

## DERMOID CYST OF THE TESTIS

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Teratomas represent 38% of testicular germ cell tumors in infants and children, and 47% in adults.<sup>1</sup> Teratomas are classified into three histological subtypes: mature teratoma, immature teratoma, and teratoma with malignant transformation.<sup>2</sup> Mature teratomas are composed of benign structures derived from ectoderm, endoderm or mesoderm. Although dermoid cysts are also referred to as mature cystic teratomas or benign cystic teratomas, Mostofi et al. suggest that they should be labeled as dermoid.<sup>1</sup> We report the first case of dermoid cyst of the testis in a five-year-old Saudi child who was treated by inguinal orchidectomy.

### Case Report

A five-year-old boy was referred to our hospital with a painless right testicular mass of two years' duration. There was no history of trauma or infection. Examination confirmed the presence of a right testicular mass of approximately 2 x 2 cm, non-tender and firm. The left testis was normal, and the rest of the examination unremarkable. Ultrasound (US) examination showed a right testicular mass 2.6 x 2.3 x 1.5 cm with hypoechoic areas and intratesticular calcifications (Figure 1). There was no hydrocele. A diagnosis of right testicular tumor was made. Preoperative tumor markers, serum alpha-fetoprotein ( $\alpha$ -FP) and beta human chorionic gonadotropin ( $\beta$ -HCG) were normal. Upon inguinal exploration, since the entire right testis was replaced by the mass, a radical orchidectomy was performed without frozen section biopsy. Postoperative recovery was uneventful.

Macroscopically, the whole testis was replaced by a cyst measuring 3.5 x 3.5 x 3 cm. On cut section, the cyst contained creamy-whitish keratinous material with no recognizable testicular tissue. Histology revealed a cyst lined by keratinized squamous epithelium with a granular cell layer surrounded by immature seminiferous tubules

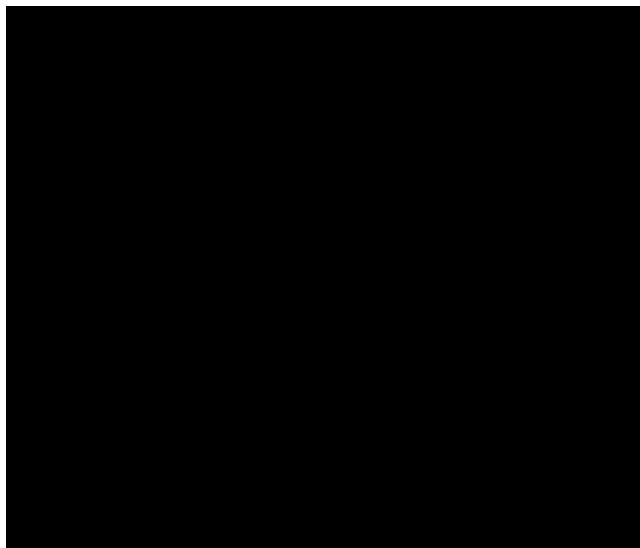


FIGURE 1. Ultrasound showing a right testicular mass with hypoechoic area and calcification.

(Figure 2). The lumen contained laminated strands of keratin. Despite thorough sampling, only one sebaceous gland was seen (Figure 3). Multiple foci of calcification and foreign body reaction to keratin and fibrosis were evident. These findings fulfilled the World Health Organization's criteria for dermoid cyst of the testis.

### Discussion

Dermoid cyst (benign cystic teratoma, mature cystic teratoma) is the most common teratoma of the ovary, but is extremely rare in the testis. The incidence of dermoid cyst is unknown, and its rarity may be due to lack of clinical criteria to establish a preoperative diagnosis and the fact that some cases are grouped under mature teratoma. Recently there have been several case reports.<sup>3-7</sup>

Dermoid cyst of the testis should be suspected in a child or adult with a painless testicular mass which has not enlarged for some time. The differential diagnosis includes benign lesions such as dermoid cyst, epidermal cyst, simple cyst and malignant tumors of the testis.

The tumor markers ( $\alpha$ -FP and  $\beta$ -HCG) are negative in a dermoid cyst. Nevertheless, they should be done

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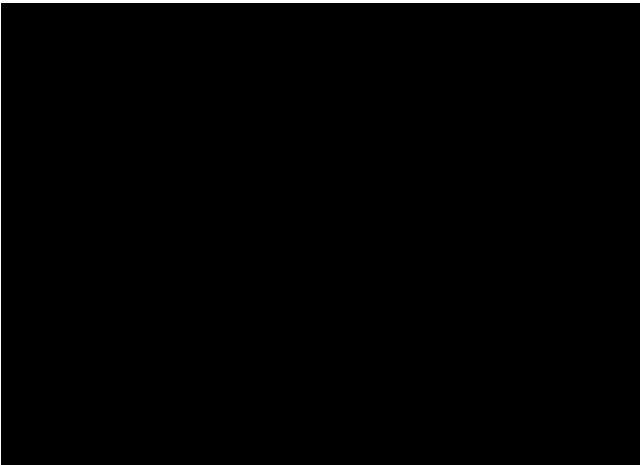


FIGURE 2. Microscopic section of part of the cyst wall lined by keratinized squamous epithelium and surrounded by immature seminiferous tubules (H&E, 100x).

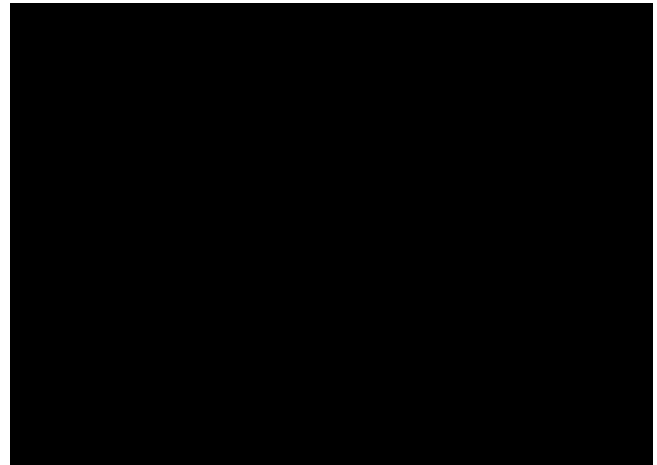


FIGURE 3. Microscopic section of part of the cyst wall showing a single sebaceous gland (HE, 250x).

preoperatively. Scrotal US can differentiate intratesticular from extratesticular lesions, but unfortunately cannot establish the exact pathological diagnosis.<sup>8</sup> US in the present case was nonspecific, but excluded a simple cyst.

Dermoid cyst of the testis is filled with sebum and contains sebaceous glands, hair follicles and sometimes sweat and apocrine glands in its fibrous stroma. Bone, cartilage, teeth and brain tissue may be present. The presence of skin appendages differentiate dermoid cysts from epidermal cysts of the testis.

The management of dermoid cysts of the testis is either by inguinal orchidectomy or conservative surgery. Inguinal orchidectomy was performed in this child because the whole testis had been replaced by the cyst. However, in a prepubertal child, the incidence of benign testicular lesions is high, and associated intratubular germ cell neoplasia is absent and, therefore, testicular-sparing surgery may be considered.<sup>6,9,10</sup> With a conservative procedure, the principles of testicular cancer surgery should be applied. These children should be explored through a high inguinal incision, and a vascular clamp applied to the spermatic cord at the internal inguinal ring. The testis is then mobilized and delivered out of the scrotum and draped from the surrounding structures. Frozen section biopsy of the compressed testicular tissue and enucleated tumor should be performed before considering orchidectomy.

In conclusion, a prepubertal child in whom a dermoid

cyst of the testis is considered after clinical, US and biochemical investigations should have a frozen section performed first. If the diagnosis is a dermoid cyst, then testis-sparing surgery such as enucleation should be attempted if possible, before considering orchidectomy.

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