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Oncology

Partial Orchiectomy for the Treatment of a Benign Sclerosing Sertoli Cell Tumor: A Report of a Rare Tumor in Association With Testicular Microlithiasis

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ABSTRACT

The diagnosis of a testicular sclerosing Sertoli cell tumor is rare. Approximately 17 cases have been previously described in the literature worldwide. We present a case and review the evaluation and surgical management of a sclerosing Sertoli cell tumor presenting in a 26 year-old African-American adult, in association with testicular microlithiasis and oligospermia. Imaging techniques and the pathological assessment will be reviewed.

Introduction

A high level of suspicion is required when any young adult male presents to the office with a history of "testicular pain" or "testicular mass." The initial evaluation would include a thorough history and physical exam, pertinent laboratory testing and/or imaging studies. Surgical exploration may be indicated. Germ cell tumors comprise 90–95% of all primary testicular tumors, and, as such, non-germ cell tumors are less common. A case of a 26 year-old African-American male patient diagnosed with a sclerosing Sertoli cell tumor of the left testis is presented.

Case presentation

A referral was made for evaluation of a patient with "testicular pain" and abnormal findings noted on a scrotal ultrasound. A 26 year-old African-American patient presented with left orchialgia ongoing for several weeks. He denied any history of trauma, urinary tract infections, at risk sexual behavior, urolithiasis or a history of cryptorchidism. He did report some minor urinary frequency. His physical exam was unremarkable. There was no gynecomastia, lymphadenopathy, or palpable testicular masses. A scrotal ultrasound had been performed, revealing bilateral testicular microlithiasis and a "small mass or lesion measuring 6 mm" in the superior pole of the left testicle. No suspicious lesions were identified in the right testicle. Serum tumor markers (lactic acid dehydrogenase 168 U/L, alpha-fetoprotein 6.9 ng/mL and serum beta human chorionic gonadotropin <2.0 mIU/mL) were within normal range. His basic metabolic panel was normal. A chest radiograph showed no evidence of metastasis. A confirmatory MRI without and with contrast was ordered and revealed a small 6–7 mm, well-circumscribed, lobular lesion of decreased signal intensity on T2-weighted images located in the superior, medial aspect of the left testicle (Fig. 1). No significant contrast enhancement was noted, and no obvious tunica penetration was visualized. Incidental images of the retroperitoneum revealed no obvious lymphadenopathy. A differential diagnosis included a germ cell testicular tumor (GCTT), a non-germ cell testicular tumor (NGCTT), and a metastatic tumor to the testicle. A pre-treatment semen analysis revealed oligoasthenospermia.

Management

A lengthy pre-operative discussion was had with the patient, and a thorough informed consent was obtained. A left scrotal exploration via an inguinal approach was planned, with consideration of either a partial orchiectomy versus a radical orchiectomy. The patient stressed the concern for possible future fertility. The patient was explored through a left inguinal incision under general anesthesia. The testis was mobilized from the gubernaculum and brought into the surgical field. Temporary hemostasis was achieved using a Penrose drain around the

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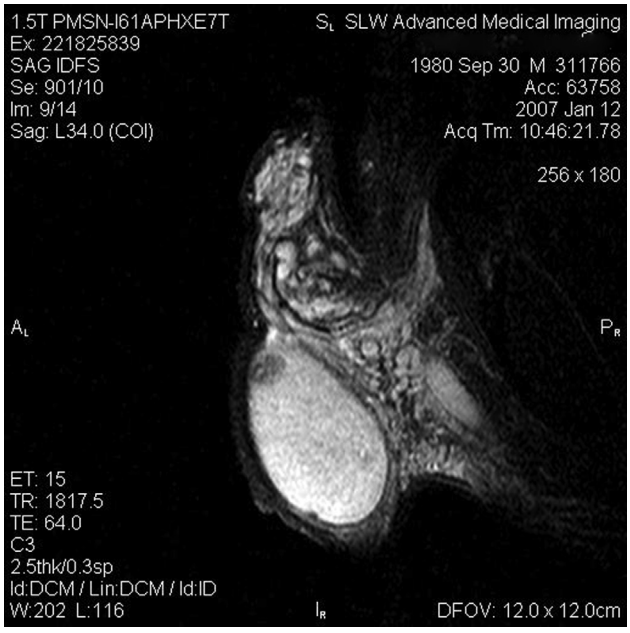

Figure 1. T2-weighted MRI image of superior pole lesion.

proximal cord. The tunica vaginalis was opened. The tunica albuginea was incised in the anterior midline below the epididymal head. The superior portion of the seminiferous tubules was bluntly mobilized, allowing incorporation of the suspected lesion seen on preoperative imaging with wide surgical margins. The specimen was immediately taken to pathology, where both surgeon and pathologist reviewed the slides. A wide margin was obtained around a small, definite solid lesion without the appearance of a germ cell neoplasm. A histological diagnosis of a benign sclerosing Sertoli cell tumor was determined, pending additional special staining. A decision was made to preserve the left testicle. Approximation and closure was performed. The patient recovered well, and was seen the following week for a post-operative evaluation and discussion.

Initial pathology revealed a 5 mm firm, whitish-tan nodule, without evidence of mitosis and consistent with a benign sclerosing Sertoli cell tumor. Surrounding normal seminiferous tubules were noted. A consultation was sent for additional staining. The tumor consisted of "nest and cords of cells set in a densely collagenous stroma" (Fig. 2). Small nuclei and clear cytoplasm was evident. Immunostains revealed diffuse positivity for vimentin (Fig. 3) and inhibin and negative staining for PLAP and keratin. According to the final pathology report, this "combination of features is diagnostic of a sclerosing Sertoli cell tumor."

Discussion

We present here a report of a rare non-germ cell testicular tumor. To our knowledge, approximately 18 cases of a sclerosing Sertoli cell tumor, including ours, have been described in both the English and non-English literature. First characterized by Zuckerberg et al,[1] 10 initial cases were reviewed and designated to be "sclerosing Sertoli cell tumors." Their original description in 1991 remains the initial report of the clinical and pathologic features typical of a sclerosing Sertoli cell tumor. Mean patient age was 34.6 years and ranged from 18 to 80 years. All tumors presented unilaterally. No excessive hormone production was evident in any patient. Pathologic findings were (1) small, well-demarcated tumors (0.4–1.5 cm), (2) yellow-white or tan coloration and (3) containment within the testicular

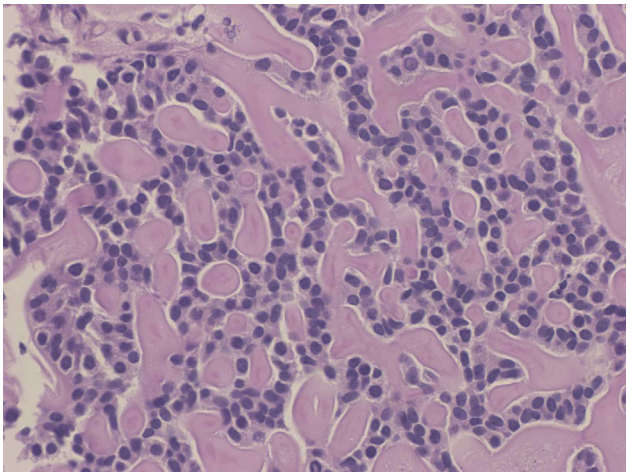

Figure 2. Microscopic pathologic analysis at ×400 with hematoxylin and eosin staining revealing nests and cords with dense collagenous stroma.

parenchyma. Histologic findings were described as "solid and hollow, simple and anastomosing tubules, large irregular aggregates, and thin cords of Sertoli cells in a prominent collagenous background." One patient had histologically malignant features, however, he died 5 years after diagnosis from cardiac disease without evidence of recurrence or metastasis. Other reports describe similar pathologic and histologic findings, and the malignant potential for sclerosing Sertoli cell tumors remains low.[2–4]

The tumor removed from our patient reveals similar pathologic findings, histologic characteristics and staining patterns. Bilateral testicular microlithiasis and an abnormal semen analysis are particularly noted in our patient. In reviewing the available literature, to our knowledge, we report the first patient diagnosed with a benign sclerosing Sertoli cell tumor presenting with bilateral testicular microlithiasis and an abnormal semen analysis. Given the low malignant potential of this lesion and our patient's abnormal pre-operative semen analysis, we propose a testicular-sparing approach for preservation of testicular function in face of potential future infertility concerns. Others have also suggested a testicular-sparing approach for small, incidental testicular lesions.[5] If an intra-operative pathological diagnosis of a benign tumor can be established, then a partial

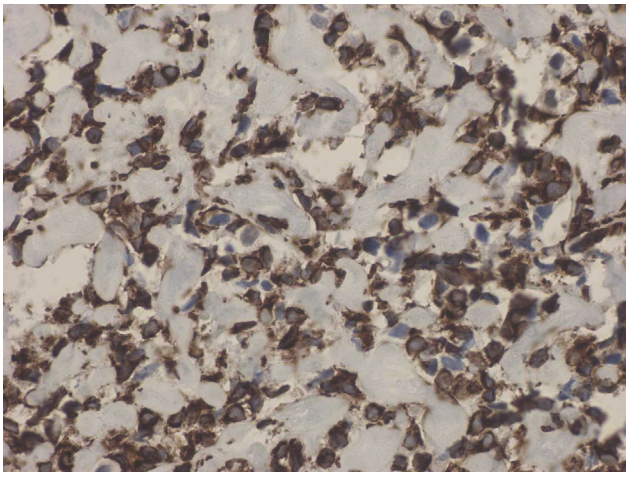

Figure 3. Microscopic pathologic analysis at ×400 with vimentin immunostaining revealing diffuse positivity.

orchiectomy remains a reasonable surgical treatment option. If a diagnosis remains in question, then a radical orchiectomy should remain the procedure of choice. To date, our patient has not demonstrated any evidence of disease recurrence at 10 months. This report should be added to the limited available literature for sclerosing Sertoli cell tumors.

Conflict of interest

None declared.

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