

## Dermoid Cyst of Testis in a 56 Years Old Man- A Rare Case

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**Abstract:** Dermoid cyst is a rare tumor of the testis with less than 20 previously reported cases. It is more commonly observed in ovary. A 56 years old male patient presented with a non tender, soft cystic to firm right testicular mass of eight months duration. Serum alpha fetoprotein, human chorionic gonadotrophin levels were within normal limits. Left testis was normal. Subsequently right orchidectomy was done. On gross examination the mass measured 7.4cm x 6.2cm x 5cm. Cut section showed near-total replacement of testicular architecture by a multiloculated cyst containing whitish pultaceous materials and tufts of hair. Microscopically, stratified squamous epithelial lining of skin, dermal adenexal structure, glandular tissues, fibro-adipose tissue, cartilage and bone were identified. Immature tissue or any other germ cell components or foci of intratubular germ cell neoplasia (ITGCNU) was not seen. The patient is asymptomatic in the two years follow up period. In most of the reports, the cyst tended to be diagnosed in a younger age group. This case is being reported because of its rarity especially in the older age group.

**Keywords:** Testis, dermoid cyst, germ cell tumor, mature cystic teratoma.

### I. Introduction

Dermoid cyst of testis is an extremely rare tumor unlike its ovarian counterpart where it is common. Less than 20 cases of testicular dermoid cysts have been reported.<sup>[1]</sup> 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 teratomas.<sup>[2]</sup> In most of the reports, the cyst tended to be diagnosed in a younger age group. Here, we report a dermoid cyst of the testis in a 56-year-old man.

### II. Case Report

A 56 year old male patient presented with a painless right testicular mass of eight months duration. There was no history of trauma or infection. On examination, the mass was non-tender, smooth surfaced, and varying in consistency (soft cystic to firm). Ultrasonography of right testis revealed a 5.6cm x 4.8 cm well defined cystic SOL containing echogenic fluid material with multiple linear echogenic strands and multiple floating hyperechoic solid tissues within it.[Figures 1A, 1B] Left testis was normal on examination and ultrasonography. Serum alpha fetoprotein, human chorionic gonadotrophin levels were within normal limits. Subsequently, the patient underwent right inguinal orchidectomy. Postoperative recovery was uneventful. On macroscopic examination the testicular mass measured 7.4cm x 6.2cm x 5cm. On cut section, there was near-total replacement of testicular architecture by a multiloculated cyst containing whitish pultaceous materials and tufts of hair.[Figures 1C, 1D] Histology revealed obliteration of testicular architecture by a cystic lesion with inner stratified squamous epithelial lining of skin, pilosebaceous apparatus, hair follicles, luminal lamellar keratin, fibroadipose tissues, glandular tissues, cartilage and bone.[Figures 2A, 2B, 2C] Serial sectioning and meticulous evaluation did not reveal any immature tissue, any other germ cell components or foci of intratubular germ cell neoplasia (ITGCNU). No cytologic atypia or apparent mitotic activity was evident. Based on these findings a diagnosis of dermoid cyst of the testis was made. The patient is symptom free in the 2 years follow-up period.

### III. Discussion

Teratomas are tumors composed of several types of tissue representing different germinal layers (endoderm, mesoderm and ectoderm). They represent 38% of testicular germ cell tumors in infants and children and 47% in adults.<sup>[3]</sup> Teratomas are classified into three histological subtypes: mature teratoma, immature teratoma, and teratoma with malignant transformation.<sup>[4]</sup> Mature teratomas are composed of benign well-differentiated structures derived from the ectoderm, endoderm, or mesoderm. Mature teratoma is a common component of mixed GCTs. However, its pure form is rare and constitutes only 2% to 3% of all testicular GCTs. It occurs most commonly in the first and second decades of life.<sup>[5]</sup>

Testicular dermoid cyst is a specialized, benign form of cystic teratoma that is analogous to the common ovarian tumor. It is rare, with less than 20 cases reported.<sup>[1]</sup> It is controversial whether the rare dermoid cyst of the testis should be classified as a variant of mature teratoma or separately.<sup>[5]</sup> Although dermoid cysts are commonly referred to as mature cystic teratomas or benign cystic teratomas, Mostofi et al, suggest that they should be labeled as dermoid.<sup>[3]</sup> Most have been in young men who presented with testicular masses, but an occasional example has been reported in a child.<sup>[1,6]</sup> The spectrum of findings is also ill-defined, as is the relationship of dermoid cyst to intratubular germ cell neoplasia of the unclassified type (ITGCNU)<sup>[5]</sup> Ulbright and Srigley reported their findings in five testicular dermoid cysts that occurred in patients from 17 to 42 years of age. This study supports that dermoid cyst of testis should be categorized separately from mature testicular teratoma because of the malignant nature of the latter in postpubertal patients. It also supports that dermoid cyst may have noncutaneous teratomatous elements and that an important criterion for its diagnosis is the absence of ITGCNU.<sup>[7]</sup> Meticulous evaluation in our case did not reveal any focus of ITGCNU.

There are two pathways for testicular teratomas in postpubertal patients - the more common being through intratubular germ cell neoplasia and the less common one, taken by dermoid cyst, is by direct transformation from a nonmalignant germ cell line.<sup>[7]</sup> Epidermoid cyst is histologically composed of a cyst lined at least in part by keratinizing squamous epithelium lacking skin appendages and is not considered to be a teratoma<sup>[5]</sup>

In a child or adult with a painless testicular mass which has not shown progressive enlargement, possibility of dermoid cyst should be considered. The differential diagnosis includes benign lesions such as epidermal cyst, simple cyst, and malignant tumors of the testis with secondary degenerative changes.<sup>[8]</sup>

Dermoid cyst of testis shows predominance of one or more cysts lined by keratinizing squamous epithelium with skin appendages, with or without small areas of other teratomatous elements.<sup>[1]</sup>

When dermoid cyst contains predominantly ectodermal derivatives, it needs to be differentiated from epidermoid cyst that contains only stratified squamous epithelial lining with luminal lamellar keratin without the presence of adnexa unlike that of dermoid cyst.<sup>[8]</sup> Dermoid cysts are less common than epidermoid cysts, with only few cases reported in literature.<sup>[6,9,10,11]</sup>

The tumor markers ( $\alpha$ -fetoprotein and  $\beta$ -human chorionic gonadotrophin) done to assess presence of other germ cell neoplastic components are negative in a dermoid cyst as was seen in our case.

In all reported cases of testicular dermoid cysts, local excision, enucleation, or orchiectomy have been curative, with no patient developing a metastatic germ cell tumor.<sup>[8]</sup>

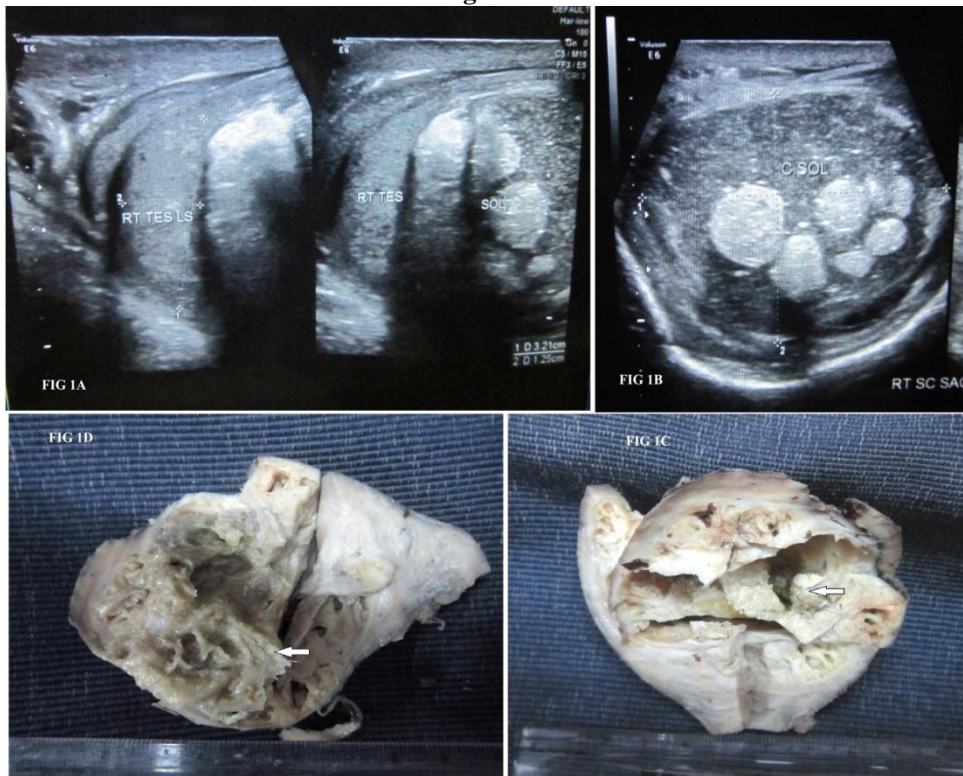
If the possibility of dermoid cyst is considered after clinical, ultrasound, and biochemical investigations in a prepubertal child or younger individuals, a frozen section should be performed first. If the diagnosis is confirmed to be dermoid cyst, then testis-sparing surgery such as enucleation should be attempted if feasible, before considering orchidectomy.<sup>[2]</sup>

This case is being reported because of its rarity, especially in the older age group.

## References

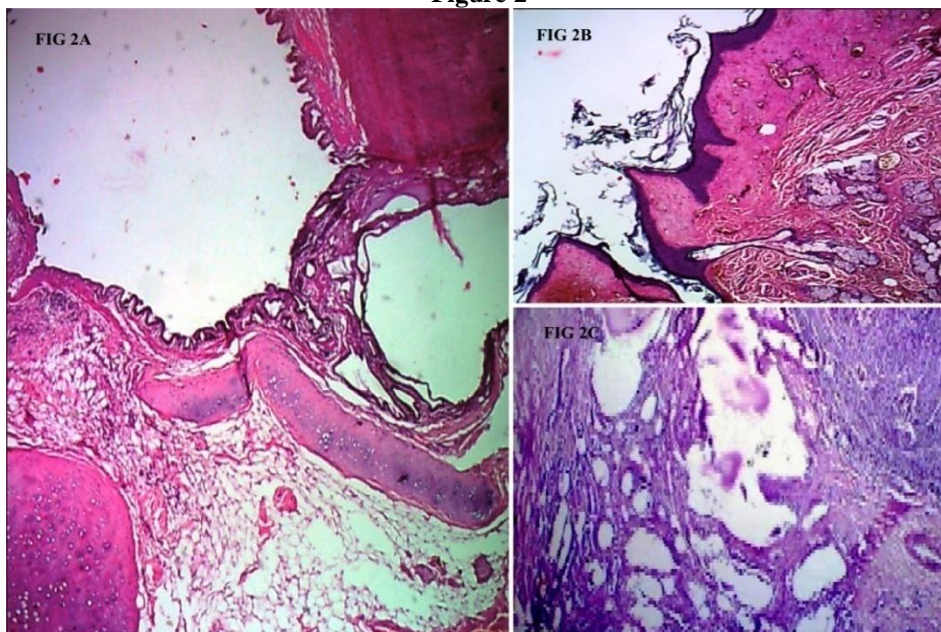
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**Figure 1**



**Figure 1:** Figure 1A, 1B Ultrasonography- Well defined cystic SOL containing echogenic fluid material with multiple linear echogenic strands and multiple floating hyperechoic solid tissues within it ; Figure 1C, 1D Gross examination- testicular mass on cut section shows near total replacement of architecture by a multiloculated cyst containing whitish pulvaceous materials and tufts of hair.

**Figure 2**



**Legends To Figure:**

**Figure 2:** Microscopy- Well differentiated mature tissue types consisting of stratified squamous epithelial lining of skin, dermal adenexal structures (figure: 1B; H&E 4X), glandular tissues (figure: 1C; H&E 10X), cartilage, bone and adipose tissues (figure: 1A; H&E 4X) were identified .