

## PRE-PUBERTAL TESTICULAR DERMOID CYST TREATED WITH CONSERVATIVE SURGERY

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### ABSTRACT

We present a case of testicular dermoid cyst that was treated with transinguinal excision of the testicular cyst with preservation of the healthy testicular parenchyma. We have reviewed the literature for clinical features and therapeutic approach in benign cystic tumors in the pre-pubertal testis.

**Key words:** testis; benign neoplasms; dermoid cyst; infant  
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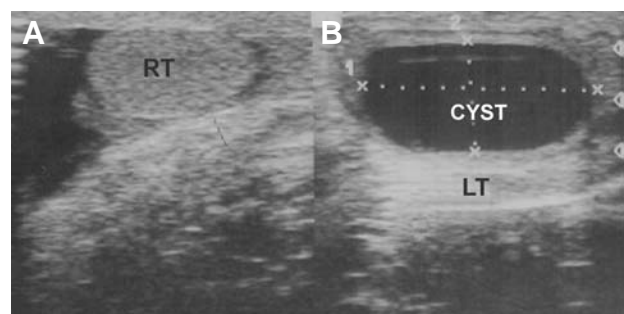
### INTRODUCTION

The most common testicular tumors in children are teratomas with a predominance of benign lesions. Simple cysts and dermoid cysts are rare but uniformly benign, thus enabling surgery with gonadic preservation. It is important to recognize their clinical and radiological features so that the selected therapy implies minimal sequelae. We present one case of testicular dermoid tumor in an infant, which was surgically treated and with preservation of the healthy ipsilateral testicular parenchyma.

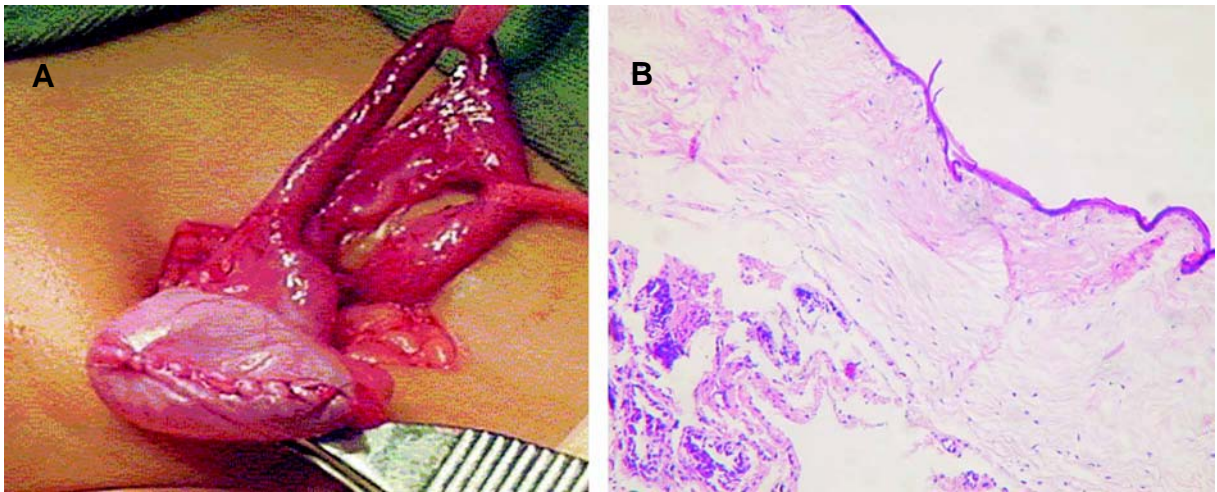
### MATERIALS AND METHODS

A 5-month old patient was brought to our service for evaluating an increase in scrotal volume that had been perceived some months earlier. He presented normal male genitalia with increased volume of the left gland, which was painless and regular with no transillumination. Ultrasound revealed a left testicular cyst measuring 23 mm at its maximal diameter and a well-defined and regular wall with no calcification, suggesting it was benign (Figure-1). The patient returned when he was 10 months old, maintaining the same clinical picture, with no increase in

the lesion. A new ultrasound demonstrated a left testicular cyst measuring 17 mm at its maximal diameter that was causing parenchymal compression and atrophy. The affected testis was then explored by inguinal access. We verified an increased volume of the gland resulting from an ovoid cystic lesion, which was entirely intratesticular (Figure-2). The lesion was regular and featured thickened walls and smooth internal and external contours, and it measured 20 mm at its maximal diameter, and was enucleated through compression of the spermatic cord using a longitudinal anterior testicular incision with preservation of the surrounding testicular parenchyma (Figure-2). The histological examination described a cystic structure



**Figure 1** – Preoperative ultrasound assessment. A) Normal right testis (RT). B) Cyst and compressed left testis (LT).



**Figure 2** – A) Aspect of gonad following reconstruction. B) Histological examination showing epithelium and support connective tissue of the cyst amidst the testicular parenchyma, compatible with dermoid cyst.

with typical squamous epithelium and fibrous connective external wall amidst normal testicular parenchyma, compatible with a dermoid cyst (Figure-2). After an 18-month follow-up, the patient remains asymptomatic, the operated testis is topical and normal on palpation, with similar size to the contralateral testis and normal parenchyma on ultrasound (maximum diameter: 16 mm in right testis and 20 mm in left testis).

## COMMENTS

Testicular tumors are uncommon in pediatrics (1 case in 100,000 individuals per year), with incidence peaks in infants and teenagers, and less than 1% of cases are benign cysts (1). In infants, teratomas predominate. The literature mentions approximately 300 cases of testicular dermoid cysts occurring mostly in young adults (only 23 cases in children) (2). Recently, Metcalfe et al. (3) have questioned these data, presenting 10% dermoid cysts among testicular tumors in children aged up to 16 years in an institutional sample of 51 lesions over 18 years.

Simple and dermoid testicular tumors clinically manifest as an increase in scrotal volume and painless scrotal mass. Ultrasound treatments of testicular dermoid cysts reveal typical properties, such as regular cystic lesions whose content has variable

sonographic features. The lesion shows echogenic thickened walls, which can be viewed as internal echoes with no acoustic enhancement, or as “onion-skin” patterns caused by the accumulation of multiple layers of keratin debris, which are avascular on Doppler image. Possibly the presentation is less typical in younger patients due to the shorter progression time, with less marked internal tumoral desquamation which, as seen in this case, makes differential diagnosis with simple cysts difficult since the latter are characterized by thin walls and anechoic regular content. Teratomas, which are typically solid-cystic, can be exclusively cystic, and complex lesions with multiple septations strongly suggest teratoma. Surgery is indicated in cases where there is diagnostic uncertainty involving malignant tumors and for resolving or preventing atrophy due to secondary compression by the cyst.

The traditional surgery for testicular tumors is transinguinal orchiectomy. However, since the ‘90s, the predominance of benign features among cystic testicular tumors in children and among pre-pubertal testicular teratomas, as well as the demonstration of cases with successful gonadic preservation and absence of malignancy in peritumor biopsies from testicular dermoid cysts, have led several authors to indicate simple inguinal enucleation of the tumor with compression of the spermatic cord until its benign

features have been confirmed (3). Histopathological criteria include entirely intraparenchymal lesion with keratin debris, fibrous external wall with squamous epithelial cells on the inside, no evidence of mesodermal or endodermal tissue, and no abnormalities in the remaining testicular parenchyma. The albuginea layer is sutured and the gonad is returned to the scrotum. Some authors suggest that biopsies should be made on adjacent parenchymal areas in order to exclude teratomatous elements or "in situ" testicular carcinoma. When considering the uniformly favorable results of simple enucleation, the use of the inguinal access has been questioned since it is esthetically inferior, and transscrotal surgery has been preferred. The limited experience, the possibility of diagnostic error and the difficulty of analyzing the alpha-fetoprotein values in children during the first semester of life have, for safety and legal reasons, maintained the transinguinal access as the rule so far.

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