

# SPARING SURGERY FOR AN EPIDERMOID CYST OF THE TESTIS: A CASE REPORT AND LITERATURE REVIEW

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Epidermoid cyst of the testis is relatively rare and accounts for less than 1% of all testicular neoplasms. This condition usually occurs in young men and it is mostly detected by self-examination or routine physical examination. The case of a 27-year-old male with an epidermoid cyst of the testis is discussed. The diagnosis was based on ultrasonography and management was with testicular-sparing surgery. At 2-year follow-up, the patient had had no relapse or metastasis. In epidermoid cysts of the testis, high-frequency ultrasonography is a reliable diagnostic imaging method. Organ-preserving surgery is recommended in the management of these lesions.

**Key Words:** testicular neoplasms, epidermoid cyst, testicular preservation  
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Epidermoid cyst of the testis is relatively rare. It accounts for less than 1% of all testicular neoplasms and usually occurs in young men [1]. Most epidermoid cysts are detected by self-examination or by routine physical examination. We describe a 27-year-old male who underwent testicular-sparing surgery for an epidermoid cyst of the testis.

## CASE PRESENTATION

A 27-year-old single male presented with a 1-month history of a painless mass in the left testis. There was no testicular trauma in his history. On physical examination, the right testis was normal and a round mass of 1 × 1.5 cm was noted in the left testis.

Scrotal ultrasound revealed a 1 × 1.5 cm hyperechoic mass with a sharp hypoechoic rim within the parenchyma in the middle of the left testicle. The lesion had a target

appearance with high central density echoes surrounded by hypoechoic rims. The remaining parenchyma was normal (Figure 1). The mass did not show blood flow on Doppler ultrasound. Serum β-human chorionic gonadotropin and α-fetoprotein levels were within normal limits.

A left inguinal incision gave access for exploration of the testicular mass after temporary occlusion of the spermatic cord. Testis-sparing surgery was performed



**Figure 1.** Sonographic pattern of an epidermoid cyst using a 6.5-MHz transducer. Note the hyperechoic center (arrow), surrounded by a hypoechoic rim, which gives the target appearance.

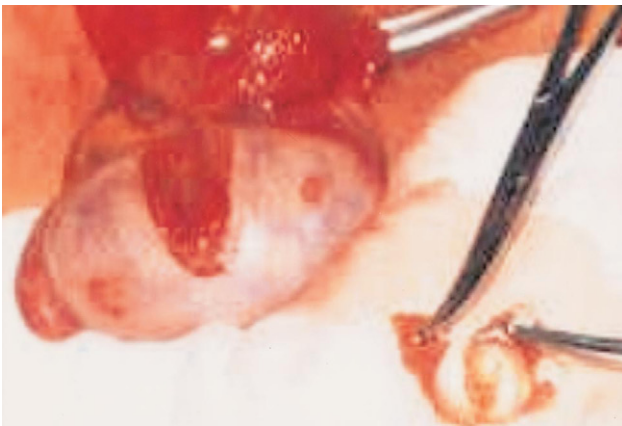
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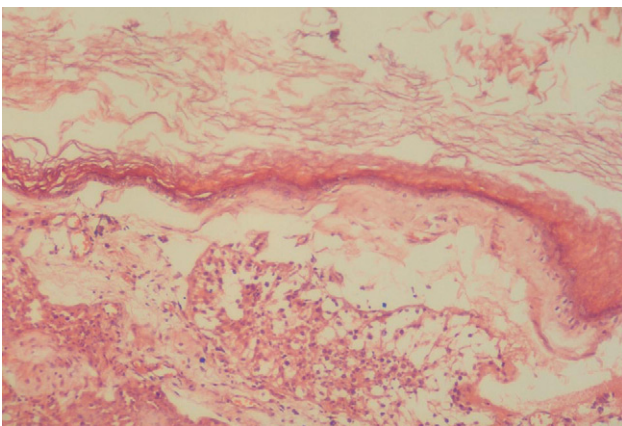
using wedge excision of the yellow-white cystic mass with peripheral normal testicular tissue (Figure 2) and the specimen was submitted for frozen section. Pathology showed an epidermoid cyst. The cyst was lined with a keratinizing, stratified squamous epithelium overlying dense fibrous tissue and filled with abundant keratohyalin material (Figure 3). There was no evidence of scar tissue or teratomatous changes. At 24-month follow-up, both testes were palpably and ultrasonographically normal.

## DISCUSSION

Epidermoid cyst of the testicle is a benign lesion, accounting for less than 1% of all testicular masses. The lesion was first



**Figure 2.** Gross specimen after testis-sparing surgery. Note the yellowish-white appearance.



**Figure 3.** Permanent section from the epidermoid cyst reveals typical histologic findings of a fibrous capsule lined with an inner squamous epithelial layer surrounding keratinized debris. Note the outer rim of normal prepubescent seminiferous tubules. (Hematoxylin & eosin, original magnification  $\times 40$ .)

described by Dockerty and Priestly [2], and more than 200 cases have been reported to date. They usually present as smooth, indurated, painless lesions located deep within the parenchyma of the testis. More than 85% of epidermoid cysts occur in patients in the second and third decades of life [1]. Patients tend to be asymptomatic and both serum tumor markers and metastatic work-up are normal. Most lesions are diagnosed after radical orchiectomy.

Although not included in the histologic classification of the World Health Organization on testicular tumors, the current prevailing hypothesis is that epidermoid cysts are of germ-cell origin and are a representation of a monodermal teratoma that is believed to be benign [3]. Price established the histologic criteria for these lesions to confirm the diagnosis as a benign epidermoid cyst of the testis [4]. According to these criteria, the cyst must be located within the testicular parenchyma, be filled with keratinized debris or amorphous material, and be enclosed within a wall of fibrous material with an inner lining of squamous epithelium. The cyst should not have any dermal adnexal or teratomatous elements or scar tissue. Epidermoid cysts are also characterized by the absence of carcinoma *in situ* in seminiferous tubules adjacent to the cyst [5].

Ultrasonography has become an important modality to evaluate testicular masses. Although the sonographic characteristics can correlate well with pathologic findings and may support the diagnosis, as in our case, they may be misleading. In addition to this imaging modality, detailed preoperative evaluation, including history and serum tumor markers, might not always obviate surgery but will help to determine the select group of lesions that may be amenable to testicular preservation. This approach depends on accurate frozen histologic diagnosis to exclude malignant lesions. Since there have been no reported recurrences or metastasis of epidermoid cysts to date, the management of these testicular masses should be directed towards organ-preserving surgery.

A study of 14 patients with epidermoid cyst of the testis, in which seven patients underwent radical inguinal orchiectomy and seven underwent testicular-sparing surgery, reported that there was no evidence of tumor recurrence in any patients after a mean follow-up of 10 years [6]. In our case, there was no relapse or metastasis by the 24-month follow-up.

Because epidermoid cysts of the testis mostly occur in patients in their second and third decades, in whom fertility is very important, organ-preserving surgery has been the treatment of choice in the management of these lesions.

In a patient with a history of repeated testicular trauma, negative tumor markers and ultrasound demonstrating a well-circumscribed lesion with a solid central core [1], we recommend inguinal testicular exploration and frozen section before orchiectomy.

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