NYU Grossman Long Island School of Medicine

DEPARTMENT OF PATHOLOGY

Short Report in Pathology

Organ system: GU-Testis

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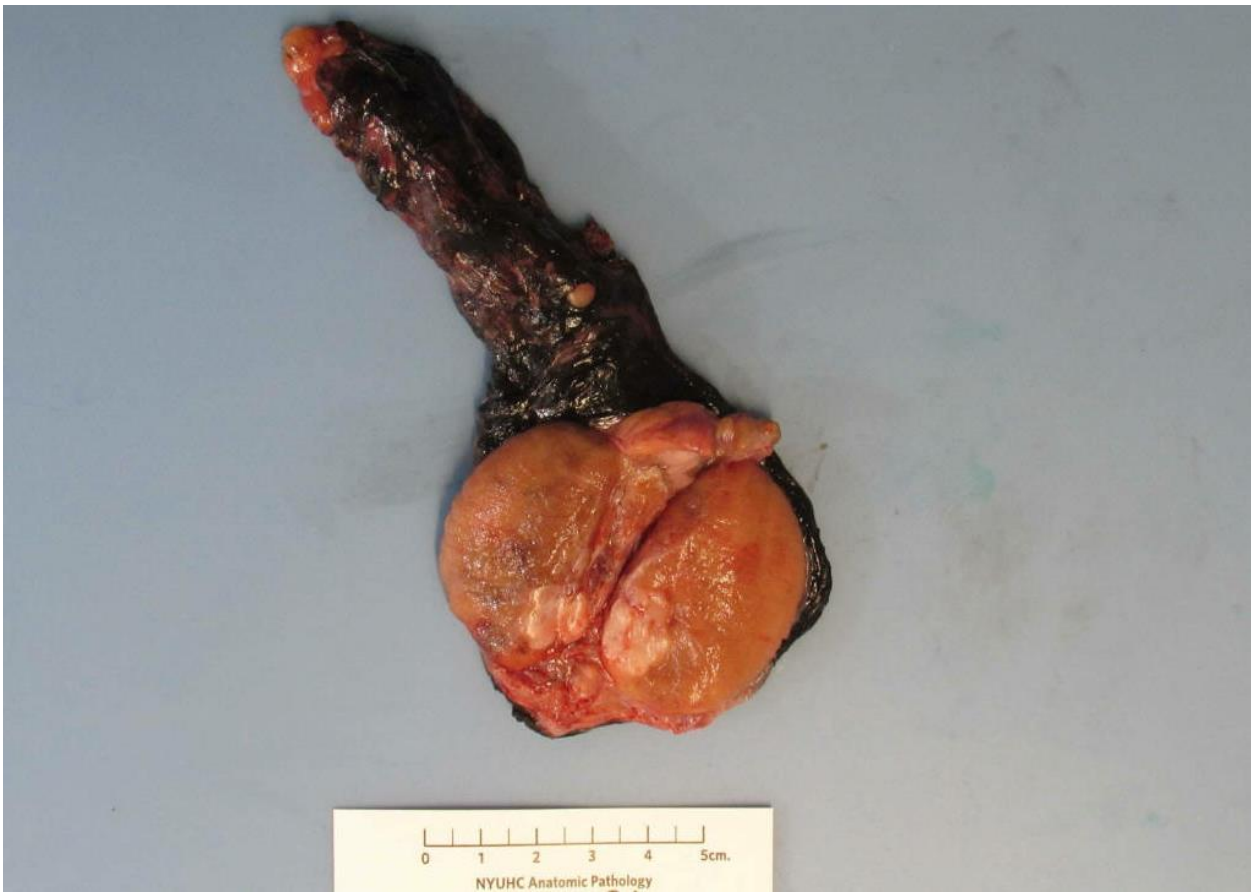
History:

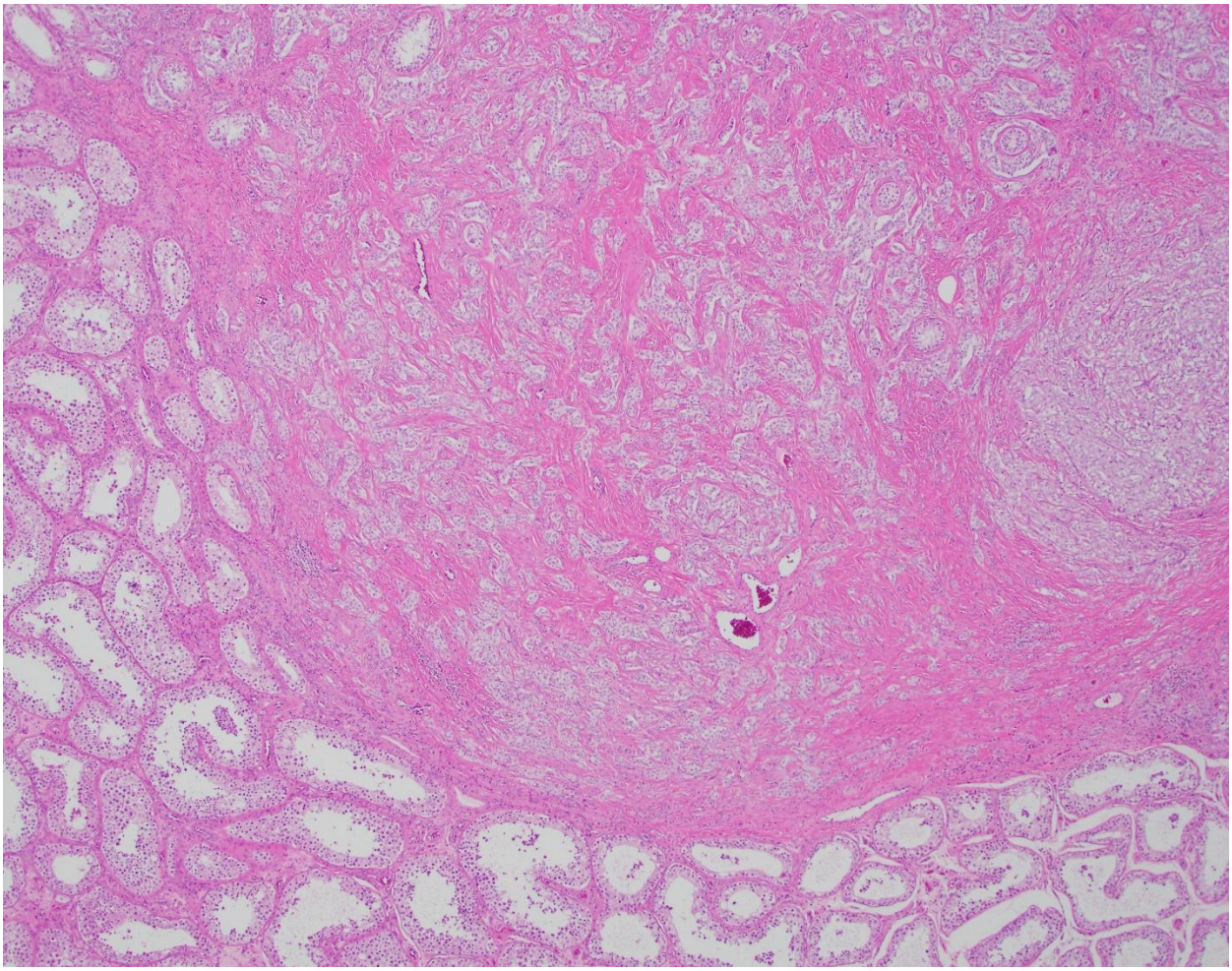
A 32-year-old male patient presented with a long standing one sided testicular pain and discomfort. Doppler ultrasound of the testis revealed a hypoechoic mass in the testis measuring 1.7 x 1.1 x 1.1 cm. Tumor markers were within the normal range. Patient underwent radical orchiectomy.

Gross image

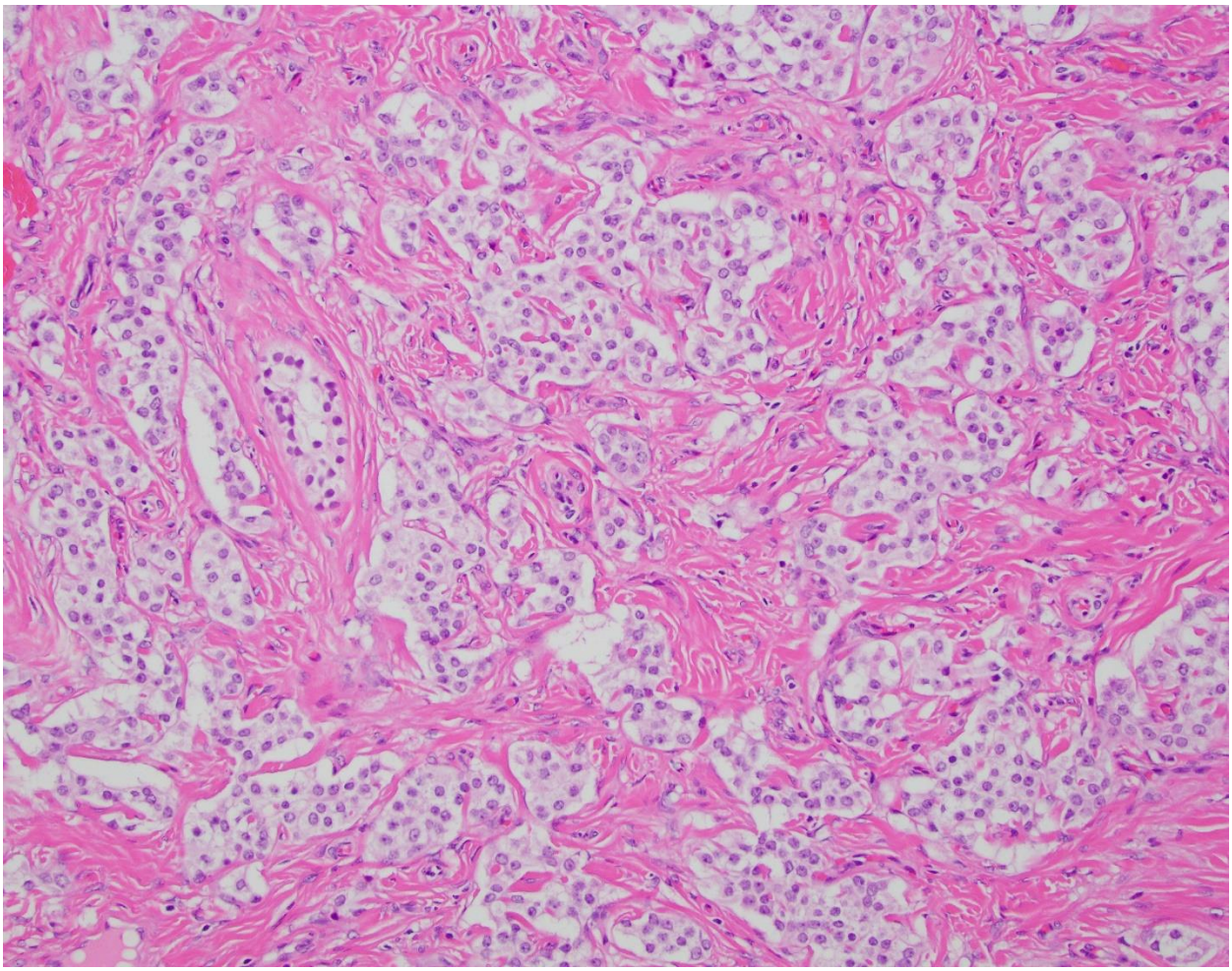


A 1.9 x 1.5 x 1.4 cm, well circumscribed, tan-white, firm mass which is grossly confined to testis.

Microscopic Images

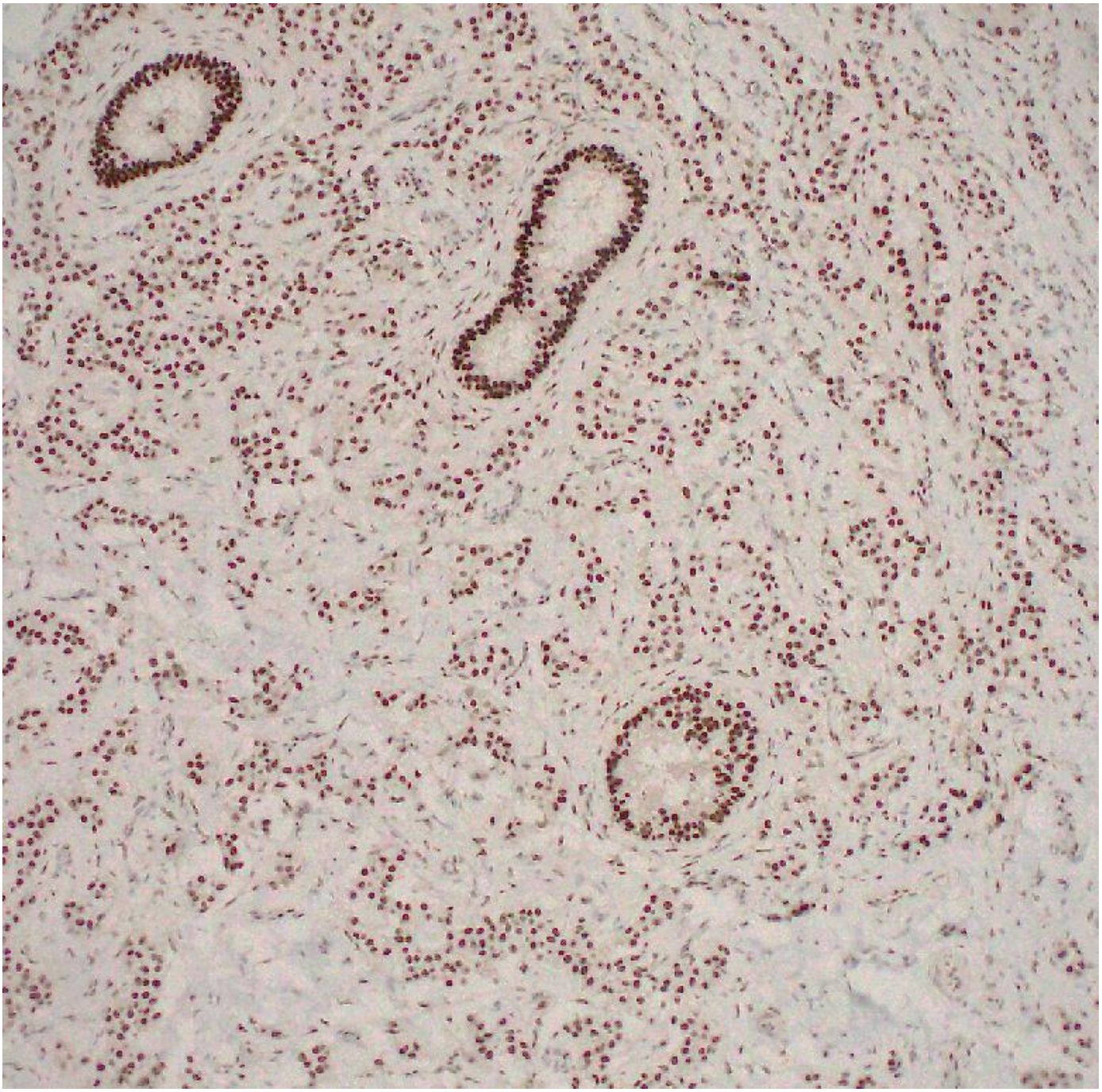


Low-power view shows a well-circumscribed tumor with a tubular architecture, and hyalinized stroma. (H&E, 40X)

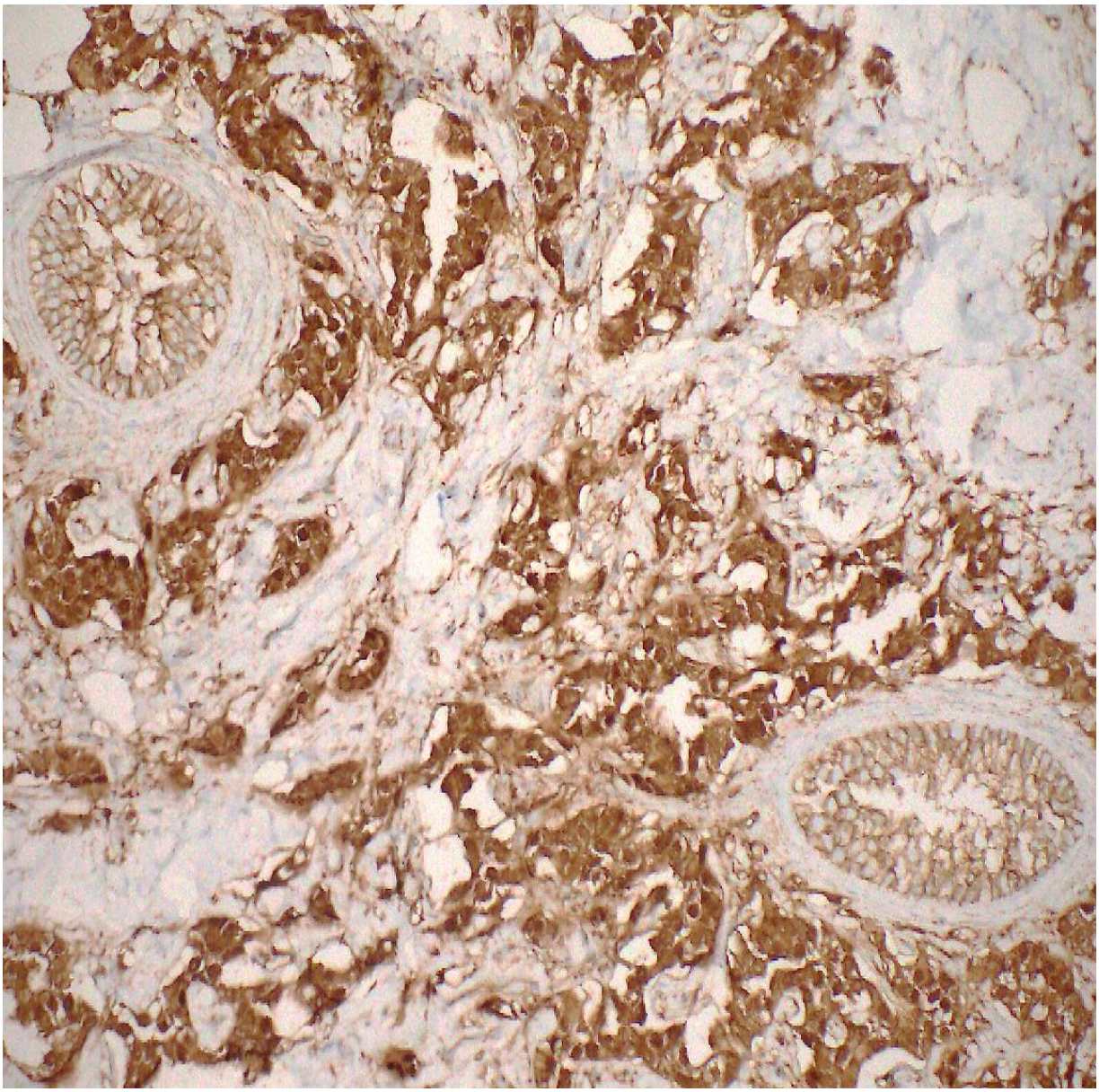


High-power view shows uniform cuboidal and ovoid tumor cells with vacuolated pale cytoplasm arranged in tubules separated by a delicate fibrous stroma. (H&E, 400X)

Immunohistochemistry



SF-1 is strongly and diffusely positive (200X).



Beta catenin is strongly and diffusely positive (200X).

Positive Stains: SF-1, beta-catenin

Negative Stains: OCT4, PLAP, Inhibin, CD117, Calretinin, WT1, Melan-A and AE1/AE3

Diagnosis:

Sertoli cell tumor

Differential diagnoses

1. Yolk sac tumor
2. Seminoma (tubular)
3. Adenomatoid tumor
4. Sertoli cell nodule
5. Signet-ring stromal tumor

Discussion

Sertoli cell tumor is a pure sex cord-stromal tumor composed of Sertoli cells. It represents 1 % of all testicular tumors and is the 2nd most common sex cord-stromal tumor after Leydig cell tumor. Sertoli cell tumor is mostly sporadic. It can occur in patients with undescended testes, Peutz-Jeghers syndrome, Carney syndrome, familial adenomatous polyposis syndrome, androgen insensitivity, and testicular feminization syndromes. It can affect all ages with a median age of 39 years.

In Sertoli cell tumor, the patients mostly present with slowly enlarging testicular mass, usually unilateral. Patients may also present with gynecomastia or impotence. Rarely patients can first present with metastasis. Most Sertoli cell tumors are benign, but approximately 10% of Sertoli cell tumors can be malignant. These neoplasms appear as firm, small nodules with a homogenous gray-white to yellow cut surface. Most of these tumors range from 2 to 5 cm in size. Larger tumors may be malignant.

Microscopically, Sertoli cell tumors have multiple growth patterns, including tubules, microcystic, solid cords and nests, and rarely spindled growth patterns. They have uniform cuboidal or columnar cells with moderate pale to lightly eosinophilic cytoplasm, often with prominent cytoplasmic vacuoles. Bland round to ovoid nuclei and occasional mitoses are their characteristics. They may have paucicellular, hyalinized, vascular fibrous stroma, or lymphoid aggregates.

Immunohistochemically, Sertoli cell tumors are positive for SF1, nuclear β-catenin, FOXL2, pancytokeratin (60-80%), inhibin-α, Melan-A, WT1, CD99, calretinin, S100 (30-60%), chromogranin, and synaptophysin. They are negative for PLAP, D2-40, OCT3/4, SALL4, AFP, CD30, HCG, and GPC3.

References

1.Young, Robert H. M.D.; Koelliker, Daniel D. M.D.; Scully, Robert E. M.D.. Sertoli Cell Tumors of the Testis, Not Otherwise Specified: A Clinicopathologic Analysis of 60 Cases. The American Journal of Surgical Pathology 22(6):p 709-721, June 1998.

2. Grogg J, Schneider K, Bode PK, Kranzbühler B, Eberli D, Sulser T, Lorch A, Beyer J, Hermanns T, Fankhauser CD. Sertoli Cell Tumors of the Testes: Systematic Literature Review

and Meta-Analysis of Outcomes in 435 Patients. Oncologist. 2020 Jul;25(7):585-590. doi: 10.1634/theoncologist.2019-0692. Epub 2020 Feb 11. PMID: 32043680; PMCID: PMC7356704.