Testicular cysts: Management and literature review

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Simple testicular cysts are extremely rare; only 20 cases have been reported in the literature. Sites include the tunica albuginea, tunica vaginalis, and testicular epidermis. Conservative enucleation is an effective treatment for these lesions once ultrasound examination establishes that the mass is cystic. Such Enucleation salvages testicular tissue. In the cases discussed, two patients were initially evaluated for vague testicular discomfort and one patient for male infertility. All were subsequently found to have benign testicular cysts. All the cysts were excised, and all patients remain disease-free. Included is a case series report of simple testicular cysts and a review of the literature.

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The occurrence of simple testicular cysts is extremely rare, with only 20 cases having been reported in the literature. Among the three patients who were found to have benign testicular cysts, initial evaluation for two was for vague testicular discomfort and for one, for male infertility.

Report of cases

Case 1
A 54-year-old patient complained of having mild left testicular discomfort for several months and a palpable mass in the left hemiscrotum. He denied having any other symptoms, including weight loss, decreased urinary stream, or dysuria. The findings of the remainder of his medical and surgical history are unremarkable. On physical examination, the patient was found to have an enlarged left testicle, which was nontender to palpation. Results of laboratory studies included urinalysis showing no abnormality and normal levels of serum tumor markers. Testicular ultrasound examination showed a 2.3 x 3.4 cm cyst that was surrounded in its entirety by testicular tissue and did not communicate with extratesticular tissue (Figure). The patient underwent a radical orchidectomy and the histopathologic examination revealed a simple, benign testicular cyst.

Case 2
A 76-year-old patient was referred for increasing swelling in his left hemiscrotum over several months. He denied having any testicular pain or voiding difficulties. No history of trauma was reported. Results of urinalysis and assay of serum tumor markers were normal. On examination, no discrete masses were palpated and the testicle was nontender. No inguinal masses or adenopathy were present. An ultrasound examination revealed an intratesticular cyst. The patient underwent a simple excision, and the histopathologic examination revealed a simple benign cyst.

Case 3
A 35-year-old patient was being seen for male infertility for the past 7 years. He reported no history of an undescended testicle or trauma. His medical and surgical history was otherwise unremarkable. Results of urinalysis and a serum tumor marker assay were normal. Examination revealed a hypovascular and cystic mass. The patient underwent an orchidectomy, and the pathologic examination revealed an epidermoid cyst, with no evidence of malignancy.

Discussion
Cysts found in the testis include cysts of the tunica albuginea, testicular epidermis, and simple intratesticular cysts. Tunica albuginea cysts are rare. Several researchers suggest possible etiologies of infection and trauma with hemorrhage. Embryologically, these cysts probably originate from Mullerian or Wolffian remnants of mesothelial tissue. Generally asymptomatic, they are discovered incidentally. They appear as firm nodular masses on the anterolateral surface of the testis. In the past, radical orchidectomy was the treatment of choice because of the difficulty in distinguishing these rare lesions from malignant tumors of the testis. Newer data show simple excision is considered sufficient once ultrasound examination has established that the mass is cystic. Ultrasonic characteristics of simple benign cysts, including a cystic mass, are an anechoic lesion with enhancement of the posterior wall. The lesion should be uniform in contour and contain a sharp wall. Tumors generally reveal decreased echogenicity within the testicle, which is usually enlarged. Using the foregoing criteria, Arger and associates reported that ultrasound correlated reliably with tumors in 13 testicular masses. One false-negative diagnosis occurred during examination and one false-positive diagnosis occurred during surgery. These represent an 8% rate of false diagnosis in each category.
Epidermoid cysts account for 1% to 3% of all testicular neoplasms, making them the most common type of intratesticular cyst. Usually asymptomatic, these cysts are typically discovered incidentally, although symptoms of pain or progressive enlargement of the testicle may occur. Completely surrounded by testicular tissue and spherical, these tumors are usually seen in young adults or prepubertal boys. Microscopic inspection reveals a stratified squamous epithelium that contributes to a keratin-filled lumen. These tumors can be distinguished from teratomas histologically by the absence of other mesodermal or endodermal elements.

Testicular ultrasound examination is most useful in the diagnosis, demonstrating a hyperechoic rim with internal echoes. Other studies suggest that these lesions may be differentiated from germ cell tumors by their well-circumscribed capsule and solid central core. Although radical orchietomy was performed in the past, newer diagnostic techniques support enucleation to salvage testicular tissue. No relapses have occurred in any patient treated with enucleation.

Simple testicular cysts are extremely rare; only 20 cases have been reported. These cysts are usually small and completely surrounded by testicular tissue. Microscopic examination shows cuboidal epithelial cells with minimal cellular debris. The cyst may result from trauma or secretion of intratesticular epithelial cells. In the past, difficulty in distinguishing malignant from benign lesions made radical orchietomy the treatment of choice.

Because simple testicular cysts are true cysts, expectant management with biannual ultrasonography is sufficient, although removal may be required when a cyst is large or symptomatic. Conservative enucleation is an effective treatment for these lesions. We found no reports of recurrence after conservative enucleation in the literature.

**Comment**

Simple, benign testicular cysts are an uncommon finding. These cysts include those of the tunica albuginea, tunica vaginalis, and testicular epidermis. Excision of these benign lesions is considered sufficient. Epidermoid cysts are considered to be true germ cell neoplasms, and radical orchietomy was performed in the past. However, newer data support enucleation of the cyst to salvage testicular tissue.

**References**