CASE REPORT

Benign paratesticular Schwannoma

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Scrotal masses are common findings on genitourinary exam. The majority of these masses are benign and can be identified via history and physical exam alone. Question as to the origin of these masses merits additional evaluation that typically consists of an imaging study (e.g., ultrasound) and possibly serum tumor markers (e.g., HCG and AFP). In the end, surgical exploration may be necessary. Herein, the authors describe a rare case of benign paratesticular Schwannoma and discuss the clinical presentation and treatment of scrotal masses.

Key Words: neurilemmoma, scrotum, testis, testicular neoplasms

Introduction

Scrotal masses are frequently encountered in urologic practice. After obtaining a thorough history and performing a physical exam, many of these masses can be identified and require no further work up. If uncertainty persists as to the etiology of a mass, most practitioners opt to obtain a scrotal ultrasound for better characterization. The vast majority of these masses are benign lesions (e.g., epididymal cysts) or the result of inflammatory conditions (e.g., epididymo-orchitis). Treatment, whether surgical or expectant, depends on the clinical presentation, the anatomic location of the lesion, and the presence of infection, which collectively establishes the ultimate risk to the patient. Herein, we describe the presentation and

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management of a rare scrotal mass — a benign paratesticular Schwannoma (neurilemmoma).

Case report

A 56 year old man was referred for evaluation of a left scrotal mass that had been slowly increasing in size. The patient denied any history of scrotal trauma, voiding difficulty, genitourinary disease or weight loss. He had no recent fevers or chills, and his serum white blood cell count and urinalysis were within normal limits. On examination, no superficial lymph nodes were palpable, and there were no cutaneous neurofibromas or café au lait spots present. The patient had normal testes bilaterally and no evident hernias. Along the course of the spermatic cord, cephalad to the left testicle and epididymis, there was a firm, nontender mass. This mass was freely mobile and did not transilluminate. Scrotal ultrasound revealed a 2.2 cm heterogeneous nodule superior and lateral to the upper pole of the testicle. In addition, there was a 2.2 cm by 2.4 cm by 1.1 cm crescentic zone of decreased echogenicity along the posterior aspect of the testicle with associated cystic changes and small calcifications Figure 1. Serum alpha fetal protein (AFP) [3.47 ng/ml (normal 0-8.7 ng/ml)] and beta human chorionic gonadotropin (HCG) [<5.0 mIU/ml (normal 0-10 mIU/ml)] were within normal limits.

Despite normal testicular tumor marker levels, the abnormal appearance of the testicle on ultrasound was concerning for a possible malignancy. This hypoechoic lesion in conjunction with the presence of a significant paratesticular mass of unknown malignant potential made surgical exploration a necessity.

The patient elected to undergo a left inguinal exploration which was performed via a transverse inguinal incision. Intraoperatively, there were multiple small testicular cysts, but the testicle otherwise appeared normal. There was a distal cord lipoma and a normal epididymis. Superior and lateral to the epididymis, there was a firm, mobile, well-circumscribed mass. The decision was made to proceed with a radical orchiectomy.

The resected specimen consisted of an unremarkable spermatic cord and testis, with cystic changes, but no evidence of malignancy. A 1.8 cm x 1.0 cm x 1.0 cm firm, mobile, encapsulated mass was located lateral to the epididymis and loosely attached to it by connective tissue. Grossly, the cut surface had a light yellow-white coloration, was firm and rubbery and had a whorled tissue pattern. Histologically, the tumor had a smooth surface with a thin, well-formed fibrous capsule, and was composed of two histological patterns which were characteristic of conventional Schwannomas Figure 2. The first consisted of compacted, elongated cells with tapered, spindle-shaped nuclei arranged in broad bundles and

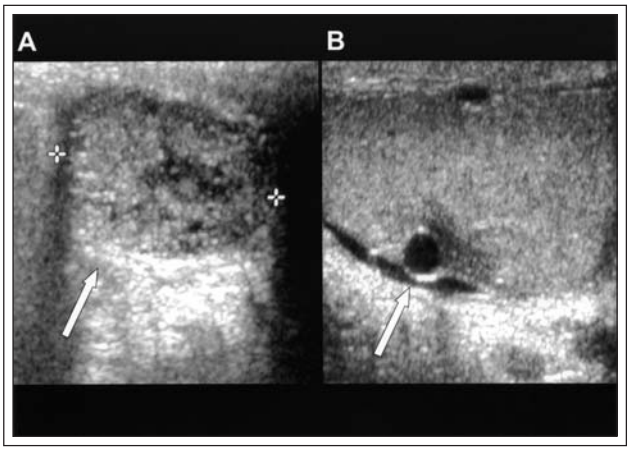

Figure 1. Scrotal Ultrasound. (A) 2.2 cm heterogeneous nodule, separate from the testicle and found to be a paratesticular Schwannoma. (B) Crescentic zone of decreased echogenicity along the posterior aspect of the testicle with cystic changes and calcifications, determined to be benign testicular tissue by pathology.

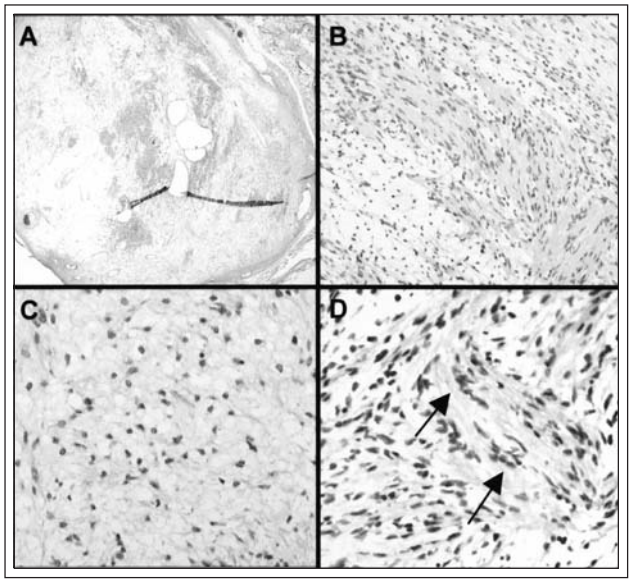

Figure 2. Paratesticular Schwannoma. (A) Solid, well-circumscribed neoplasm with fibrous capsule. (10X) (B) Antoni A and B histological patterns. (40X) (C) Antoni B regions consist of a loose meshwork of cells. (100X) (D) Verocay bodies in Antoni A region. (100x) (Hematoxylin and Eosin staining).

demonstrating rows of palisading nuclei (Antoni A). The second pattern consisted of a loose meshwork of cells with round to oval nuclei and delicate processes (Antoni B). Immunostaining for S-100 protein was uniformly positive, indicating that the cells comprising this mass were of neural crest origin. There was neither nuclear pleomorphism nor mitotic figures that would indicate malignancy. The patient had an uneventful postoperative course and has had no recurrence after 12 months of follow up.

Discussion

The vast majority of scrotal masses are benign. Benign lesions tend to transilluminate, are freely mobile, and are separate from the testicle, whereas malignant masses often do not transilluminate, are fixed to the testicle, are solid and do not respond to antibiotics. The most common scrotal lesions are hydroceles, spermatoceles, varicoceles, testicular torsions, and inflammatory conditions, such as epididymitis. These diagnoses are often made clinically by thorough history and physical examination alone. In one series of 278 scrotal masses, inflammatory conditions and hydroceles occurred in 48% and 24% of cases, respectively, thereby accounting for the majority of scrotal masses. Torsion of a testicle or of a testicular appendage was less prevalent, occurring in only 9% of cases.[1] Of note, 15 to 20% of testicular cancers will present as epididymitis.[2] Therefore, it is crucial to follow patients diagnosed with epididymitis and initiate further diagnostic evaluation should the testis not revert to its normal consistency after adequate antimicrobial therapy.

Though less often malignant than testis tumors, common variants of solid paratesticular lesions include lipomas, adenomatoid tumors, epididymal cystadenomas and mesenchymal sarcomas. Adenomatoid tumors are the most common paratesticular solid masses, comprising 32% of such lesions and, as with lipomas and cystadenomas, uniformly behave in a benign fashion. [3] In contradistinction, sarcomas require radical surgical extirpation, including orchiectomy with high cord ligation, wide local excision of the lesion and adjuvant radiation or chemotherapy.[4] Excluding cord lipomas, Beccia *et al*. reported that 56% of cord tumors and 25% of epididymal tumors are malignant.[5] Therefore, if a benign etiology cannot be established, solid extratesticular masses should be explored and removed. Importantly, any child with an extra-testicular mass should undergo inguinal exploration because of the high incidence of paratesticular rhabdomyosarcoma in this population.[6] The remainder of paratesticular neoplasms are rare, and proper treatment of these lesions is determined by anatomic location and clinical context.[7]

Schwannomas are benign, indolent tumors of the neural-supportive Schwann cells that typically occur in adulthood and affect men and women equally. Most commonly, they occur as solitary encapsulated subcutaneous tumors in an otherwise normal individual.[8] They can develop anywhere within the central or peripheral nervous systems, arising most often in the head, neck, posterior mediastinum, retroperitoneum, and on flexor surfaces of the extremities.[9] They can occur as a solitary lesion or as part of a systemic Schwannomatosis disorder, such as neurofibromatosis.[8]

Benign paratesticular Schwannoma represents an extremely rare form of paratesticular mass that has infrequently been described in the literature .[7, 10] Although local recurrence can follow incomplete resection, malignant degeneration is extremely rare.[9] The manifestation of this paratesticular tumor appears to be sporadic and comprises an interesting and poorly characterized variant of those lesions more frequently seen in practice. □

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