JOURNAL OF HEALTH SCIENCES AND MEDICINE

Sağlık Bilimleri ve Tıp Dergisi

J Health Sci Med 2019; 2(4): 146-148

Case Report / Olgu Sunumu

Germ cell testicular tumor with best prognosis, spermatocytic seminoma: a rare case report

En iyi prognozlu, spermatositik seminomlu germ hücreli testis tümörü: nadir bir olgu sunumu

Mehmet Zengin

Kırıkkale University, School of Medicine, Department of Pathology, Kırıkkale, Turkey

ABSTRACT

Spermatocytic seminoma is relatively uncommon and accounts for only 1–2% of all seminomas. It has specific pathological and clinical properties when compared with classical seminoma. Identification of spermatocytic seminoma is difficult especially in elderly cases, due to its rare occurrence, lack of clinical presentation, and the difficulty of differential diagnosis with morphologically classical seminoma and testicular lymphoma. Here we presented the clinical presentation, histopathologic and prognostic features of a spermatocytic seminoma case in the light of literature information.

Keywords: Spermatocytic seminoma, testis tumor, advanced age

ÖZ

Spermatositik seminom nispeten nadir görülür ve tüm seminomların sadece %1-2'sini içerir. Klasik seminomla kıyaslandığında spesifik patolojik ve klinik özelliklere sahiptir. Nadir görülmesi, klinik prezentasyonun olmaması ve morfolojik olarak klasik seminom ve testiküler lenfoma ile ayırıcı tanı zorluğundan dolayı, özellikle yaşlı olgularda spermatositik seminomun tanınması zordur. Burada literatür bilgileri ışığında bir spermatositik seminom vakasının klinik prezentasyonu, histopatolojik ve prognostik özelliklerini sunduk.

Anahtar Kelimeler: Spermatositik seminom, testis tümörü, ileri yaş

INTRODUCTION

Spermatocytic seminoma (SS) is a special form of germ cell tumors that different from the classical seminoma, with generally occurs in older (>50 years) and younger (<30 years) males (1). There is no ovarian carcinoma that may be the equivalent of SS and it is not associated with another testicular tumors, nor is it associated with cryptorchidism (2). According the different series, SS represents between 2% and 12% of all seminoma patients (3). Masson described the first case of SS at 50 years ago, and just about 400 cases, most of them benign, have been reported in the literature (3,4). It is a solid tumor with excellent prognosis that does not appear prominent in the early stage and does not metastasize (4). SS occurs more frequently in the right testis and shows higher bilaterality than the classical seminoma (4,5).

Corresponding Author: Kırıkkale Üniversitesi Tıp Fakültesi, Patoloji Anabilim Dalı, 71450, Yahşihan, Kırıkkale, Turkey

E-mail: mz1379@hotmail.com

Received: 14.08.**2018** **Accepted:** 24.09.**2018** **Doi:** 10.32322/jhsm.453505

Cite this article as: Zengin M. Germ cell testicular tumor with best prognosis, spermatocytic seminoma: a rare case report. J Health Sci Med 2019; 2(4); 146-148.

We report in this case a SS in a 55-year-old male along with a review of literature and attention to histological and clinical characteristics.

CASE REPORT

A 55-year-old male patient presented with a painless, slowly enlarging right testicular mass of 1 year was admitted to the urology polyclinic. There was no history of scrotal pain, cryptorchidism or trauma in this patient. Unilateral testicular growth was seen on physical examination. In the palpation, a well-defined, hard, painless right testicle mass was detected and inguinal lymph node was not observed. Ultrasonography showed a 7x5 cm sized solid tumor with heterogeneous echogenicity. No features were seen on computed tomography. Tumor markers as alpha-fetoprotein, lactate dehydrogenase and beta human chorionic gonadotropin were in normal range. On macroscopic examination, a 7x5 cm sized, subcapsular localized, well-defined, yellow-brownish paled, clearly separated tumoral lesion was observed. Tunica vaginalis, tunica albuginea and skin were not invasived. Histological examination revealed that the tumor showed a diffuse pattern in a mucinous intermediate substance Representative examples of hematoxylin and eosin (H&E) and placenta-like alkaline phosphatase (PLAP) with spermatocytic seminoma (SS) (**Figure**).

DISCUSSION

SS is different testicular tumors first described in 1946 by Masson (4). SS has a separate pathogenic pathway and the prognosis is much better than the classical seminoma (5). Along with publications in the literature indicating that the incidence of spermatocytic seminomas ranges between 1.7% and 12% of all seminomas and most of large studies have a frequency between 1.1% and 7.4% (5,6). For example, spermatocytic seminomas were detected in 58 of the 9,658 malignant testicular tumors in Australian cancer registry, with an incidence rate of less than 1.1% of all seminomas (6).

Being more usually in elderly patients, has no ovarian counterpart, occurs only in descended testis, and has never been found at extragonadal sites without involvement of testis are differences of SS from the classical seminoma (7). It originates from the different cell of classical seminoma because of finding SCP1 and XPA proteins that are normally expressed in premeiotic germ cells. Presence of chromosome 9 is not found in classical seminomas and is a consistent evidence in all of the SS patients (7). Most SS cases are found in a painless, slowly growing mass that can be palpated on the testis. The SS is usually seen in the sixth decade of old white males. Chung et al. (8) reported that the mean age was 62 years old (range from 32-77 years) and Raiss et al. (9) found that the median age was 45 years. Macroscopically, it is always seen as a homogeneous, well-limited tumor confined to the testicle and occurs a testicular mass with ranging between 1.5 and 28 cm (8, 9).

Spermatocytic seminoma is morphologically characterized by the arrangement of a mixture of three distinct measured cells resembling spermatogonia and spermatocytes in layers and cords. They usually have

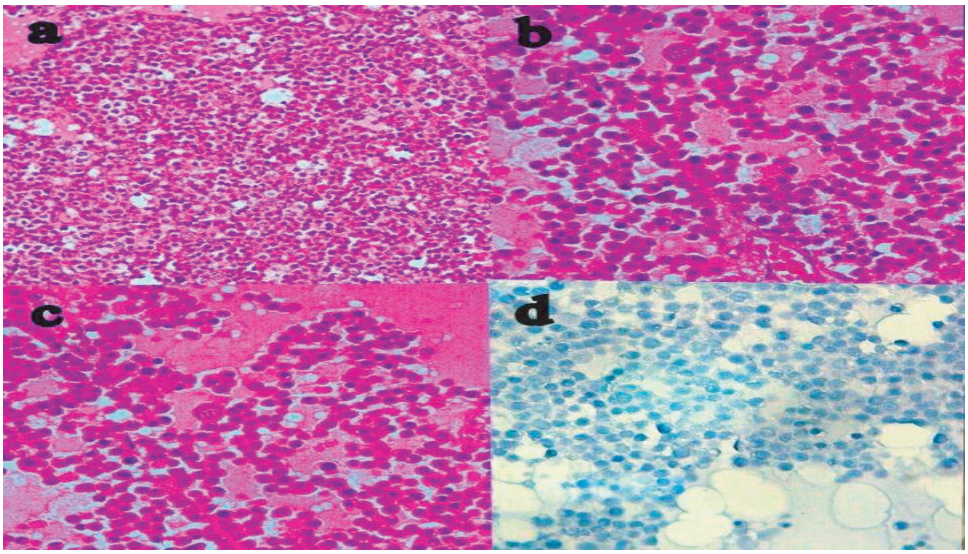

Figure. SS is characterized by the arrangement of a mixture of three different sized cells resembling spermatogonia and spermatocytes in layers and cords. **a.** SS showed a diffuse pattern in a mucinous intermediate substance (H&E, x200) **b-c.** SS showing a characteristic mixture of small, medium-sized and large cells (H&E, x400) **d**. Negativity of tumoral cells for PLAP antibody (x400).

a typical spermatocyte chromatin distribution. The nucleus of SS cell has a slightly oval or round shaped, smooth contour, as distinct to nuclei of classical seminoma cells (10). Immunohistochemically, PLAP is stained negative as a characteristic feature of this tumor, whereas classical seminoma are always stained positive. Generally, SS cells show focal or weak c-kit positivity, although there are different opinions in the literature. Another markers such as neuroendocrine markers, lymphoid markers and cytokeratin have been reported to be negative (11). The histologic and clinical features of our case are compatible with the information described in the literature.

Anaplastic variant of SS is the other important histological feature. Up to now, only six cases have been reported that define this variation (11). This uncommon variant is characterized by features such as multiple mitosis, extensive necrosis and invasion to surrounding tissues. Nevertheless, this component does not affect the good prognosis of SS. Only three metastatic described cases as proven showed that SS have to very low malignant potential (12). When the case is associated with sarcomatous component, metastatic disease has been reported. The component of sarcoma is generally high-grade undifferentiated sarcoma or a rhabdomyosarcoma and the metastatic disease usually develops from this sarcomatous component. Reports of sarcomatous differentiation in SS have been associated with poor prognosis and aggressive behavior (12). We have not detected recurrent metastases in our 3 year follow-up.

Consequently, SS is an indolent germ cell tumors rarely metastasizing and having a good prognosis although sporadic metastatic SS cases have been reported. For this reason, only orchiectomy is indicated for treatment. However, in the case of sarcomatous differentiation, aggressive behavior or metastasis may occur (13). In these cases radiotherapy and adjuvant chemotherapy may be useful.

RESULT

Spermatocytic seminoma is a unusual testicular germ cell tumors. Almost entirely benign viewing shows a marked difference in behavior from the classical seminoma. All cases should be followed because of rare metastatic events. Because the majority of cases have surgery sufficient, it is significant to remind this rare tumor especially in elderly cases.

ETHICS

Institution and patient approval was obtained.

DECLARATION OF CONFLICTING INTERESTS

The author declared no conflicts of interest with respect to the authorship and/or publication of this article.

REFERENCES

1. Pandey V, Khatib Y, Khade AL, et al. Spermatocytic seminoma with rhabdomyoblastic differentiation: case report and review of literature. Indian J Pathol Microbiol 2018; 61: 437-9.
2. Jha RK, Mathur S, Saidha NK. A case of spermatocytic seminoma in young individual. Med J Armed Forces India 2018 Jul; 74: 276-9.
3. Choi SK, Kim Koo T, Yoo H. Spermatocytic seminoma with brain metastasis. Pathology & Oncology Research 2017; 23; 223–4.
4. Masson P. A study of seminomas. Rev Cunud Bid 1946; 5: 361–87.
5. Rosai J, Silber I, Khodadoust K. Spermatocytic seminoma. Clinicopathologic study of six cases and review of the literature. Cancer 1969; 24: 92-102.
6. Carrière P, Peter B, Lin F. From the viertel centre for research in cancer control, brisbane, queensland (PC, PB), and western australian institute for medical research, Perth (LF), Australia.
7. Looijenga LH, Hersmus R, Gillis AJ, et al. Genomic and expression profiling of human spermatocytic seminomas: primary spermatocyte as tumorigenic precursor and DMRT1 as candidate chromosome 9 gene. Cancer Res 2006; 66: 290–302.
8. Chung PW, Bayley AJ, Sweet J, et al. spermatocytic seminoma: a review. Eur Urol 2004; 45: 495–8.
9. Raiss GG, Benatiya Andaloussi MM, et al. Spermatocytic seminoma at the national institute of oncology in Morocco. BMC Res Notes 2011; 29: 218.
10. Oosterhuis JW, Looijenga LH. Testicular germ-cell tumours in a broader perspective. Nat Rev Cancer 2005; 5: 210–22.
11. Steiner H, Gozzi C, Verdorfer I, et al. Metastatic spermatocytic seminoma: an extremely rare disease. Eur Urol 2006; 49: 183-6.
12. Trivedi P, Pasricha S, Gupta A. Spermatocytic seminoma associated with undifferentiated sarcoma: a rare case report. Indian J Pathol Microbiol 2011; 54: 138-40.
13. Narang V, Gupta K, Gupta A, et al. Rhabdomyosarcomatous differentiation in a spermatocytic seminoma with review of literature. Indian J Urol 2012; 28: 430–3.