Cukurova Medical Journal
ÇUKUROVA ÜNİVERSİTESİ TIP FAKÜLTESİ

Cukurova Med J 2018;43(4):1045-1047
DOI: 10.17826/cumj.335213

EDİTÖRE MEKTUP / LETTER TO THE EDITOR

Large-cell calcifying sertoli cell tumor of the testis

Testisin büyük hücreli kalsifiye sertoli hücreli tümörü

Emine Kılıç Bağır[1], Arbil Açıkalın[1], Elif Çalış[1], Şeyda Erdoğan[1]

[1]Çukurova University Faculty of Medicine, Department of Pathology, Adana, Turkey

Cukurova Medical Journal 2018;43(4):1045-1047

To the Editor,

Sex cord stromal tumors of the testis constitute approximately 4-6% of all testicular neoplasms. In the WHO classification, stromal testicular tumors are classified as Leydig cell tumors (LCT), Sertoli cell tumors (SCT), Sertoli-Leydig cell tumors, granulosa cell tumors (GCT), and mixed cell tumors[1,2].

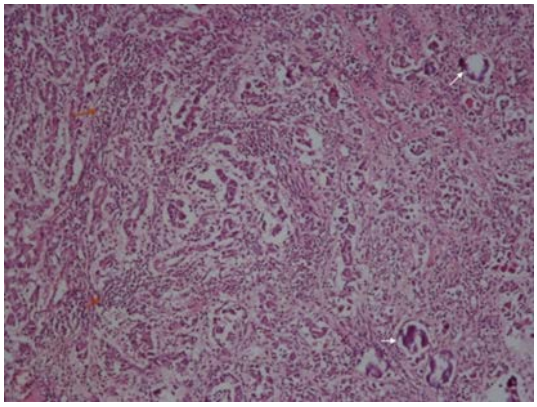

Figure 1. Tumor cells with large eosinophilic cytoplasm, vesicular nuclei and prominent nucleoli and calcification foci (marked with an arrow) (HE x400)

The majority of testicular sex cord-stromal tumors are Leydig cell tumors, and sertoli cell tumors comprise less than 1%. Subtypes of SCTs are large cell calcifying sertoli cell tumors (LCCSCT), sclerosing sertoli cell tumors and sex cord stromal tumors not otherwise specified. LCCSCT is quite a rare subtype, Proppe and Scully described this entity in 1980 and approximately 90 cases has been reported in the literature. Tumors, may be seen as sporadic cases or as a part of Carney complex or Peutz-Jeghers syndrome[1,3,4].

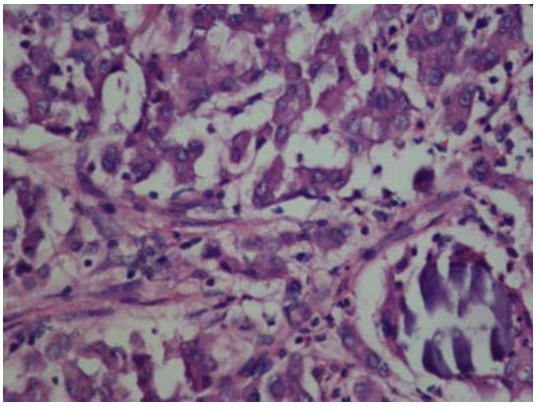

Figure 2. Stromal calcification and lymphocytic infiltration areas forming islands-tubular structures and cords in the hyalinised edematous myxoid stroma of testis parenchyma (white arrow). (HE x100)

A 27 year old male patient had been admitted to another center with a painless mass in the right testis. On physical examination, except the testicular mass, there were no pathological findings including gynecomastia or abnormal skin pigmentation. His serum AFP, testosterone and β-HcG levels were normal and he had undergone orchiectomy at that center. In the macroscopic examination of the testis; an encapsulated light yellow-brown mass, 3.2 cm in diameter involving hard bony structures had been defined and the case had been reported as consistent with "yolk sac tumor".

Yazışma Adresi/Address for Correspondence: Dr. Emine Kılıç Bağır, Cukurova University Faculty of Medicine, Department of Pathology E-mail: eminebagir@yahoo.com
Geliş tarihi/Received: 18.08.2017 Kabul tarihi/Accepted: 16.12.2017

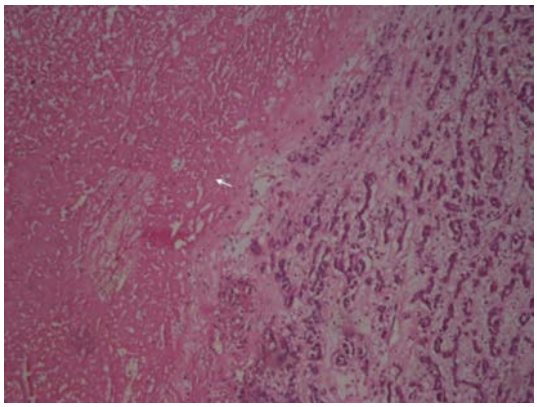

Figure 3. Extensive areas of necrosis on the right side of the picture (marked with an arrow) (HE x100)

The pathological material was sent to our department as a paraffin block. Microscopically, tumor cells were large eosinophilic cytoplasm, vesicular nuclei and prominent nucleoli forming hyalinised edematous myxoid islands-tubular structures and cords with stromal calcifications and lymphocytic infiltration in the testis parenchyma (Figure 1, 2). There were extensive areas of necrosis (Figure 3), and 2-3 mitotic figures in 10 high power fields (HPF). Immunohistochemically calretinin and inhibin were positive (Figures 4 and 5), melan A and CD10 focal positive, alpha-fetoprotein and CD117 negative. The case was diagnosed as LCCSCT by immunohistochemical and morphological findings.

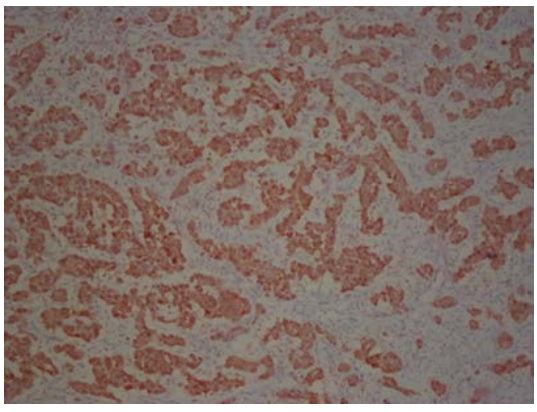

Figure 4. Immunohistochemical staining for calretinin was positive in the tumor cells (Calretinin IHC, x200)

Large cell calcifying sertoli cell tumor is a rare variant of SCT due to its different clinical and microscopic characteristics[4,5]. LCCSCT is mostly seen in children and adolescents[6,7]. It is frequently bilateral, multifocal, and rarely shows metastasis. While 60% of the reported cases are sporadic, 40% of the cases are associated with genetic abnormalities such as Carney complex and Peutz-Jeghers syndrome[4,8]. Histopathologically, LCCSCT involves cuboidal or columnar sertoli cells with prominent nucleoli, abundant eosinophilic cytoplasm, and generally cytoplasmic vacuoles, embedded in a myxohyaline stroma. Mitosis is rare. Tumor cells generally form nodules, involving cords, nests or trabecular islands. Calcified focus is an important finding and is accepted as one of the diagnostic criteria of LCCSCT[6]. Electron microscopy occasionally demonstrates Charcot-Böttcher filament bundles, which are characteristic of Sertoli cell differentiation. Similar morphological findings were also noteworthy in the present case.

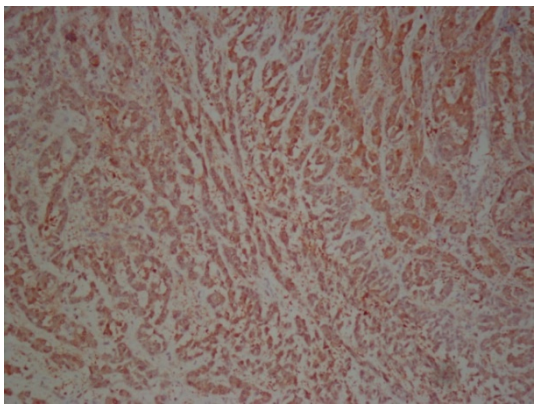

Figure 5. Immunohistochemical staining for inhibin was positive in the tumor cells (Inhibin IHC, x100)

Large cell calcifying sertoli cell tumors has a low malignant potential, especially in children. It is not always easy to differentiate between benign and malignant tumors. About 17% to 25% of reported LCCSCT cases have been clinically malignant. Malignant tumors usually occur in older ages. All malignant tumors that have been reported are unilateral and unifocal, while 28% of benign cases are bilateral and/or multifocal. Pathological features of malignancy include size larger than 4 cm, mitotic count greater than 3 per 10 high power fields, significant nuclear atypia, tumor necrosis, and angiolymphatic invasion[5]. Treatment includes radical orchiectomy and lymph node dissection is performed if retroperitoneal lymph node involvement. Currently there is no standard role for chemo-radiotherapy[8,9]. The present case had

undergone orchiectomy and close follow-up was recommended, due to malignant potential because of the presence of necrosis and mitotic activity. The patient is disease-free without any clinical and radiological findings for approximately two years.

In differential diagnosis, along with benign conditions like malakoplakia, which shows Michaelis-Gutman bodies, and negative staining for inhibin and calretinin, malignancies, especially LCT should be bear in mind. Adult patients with LCT usually present with a testicular mass, approximately 30% have gynecomastia because of high serum estrogen levels. Most of them have abnormal serum levels of steroid hormones, with about a third of patients having increased serum androgens.. Macroscopically, LCTs are yellow or brown in color. Tumor cells are large and polygonal with abundant eosinophilic cytoplasm and round nuclei with prominent nucleoli[7,8]. İntracytoplasmic Reinke's crystals are seen in 1/3 of the cases. Contrary to LCCSCT, intratubular growth and multifocality is not seen. Intratumoral calcifications and a prominent basal lamina are in favor of LCCSCT diagnosis[4].

The case presented herein was initially diagnosed as Yolk sac tumor (YST). YST is mostly seen under the age of 3 years, and has a good prognosis; however in adults, they are usually part of a mixed tumor, and has similar prognosis to embryonal carcinoma. immunohistochemical, staining methods may help in the differential diagnosis of these tumors; SCTs are negative for alpha-fetoprotein and positive for inhibin, CD10 and calretinin; whereas YSTs are positive for alpha-fetoprotein and negative for inhibin and calretinin. On the other hand, Inhibin is also positive in sex cord-stromal tumors; approximately in 100% of LCTs and 30-91% of SCTs, and negative in germ cell tumors; therefore this marker also cannot be used to differentiate between LCCSCT and LCT. Positive staining for melan-A was observed in both Leydig cells and Sertoli cells of the testis[10]. In the present study, tumor cells showed focal positive staining for melan A. In conclusion, because of the rarity and malignant potential of the tumor (presence of necrosis and a mitotic activity>3/10 high power fields) must be kept in mind in differential diagnosis. In addition to histopathologic findings, we believe that the accuracy of diagnosis will increase when evaluated together with immunohistochemical, clinical and laboratory findings.

Acknowledgement

This case has been presented as a poster 23rd National Pathology Congress 6-10 November 2013, İzmir/Turkey

REFERENCES

1. Brunocilla E, Pultrone CV, Schiavina R, Rocca C, Passaretti G, Corti B et al. Testicular sclerosing Sertoli cell tumor: an additional case and review of the literature. Anticancer Res. 2012;32:5127-30.
2. Giglio M, Medica M, De Rose AF, Germinale F, Ravetti JL, Carmignani G. Testicular sertoli cell tumours and relative sub-types: analysis of clinical and prognostic features. Urol Int. 2003;70:205-10.
3. Kumar H, Tanveer N, Gupta N, Mishra K. Large cell calcifying sertoli cell tumour of testis-a rare case report. J Clin Diagn Res. 2016;10(11):ED03–05.
4. Proppe KH, Scully RE. Large-cell calcifying Sertoli cell tumor of the testis. Am J Clin Pathol. 1980;74:607-19.
5. Kratzer SS, Ulbright TM, Talerman A, Srigley JR, Roth LM, Wahle GR et al. Large cell calcifying Sertoli cell tumor of the testis: contrasting features of six malignant and six benign tumors and a review of the literature. Am J Surg Pathol. 1997;21:1271-80.
6. Bostwick DG, Cheng L. Urologic Surgical Pathology, 2nd ed. New York, Mosby Elsevier, 2008.
7. Lai JP, Lee CC, Crocker M, Najmuddin M, Lange E, Merino M et al. Isolated large cell calcifying sertoli cell tumor in a young boy, not associated with Peutz-Jeghers syndrome or Carney complex. Ann Clin Lab Res. 2015;3:2.
8. Song DH, Jeong SM, Park JT, Yun GW, Kim BK, Lee JS. Large cell calcifying sertoli cell tumor of the testis: a case study and review of the literature. Korean J Pathol. 2014;48:50-3.
9. Oliva E, Garcia-Miralles N, Vu Q, Young RH. CD10 expression in pure stromal and sex cord-stromal tumors of the ovary: an immunohistochemical analysis of 101 cases. Int J Gynecol Pathol. 2007;26:359-67.
10. Sato K, Ueda Y, Sakurai A, Ishikawa Y, Okamoto SY, Ikawa H et al. Large cell calcifying Sertoli cell tumor of the testis: comparative immunohistochemical study with Leydig cell tumor. Pathol Int. 2005;55:366-71.