopathology along with having an intraparenchymal origin at the upper pole.

Consent
Written informed consent was obtained from the patient for publication of this case report and accompanying images. A copy of the written consent is available for review by the Editor-in-Chief of this journal.

References

Competing interests: None declared. Conflict of interests: None declared.
All authors contributed to conception and design, manuscript preparation, read and approved the final manuscript.
All authors abide by the Association for Medical Ethics (AME) ethical rules of disclosure.

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