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SPERMATOCYTIC SEMINOMAS OF THE TESTIS

General Surgery

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ABSTRACT

Spermatocytic seminomas account for 1-4% of all seminomas. It has distinct pathogenesis, histological features, IHC (immunohistochemistry) profile, and comparatively benign clinical behaviour than other germ cell tumors, especially classical seminoma. It is important to differentiate from classical seminoma. PAS special stain and PLAP immunostain are significantly helpful in distinguishing these two entities. Spermatocytic seminomas follow a benign course and orchiectomy alone is the preferred treatment.

KEYWORDS

Seminoma, Testicular tumours, Spermatocytic seminoma.

INTRODUCTION

Testicular tumours account for 1% of all malignant tumours, and 99% of all testicular tumours are malignant. Testicular tumours can be broadly classified into Germ cell tumours (95%), Nongerm cell tumours (4%), Adnexal and paratesticular tumours, Carcinoids, Lymphomas, and Secondaries. Germ cell tumours are further classified into Seminomatous and Nonseminomatous type. Seminomas are basically of three types: Classic, Spermatocytic, and Anaplastic.[1]

Spermatocytic seminoma is a solid tumor found solely in the testis. It is an unusual germ cell tumor of old men known to arise from testis only in comparison with classical seminoma.[2] Spermatocytic seminomas are not linked to cryptorchidism, intratubular germ cell neoplasia, unclassified type, or other testicular germ cell tumor subtypes.[3] It is associated with a good prognosis as the tumour spread is rare. The most common presenting complaint in men with spermatocytic seminomas is painless testicular enlargement.[4]

METHODS

A 58 years old male patient presented in Surgery OPD with right scrotal painless swelling for 2-3 months without any lymphadenopathy or organomegaly (**Fig 1**).

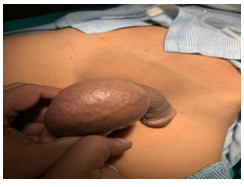

Fig 1: Clinical picture showing enlarged testis.

USG Scrotum showed a well-defined oval-shaped heterogeneously hyperechoic lesion measuring 5.8x5.5x3.6cm on the right side. Tumor markers like alpha-fetoprotein, β-human chorionic gonadotropin (β-HCG), & serum lactate dehydrogenase (LDH) were within normal limits. CT (Computerised Tomography) scan Thorax, abdomen, and pelvis were negative for lymphadenopathy, and metastasis. A right orchidectomy was performed. On Gross examination of the specimen, right testicular mass with attached spermatic cord measured 5.5x5x3.2cm (**Fig 2**).

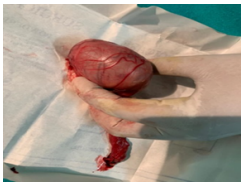

Fig 2: Excised Testicular specimen

On cut section, testis was firm, grey-white, covered with tunica albuginea & showed areas of necrosis (**Fig 3**).

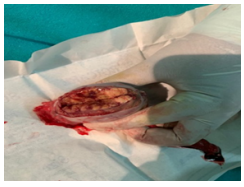

Fig 3: Cut Section showing grey-white tissue.

On microscopy, the section examined showed sheets of malignant tumor cells divided into lobules by delicate fibrous septa with scant to absent lymphocyte infiltrate (**Fig 4,5**).

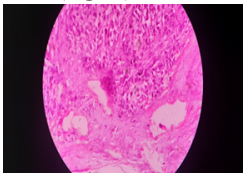

Fig 4: H&E section showing giant cells and sheets of malignant tumor cells.

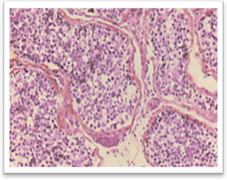

Fig 5: H&E section showing polymorphic intratubular cell proliferation.

Tumour contained 3 distinct cell types, from lymphocyte size to multinucleated giant cells but mostly composed of intermediate-sized cells. Tubular preservation was seen at the periphery of the tumour. Focal necrosis and edema filled spaces were present causing pseudoalveolar appearance. Minimal mitosis was seen. Vascular and spermatic cord invasion was present. The tunica albuginea was free of tumor. Our patient recovered well and did not show any recurrence in the last 1.5-year postoperatively.

DISCUSSION

Accounting for 1-4% of all seminomas, the Spermatocytic seminoma has been regarded as malignancy along the lines of classical seminoma. But it exhibits different pathology and natural history, albeit the same clinical behaviour.[5,6] Clinically the main difference is the age of occurrence. Spermatocytic seminoma tends to occur more commonly in men aged over 50, while classical seminoma, the age at diagnosis is between 25 to 40 years. The duration of symptoms was on the whole longer compared with classical seminoma, indicating slower evolution and less malignant biological behaviour.[6,7]

In addition to history, physical examination, and ultrasonography,

patients with spermatocytic seminomas should have a determination of specific tumor markers: α-fetoprotein, β-human chorionic gonadotropin (β-HCG), and lactate dehydrogenase (LDH).[1] Spermatocytic seminomas follow a benign course, and orchiectomy alone is the preferred treatment.[8] Adjuvant chemotherapy with single-agent carboplatin is recommended, alone or in combination with radiotherapy in advance cases.

The Spermatocytic seminoma is distinct from classical seminoma in its morphological characteristics with three different cell types (small, medium, large), spherical nuclei, eosinophilic to amphophilic cytoplasm, lack of cytoplasmic glycogen, and sparse to absent lymphocytic infiltrate.[9,10] PAS special stain and PLAP immunostain are significantly helpful in distinguishing these two entities.

CONCLUSIONS

Spermatocytic seminoma is a rare testicular tumor with distinct clinical and histological characteristics. It has a very low metastatic potential, and its treatment comes to orchidectomy or surveillance (follow up). The identification of this tumor during pathological examination is essential, thus avoiding any additional treatment. The prognosis of this type of tumor is favourable, however surveillance especially of the testicle adelph is necessary.

REFERENCES:

1. Townsend C, Evers B, Mattox K, Beauchamp R. Sabiston textbook of surgery. 20th ed. Philadelphia: Elsevier; 2017.
2. Stein M, Charas T, Drumea K, Sabo E, Ben-Yosef R. Spermatocytic variant of classic seminoma: a report of five cases and a brief review of the literature. Rambam Maimonides Medical Journal. 2014;5(3):e0021.
3. Reuter VE. Origins and molecular biology of testicular germ cell tumors. Mod Pathol. 2005 Feb. 18 Suppl 2:S51-60.
4. Tavora F, Schultz L. Spermatocytic Seminoma Pathology: Definition, Epidemiology, Etiology [Internet]. Emedicine.medscape.com. 2017. Available from:https:// e medicine. medscape.com/article/1612157-overview#a11
5. Mills E, Kelly B, O'Neill L. Mitochondria are the powerhouses of immunity. Nature Immunology. 2017;18(5):488-498.
6. Yddoussalah O, Touzani A, Karmouni T, Elkhader K, Koutani A, Andaloussi A. Spermatocytic Seminoma: A Case Report. SCIAEON Journal of Radiology. 2017;1(1):1-3.
7. Hori T, Ito T, Iwase Y, Kato J. Two cases of spermatocytic seminoma. Hinyokika Kiyo. 1991;37(2):187-90.
8. Chung PW, Bayley AJ, Sweet J, et al. Spermatocytic seminoma: a review. Eur Urol. 2004 Apr. 45(4):495-498.
9. Koshida K, Katsumi T, Hisazumi H. Spermatocytic seminoma: a case report. Hinyokika Kiyo. 1987 Sep;33(9):1492-1495.
10. Kamata S, Horiuchi S, Kihara K, Higashi Y, Fukui I, Kitagawa M, Kamiyama R. A case of spermatocytic seminoma. Gan No Rinsho. 1989 Jan;35(1):120-122.