Case Report
DOI: 10.4274/uob.galenos.2020.1714
Bull Urooncol 2022;21(1):28-31

Sertoli Cell Testicular Tumor: A Case Report

Engin Kölükçü[1], Faik Alev Deresoy[2], Filiz Eren[2], Murat Beyhan[3], Nihat Uluocak[1], Doğan Atılgan[1]

[1]*Gaziosmanpaşa University Faculty of Medicine, Department of Urology, Tokat, Turkey*
[2]*Gaziosmanpaşa University Faculty of Medicine, Department of Pathology, Tokat, Turkey*
[3]*Gaziosmanpaşa University Faculty of Medicine, Department of Radiology, Tokat, Turkey*

Abstract

Sertoli cell tumors are malignancies that constitute only 1% of all testicular cancers and are frequently observed between the ages of 30 and 40 years. Most Sertoli cell tumors have a benign clinical course. The molecular mechanisms involved in the etiopathogenesis of these tumors are unclear. Herein, presented a 28-years-old male patient with a painless mass in the right testicle and had a diagnosis of Sertoli cell cancer and discussed in the light of the literature.
Keywords: Sertoli cell, testis, tumor, treatment

Introduction

Testicular cancers are rare clinical conditions and account for approximately 1-2% of all male malignancies (1). In 2020, 9.610 new testicular tumors were estimated to be diagnosed in the United States, with 440 deaths due to this malignancy (2). Therefore, the Sertoli cell testicular tumor is a rare malignancy that constitutes approximately 1% of testicular cancers (3) and is observed at all age intervals. However, clinicians encounter patients with Sertoli cell tumors mostly in the third or fourth decades of their lives. Unilateral testicular mass with a slow growth pattern is the most common symptom of patients who present to urology departments (4). Herein, presented a case of Sertoli cell testicular tumor (not otherwise specified) in a patient who presented with complaints of a slowly growing painless mass in the right testicular region for 2 years.

Case Report

A 28-year-old male patient visited our clinic with a painless mass in the right testicle showing a slow growth pattern for 2 years. The genitourinary system examination revealed a mass of approximately 2.5 cm in a hard and fixed character, with clear boundaries. The patient had no history of scrotal trauma, urological surgery, or chronic disease. Additionally, a detailed general examination of the patient did not yield any pathological indication for systemic diseases, such as gynecomastia, lymphadenopathy, or hyperpigmentation. No abnormal values were detected in routine hematologic and biochemical parameters. Further, testicular tumor markers, such as serum lactate dehydrogenase (31 IU/L), α-fetoprotein (4.14 IU/mL), and β-human chorionic gonadotropin (1.02 mIU/mL), were within the normal limits. B-mode ultrasonography revealed a well-bordered, round, and solid mass lesion with echogenic areas inside the right testicle. The mass was observed in Doppler ultrasonography as a heterogeneous hypoechoic solid lesion in 29×21×20 mm dimensions with vascularization in places inside and in its periphery (Figure 1a, b). The patient underwent right high inguinal orchiectomy. Tissue samples were analyzed by two pathologists in the pathology department. Before the pathologic examination, specimens obtained from the patient were first macroscopically evaluated. Then, tissue samples were formalin-fixed, paraffin-embedded, and 4 µ sections were obtained using a tissue microtome. Sections were stained with hematoxylin and eosin and analyzed under an upright light microscope. Immunohistochemical analyses were performed using a Leica Bond Max immunostainer. All sections were then analyzed under light microscopy, which revealed a tumor infiltration in testicular parenchyma. The infiltrative pattern was both solid and tubular. Tumor cells had relatively uniform nuclei with small nucleoli and a large pale eosinophilic cytoplasm with indistinct borders. They lied in different directions and had a solid, trabecular, and insular architecture. The solid

Cite this article as: Kölükçü E, Deresoy FA, Eren F, Beyhan M, Uluocak N, Atılgan D. Sertoli Cell Testicular Tumor: A Case Report. Bull Urooncol 2022;21(1):28-31

Address for Correspondence: Engin Kölükçü, Gaziosmanpaşa University Faculty of Medicine, Department of Urology, Tokat, Turkey
Phone: +90 535 400 23 85 **E-mail:** drenginkolukcu@gmail.com **ORCID-ID:** orcid.org/0000-0003-3387-4428
Received: 20.04.2020 **Accepted:** 26.06.2020

©Copyright 2022 by Urooncology Association Bulletin of Urooncology / Published by Galenos Yayınevi

counterpart was predominant; however, slightly elongated tubular structures were also observed in border areas between the tumor and testicular parenchyma. Tubules were lined in a single layer of cuboidal/columnar cells suggesting Sertoli cells. Mitosis counts were >5 in 10 high power fields. Necrosis was absent (Figure 2a, b, c). The testicular tumor was diagnosed as a "Sertoli cell tumor not otherwise specified" type (Figure 3a, b, c). Thoracic and abdominopelvic computed tomography scan revealed no evidence of lymphatic or distant metastases. The follow-up was uneventful in 30 months. This case report was written after obtaining patient consent.

Discussion

Testicular cancer can be derived from any testicular cell type; however, >95% of testicular cancers are germ cell tumors (5). Seminoma is the most frequent germ cell tumor, constituting approximately 60% of all germ cell neoplasms (6). Sex cord-stromal tumors account for approximately 4%

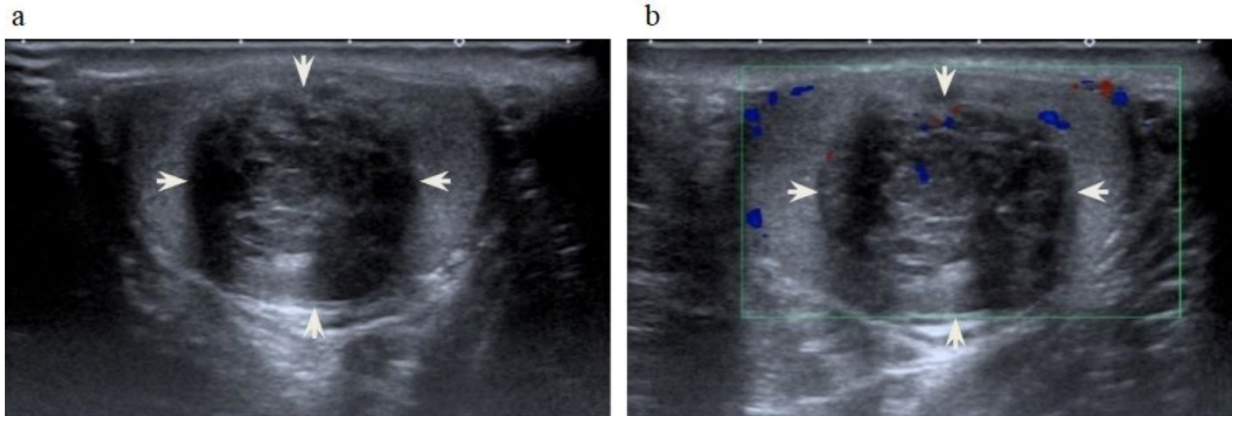


Figure 1a. B-mode USG shows a well-bordered, round, heterogeneous, and solid mass lesion with echogenic areas inside the testicle, **1b.** Doppler USG reveals the vascularization inside the mass and its periphery

USG: Ultrasonography

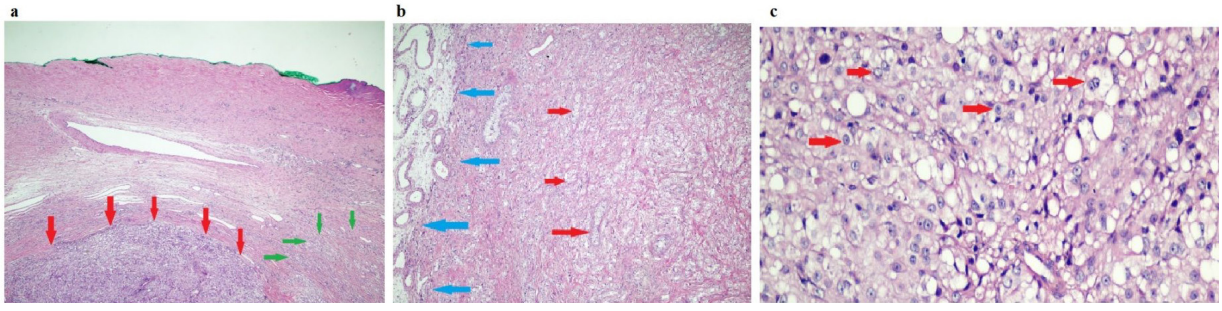


Figure 2a. Expansile solid tumor growing to the tunica albuginea (red arrows). Small tubular pattern tumor infiltration foci are shown (green arrows), **2b.** Tumor is well separated from testicular parenchyma (blue arrows). Weak tubular morphology is observed next to testicular parenchyma (red arrows), **2c.** The tumor is composed of uniform cells. The tumor cells have small and solitary nucleoli and vacuolated cytoplasm (red arrows). Binuclear forms are visible in some foci. Mitoses are rarely observed in tumor areas but necrosis is absent



Figure 3a, b, and c. Results of immunohistochemical analysis: S100 (A), vimentin (B), and WT1 (C) expression are shown

of all testicular cancers. Sex cord-stromal tumors (also known as, "androblastoma") are a spectrum of tumors, which has a differentiation of pure sex cord morphology in one end and pure stromal morphology in the other end, mostly composed of various proportions of both components. Sex cord-stromal tumor includes cells, which show fetal, pubertal, or adult Sertoli cell features (7,8). The pathological analyses categorized them into four groups: Leydig cell tumors, Sertoli cell tumors, granulosa cell tumors, and unclassified. Sertoli cell tumors are rarely observed pathologies and account for 0.4-1.5% of these tumors (9). The most common symptom is a painless and slow-growing testicular mass. Findings may also include gynecomastia and impotence due to hormonal changes (3,9). Studies with large series observed these hormonal changes in an average of 11-25% of cases (10). Concurrently, reports associated these pathologies with genetic syndromes, such as Carney syndrome and Peutz-Jeghers syndrome. This association is more common in bilateral or multiple Sertoli cell tumors (3). Sertoli cell tumors are mostly of benign characters; however, an in-depth literature analysis shows cases with malignant behavior. Generally, the aggressive attitude was estimated to be observed in 10-22% of these tumors (11). Sertoli cell testicular tumors are rarely observed, thus no strict follow-up and treatment protocols are available. The basic treatment approach includes radical inguinal orchiectomy. Currently, many authors report an appropriate evaluation of testicular-sparing surgery among treatment options, as the clinical course is extremely slow in most of these cases. The histopathological tumor features, such as the size of the mass, necrosis, lymphovascular invasion, and pleomorphism, are shown to be very closely related to the clinical course of the disease. Evaluating and analyzing patients who underwent testicular-sparing surgery with testicular ultrasonography is critical in terms of local recurrence and with chest, abdomen, and pelvic imaging to see any distant organ metastases. Grogg et al. (12) reported that 13% of patients underwent testicular-sparing surgery, local recurrence in only 1 patient during the 3-month follow-up, and 1% rate of contralateral recurrence in their meta-analysis of 435 cases. Testicular-sparing surgery was not performed since our patient's social facilities were extremely limited and he lived in a remote location to health centers, which would make his regular follow-ups difficult. However, various aggressive treatment strategies, such as retroperitoneal lymph node dissection, chemotherapy, and radiation therapy combinations, are applied in cases that show remote organ dissemination (13). Survival rates for 1 and 5 years were estimated as 93 and 77% for Stage 1 Sertoli cell tumors, respectively (11). Contrarily, late metastases were reported in some cases at stages up to 10 years (14). The World Health Organization classified this type of cancer in three categories: Sertoli cell tumor not otherwise specified, large cell calcifying Sertoli cell tumors, and sclerosing Sertoli cell tumors (15), of which the most common type is the Sertoli cell tumor not otherwise specified. Young et al. (8) conducted a large series of 60 cases with Sertoli cell tumor not otherwise specified. The average age of patients was 45 years. All tumors were unilateral and with an average size of 3.6 cm (range 0.3-15 cm). The same study reported the presence of metastatic disease by 6.7% at the time of arrival. Sertoli cell tumor not otherwise specified is located in testicular parenchyma, well-circumscribed, and has lobulated contours. The cut surface is solid, yellowish in color, and may contain foci of hemorrhage but necrosis is rare. Tumor cells are arranged in a solid or tubular fashion, and a reticular pattern of growth may be seen. These cells have uniform round or oval nuclei and pale eosinophilic cytoplasm. Atypia and pleomorphism among tumor cells are rare. A fibrous hyalinized stroma-containing dilated vascular structure may be seen between tumor islands. Mitoses are not frequent (<5 mitoses per 10 HPF) (7,8).

Therefore, considering rare pathologies, such as Sertoli cell tumors, among the pre-diagnoses for effective management of follow-up and treatment strategies for patients with painless testicular mass is crucial.

Acknowledgements

Publication: The results of the study were not published in full or in part in form of abstracts.

Contribution: There is not any contributors who may not be listed as authors.

Conflict of Interest: No conflict of interest was declared by the authors.

Financial Disclosure: The authors declared that this study received no financial support.

EthicsE

Informed Consent: This case report was written after obtaining patient consent.

Peer-review: Externally peer-reviewed.

Authorship Contributions

Concept: E.K., M.B., N.U., D.A., Design: E.K., M.B., N.U., D.A., Data Collection or Processing: E.K., F.A.D., F.E., Analysis or Interpretation: F.E., Literature Search: F.A.D., N.U., Writing: E.K.

References

1. Manecksha RP, Fitzpatrick JM. Epidemiology of testicular cancer. BJU Int 2009;104:1329-1333.
2. Siegel R, Miller K, Jemal A. Cancer Statistics, 2020. Ca Cancer J Clin 2020;70:7-30.
3. Bang S, Lee SD. Testicular Sertoli Cell Tumor in an Adult. Korean J Urol 2009;50:300-302.
4. Cornejo KM, Young RH. Sex cord-stromal tumors of the testis. Diagnostic Histopathology 2019;25:398-407.
5. Cheville JC. Classification and pathology of testicular germ cell and sex cord-stromal tumors. Urol Clin North Am 1999;26:595-609.
6. Özen A, Durankuş NK. Radiotherapy for Germ Cell Testicular Tumors. Turkiye Klinikleri J Urology-Special Topics 2016;9:57-63.
7. Henley JD, Young RH, Ulbright TM. Malignant Sertoli cell tumors of the testis: a study of 13 examples of a neoplasm frequently misinterpreted as seminoma. Am J Surg Pathol 2002;26:541-550.
8. Young RH, Koelliker DD, Scully RE. Sertoli cell tumors of the testis, not otherwise specified: a clinicopathologic analysis of 60 cases. Am J Surg Pathol 1998;22:709-721.
9. Giglio M, Medica M, De Rose AF, et al. Testicular sertoli cell tumours and relative sub-types. Analysis of clinical and prognostic features. Urol Int 2003;70:205-210.

10. Gravas S, Papadimitriou K, Kyriakidis A. Sclerosing sertoli cell tumor of the testis-a case report and review of the literature. Scand J Urol Nephrol 1999;33:197-199.
11. Anglickis M, Stulpinas R, Anglickienė G, et al. Case Report of Misleading Features of a Rare Sertoli Cell Testicular Tumor. Medicina (Kaunas) 2019;55:170.
12. Grogg J, Schneider K, Bode PK, et al. Sertoli Cell Tumors of the Testes: Systematic Literature Review and Meta-Analysis of Outcomes in 435 Patients. Oncologist 2020;25:585-590.
13. Ross JH, Kay R. Prepubertal Testis Tumors. Rev Urol 2004;6:11-18.
14. Compérat E, Tissier F, Vieillefond A. [Late metastasis after a testicular Sertoli cell tumour]. Ann Pathol 2004;24:45-46.
15. Ishida M, Fujiwara R, Tomita K, et al. Sclerosing Sertoli cell tumor of the testis: a case report with review of the literature. Int J Clin Exp Pathol 2013;6:2640-2643.