**Testicular Sparing Surgery for Bilateral Epidermoid Cysts of the Testes: A Case Report**

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We report the case of a 12-year-old boy with bilateral epidermoid cysts of the testes diagnosed preoperatively from ultrasonography, magnetic resonance imaging, and negative tumor markers. The cysts were treated using bilateral testicular sparing surgery through a scrotal approach after intraoperative frozen section. We also discuss the diagnosis and management of epidermoid cyst of the testis and briefly review the literature.

**Key Words:** epidermoid cyst, testis, testicular sparing surgery, scrotal approach  

Epidermoid cyst of the testis is an uncommon benign testicular tumor. It accounts for about 1% to 2% of all testicular masses and bilateral occurrence is very rare [1]. The management of epidermoid cyst remains controversial. While some surgeons advocate orchiectomy, others encourage testis-sparing enucleation [2]. We report the case of a 12-year-old boy with bilateral epidermoid cysts of the testes that were treated using bilateral testicular sparing surgery via the scrotal approach.

**Case Presentation**

A 12-year-old boy presented with painless masses in bilateral testes. There was no gynecomastia or palpable abdominal or inguinal mass. Serum α-fetoprotein and β-human chorionic gonadotropin (β-HCG) levels were normal. Scrotal ultrasonography revealed a mass of heterogeneous echogenicity in each testis. The right testicular mass (1.64 × 1.10 cm) was located in the middle and had peripheral calcification (Figure 1A). The left testicular mass was located in the lower part with no calcification; it was 0.9 × 0.8 cm in size (Figure 1B). Magnetic resonance imaging (MRI) revealed that these tumors had a heterogeneous high signal intensity on T2-weighted image (T2WI), with a low signal ring and iso-intensity on T1-weighted image (T1WI) without enhancement.

The right testis was explored using the midline scrotal approach. After incising the tunica albuginea, a cystic lesion was enucleated and the epidermoid cyst was demonstrated by frozen section. The left testicular mass underwent the

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**Figure 1.** Scrotal ultrasonography reveals a mass of heterogeneous echogenicity in each testis. (A) The right testicular mass, 1.10 × 1.64 cm, is located in the middle part, with peripheral calcification. (B) The left testicular mass, 0.8 × 0.9 cm, is located in the lower part, with no calcification.
same procedure (Figure 2A). Microscopic sections demonstrated a well-encapsulated cyst filled with laminated layers of keratin and lined with squamous epithelium (Figures 2B and C). The postoperative course was uneventful. There had been no recurrence according to ultrasonography 3 months after surgery.

**Discussion**

Epidermoid cyst of the testis was first reported by Dockerty and Priestly in 1942 [3]. It accounts for approximately 1% to 2% of all testicular tumors and commonly occurs between the second and fourth decades of life. The size of the intratesticular epidermoid cyst varies from 0.5 cm to 10.5 cm, with a mean diameter of 2 cm. The right testis is involved slightly more often than the left, and bilateral occurrence is rare [4].

Clinically, epidermoid cyst cannot be differentiated from other testicular tumors, typically presenting as a non-tender, smooth, palpable, solitary testicular mass [4]. Tumor markers such as serum $\alpha$-fetoprotein and $\beta$-HCG are negative. The clinical course of epidermoid cyst is benign and the risk of local recurrence or distant metastasis is almost nil [5].

The optimal management of epidermoid cysts remains controversial. Radical orchiectomy was the gold standard therapy but is less frequently used now. Testicular sparing surgery has been suggested as the mainstay in the pediatric population, based on ultrasonography, MRI, age, tumor markers, and intraoperative frozen section [7]. If the frozen section is negative for malignancy, then the remainder of the testis can be spared. If the appearance of the lesion or the accuracy of the intraoperative pathologic diagnosis is questionable, radical orchiectomy must be considered [2].

In summary, testicular sparing surgery was performed successfully in this 12-year-old patient with bilateral testicular epidermoid cysts after careful evaluation with preoperative ultrasonography, MRI, and tumor marker survey, and intraoperative frozen section study. The postoperative course was uneventful. At 3-month follow-up, no evidence of recurrence was found.

**References**