



DEPARTMENT OF PATHOLOGY

Case of the Week

Urogenital Pathology: Adenomatoid Tumor

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History

The patient is a 45-year-old African American male with a history of recent epididymitis and a persistent slow-growing testicular mass. A scrotal ultrasound revealed a 1.7 x 1.8 x 1.3 cm mass in the lower left testicular pole. The mass had both hypoechoic and solid characteristics without clear demarcation between the mass and the testes. Serum tumor markers were not performed prior to resection. He presents for excision of the lesion and possible radical orchiectomy.

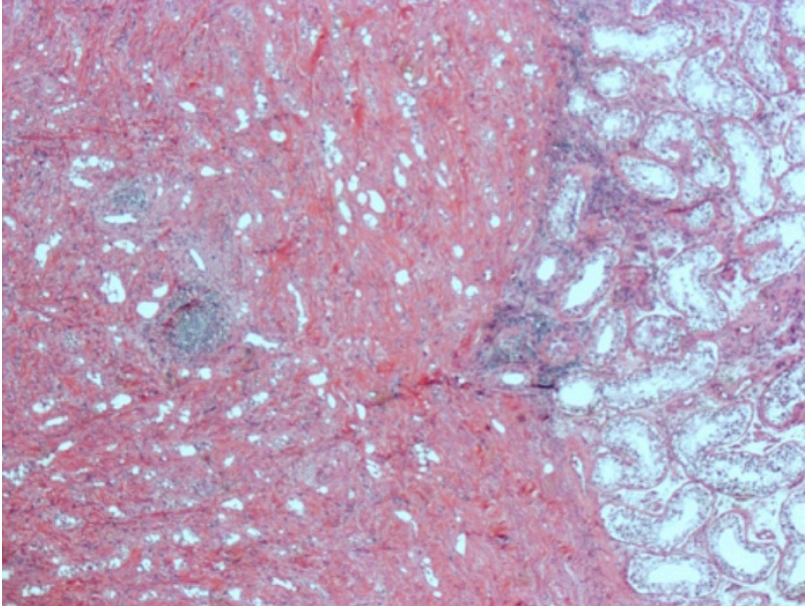


Figure 1: Testicular Mass The resection specimen shows a well demarcated mass consisting of variably sized tubules in dense fibroconnective stroma with scattered lymphoid aggregates. (H&E, 40X magnification)

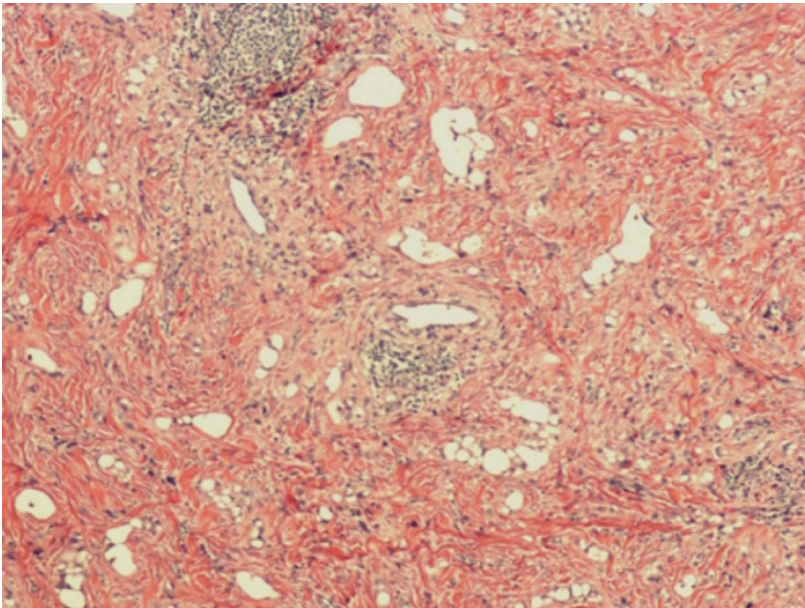


Figure 2: The tumor shows an irregular gland-like or cystic pattern. (H&E, 100X magnification)

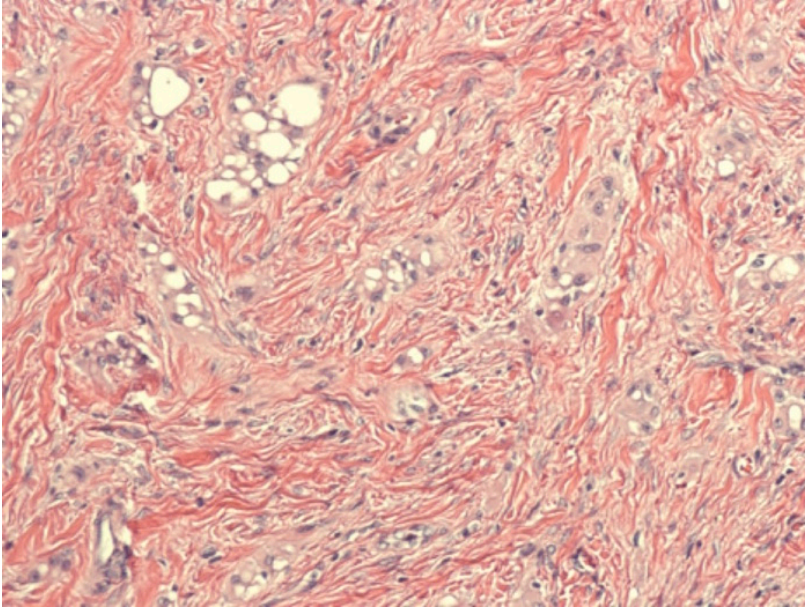
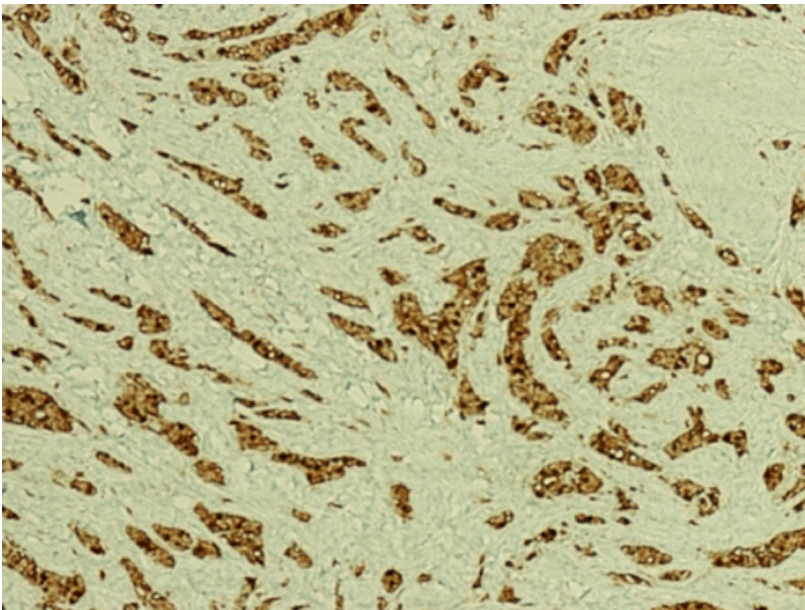


Figure 3: The tumor shows cuboidal and ovoid cells with prominent vacuolated cytoplasm. (H&E, 400X magnification)

Immunohistochemical Stains



The tumor cells show diffuse nuclear reactivity for Calretinin (Figure 4). The tumor cells exhibited a low proliferation index (Ki-67, data not shown).

Diagnosis

Adenomatoid Tumor

Discussion

Adenomatoid tumor of the testis is a distinct, benign neoplasm occurring in the male and female genital tract. The majority of these tumors are paratesticular, with the epididymis being the most common location. Occasional involvement of the testicular parenchyma has been observed. They typically occur in Caucasian males in the 3rd to 5th decade of life (1). Individuals typically present with a painless, slow-growing mass (<5 cm) with solid and hypoechoic characteristics on ultrasound (2). The gross examination typically shows a well-circumscribed, tan-white mass.

These neoplasms demonstrate a variety of growth patterns ranging from tubular to cystic or a cord-like infiltrative pattern. The stroma is often fibrotic and usually contains inflammatory cells, predominantly lymphocytes. The cellular shape is also variable, and prominent vacuolated cytoplasm can be seen. Additionally, tumor cells can exhibit signet ring morphology, mimicking signet ring carcinoma (3, 4)

The differential diagnosis includes malignant mesothelioma, sex cord-stromal tumor, testicular carcinoma and lymphoma. Immunohistochemical studies show reactivity for WT1, calretinin and AE1/AE3 (5). However, rare mitotic figures, mild cytologic atypia, low Ki67 index highlight the benign nature of the tumor. Immunohistochemical non-reactivity for Bep4, moc31, B72.3 and CD15 can be helpful in excluding carcinoma. Additionally, the tumor is negative for inhibin, excluding the diagnosis of sex cord stromal tumor. In our case, the combination of morphology, strong and diffuse reactivity for calretinin, and low Ki-67 index (less than 5%) clinched the diagnosis.

The mesothelial origin of this tumor has been confirmed by immunohistochemical and ultrastructural studies. On transmission electron microscopy, features of mesothelial cells (prominent desmosomes, and long microvilli) are observed.

The course for adenomatoid tumor of the testis is benign, and surgical resection is curative. In this case, the entire testes were removed out of concern for a malignant process.

References

1. Eble JN SG, Epstein JI, Sesterhenn IA. World Health Organization classification of Tumors. Pathology and Genetics of Tumour of the the Urinary System: IACR Press; Lyon 2004.
2. Park SB, Lee WC, Kim JK, et al. Imaging features of benign solid testicular and paratesticular lesions. Eur Radiol. 2011;21(10):2226-34.
3. Amin W, Parwani AV. Adenomatoid tumor of testis. Clin Med Pathol. 2009;2:17-22.

4. Sheng B, Zhang YP, Wei HH, Ma M, Nan X. Primary adenomatoid tumor of the testis: report of a case and review of literature. *Int J Clin Exp Pathol.* 2015;8(5):5914-8.

5. Moch H, Ohnacker H, Epper R, Gudat F, Mihatsch MJ. A new case of malignant mesothelioma of the tunica vaginalis testis. Immunohistochemistry in comparison with an adenomatoid tumor of the testis. *Pathol Res Pract.* 1994;190(4):400-4. Gynecologic