Case Report

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SPERMATOCYTIC SEMINOMA-A RARE CASE REPORT

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ABSTRACT

A rare yet distinct testicular germ cell tumor is spermatocytic seminoma which represent less than 1% of testicular cancers. It was first recognized by Masson et.al in 1946. It is between 25 and 40 times less frequent than the typical seminoma. An older presentation age and a decreased propensity to metastasis are the clinical characteristics that set out spermatocytic seminoma from classical seminoma. Spermatocytic seminoma never arises in any location other than the testis that is unrelated to other varieties of germ cell cancers, in contrast to the typical seminoma, which develops in the extragonadal sites as a primary tumor (where it is known as a germinoma) and typically occurs with other forms of germ cell tumor. It has a better prognosis.. The preferred treatment is orchidectomy. Radiotherapy is not required to be given after it.

KEYWORDS: Spermatocytic seminoma, metastasize, germ cell tumour.

INTRODUCTION

A rare variety of germ cell tumor is known as spermatocytic seminoma that both clinically and pathologically, differs from classical seminoma. Typically, it affects older men.There is no history of cryptorchidism related to it.There is no equivalent of this cancer in the ovary or any other site (1). Its pathological features include cytoplasmic glycogen deficiency and scant to absent lymphocytic infiltration. The most common genetic anomaly is gain of chromosome 9 (1). There aren't many case reports of sarcomas developing in spermatocytic seminoma, and metastasis is only sometimes reported.Because individuals with spermatocytic seminoma may not need additional treatment after surgery, it is necessary to distinguish this disorder from its frequent imitators, such as classic seminoma and embryonal cancer (2).

Testicular germ cells tumors are the most common solid cancer in young white men around the ages of 20 and 35, although they are rather infrequent in African Americans(1).In the human testis, three distinct types of germ cell tumors can be identified based on epidemiology, clinical presentation, and histology. Teratomas-yolk sac tumors are within the first category; they typically appear within the first four years of life and invariably before puberty(1). Seminomas and non-seminomatous germ cell tumors that appear after puberty are included in the second group (1). Spermatocytic seminomas, which typically affect older men, are included in the third group. The prognosis, treatments, and presentations of these groups are variable. Maisson et al. published the first description of spermatocytic seminoma in 1946 (2). With a frequency ranging from 1.3% to 2.3% for all seminoma patients, it is an uncommon tumor. Spermatocytic seminomas account for 0.41 cases per million cases of all testicular germ cell tumors and 1.1% of seminoma group, according to a study (3).

CASE REPORT

A male patient, 60 year old, arrived at Era's Lucknow Medical College & Hospital. He reported a three-month-old, painless, steadily increasing right scrotal hypertrophy. There were no associated symptoms such as scrotal pain, chills, fever, or any discomfort. There were no obvious abnormalities in left testicles, spermatic cord, or epididymis. No other therapies or medical treatment were sought by the patient. He denied experiencing any lumbar or abdominal pain, as well as any increased urine frequency, urgency, or pain. He claimed to have lost weight. No trauma or other infections have been reported by the patient. Any family history was rejected by the patient. Physical examination revealed a 4 cm x 4 cm solid mass that was pale in color, was slightly mobile and was palpable in the right scrotum. Scrotal ultrasonography of the patient revealed an oval-shaped hypoechoic mass measuring 4.5 cm x 2.5 cm x 3.4 cm in the right testicle, with unequal internal echogenicity. The right testis, which is unevenly large and dense , with nodular change, and an ambiguous contour could be noticed on computed tomography. Doppler imaging revealed sporadic blood flow signals in the lesion. Pt

underwent right orchidectomy under general anaesthesia.Surgery was completed and the patient of our hospital got discharged and was advised for follow up in OPD. The excised tissue was sent for histopathological examination. We received a right orchidectomy specimen that was examined and processed.

Gross

On gross examination, the testicle measured 4.5 x 3.0 x 3.4 cm. Outer surface was gray white to gray brown in colour. Cut surface showed gray brown-gray black fleshy areas with invasion of the tunica.

Microscopy

Section from the tissue show polymorphic population of atypical cells arranged in sheets separated by scant fibrous septa. These atypical cells are small round cells (lymphocyte like) with few basophilic cytoplasmic nuclei and circular to oval nuclei admixed with intermediate cells exhibiting round nuclei with filamentous to granular chromatin with dense eosinophilic to amphophilic cytoplasm along with multinucleated giant cells and necrosis.

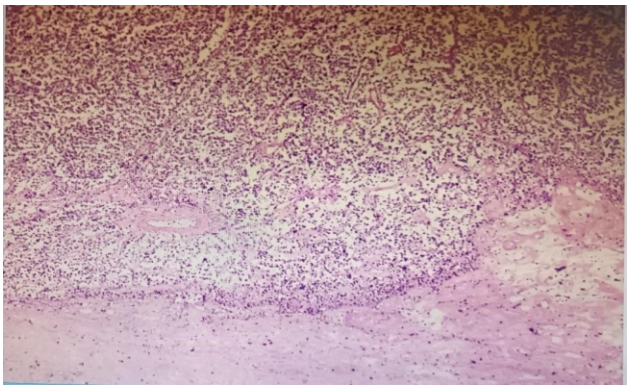

Fig. 1: Hematoxylin and eosin stained section at scanner (4x) shows diffuse sheets of cells

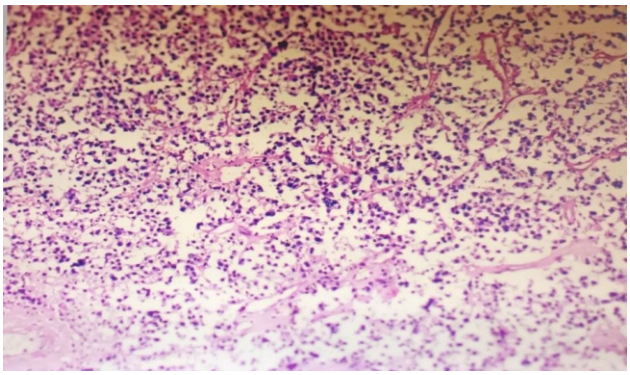

Fig. 2:* 10x *Hematoxylin and Eosin stained section in low power(10x)shows lymphocyte like small round cell. having round to oval nuclei with scant basophilic cytoplasm

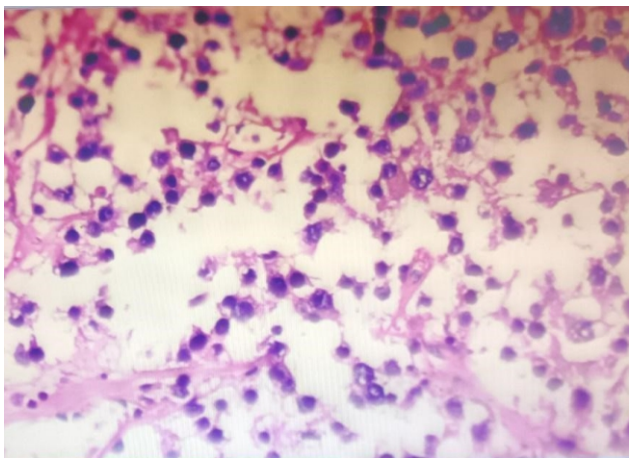

Fig. 3:* 40x *Hematoxylin and Eosin stained section in high power(40x)shows atypical cells arranged in sheets separated by scant fibrous septa

DISCUSSION

Except for the fact that it is a different sort of germ cell tumor that nearly invariably lacks the ability to develop into other tissues, spermatocytic seminoma bears little or no resemblance to the usual seminoma. These tumors mostly consist of spermatogonia-like cells with localized differentiation. Low back pain and gradually progressing testicular swellings are two clinical signs of spermatocytic tumor.

Spermatocytic tumors have a diameter that varies ranging from 2 to 20 centimeters, on an average 7 centimeters in diameter. According to Hu et al. , these lobulated tumors appear to be homogenous pink,brown or white tumours and are often soft, lobulated, and mucinous grossly (1). They frequently have necrotic, hemorrhagic, and edematous regions. The bulk of these tumors are restricted to the testis and do not invade neighboring organs by penetrating the testicular sheath (2). The following traits define the histomorphological spectrum of spermatocytic tumor.Most of the tumors are multinodular or diffuse when viewed at low magnification. Typical cell populations in tumours come in three sizes. Spermatocytic tumors frequently exhibit oedematous or myxoid degeneration resulting in oedematous stroma that produces slit-like features and irregular or follicular-like patterns. Lymphomas, on the other hand, rarely exhibit these characteristics. Fibrous margins and densely anastamosing, linked island-like formations are prominent features of tumor nodules, lymphocytic infiltration is clearly present, along with inflammation with granulomas. It is crucial to recognize all of the aforementioned traits since they will assist the pathologist in making a diagnosis and a differential diagnosis (6). It should be noted that its

immunohistochemistry markers are likewise quite unique. A crucial marker, CD117, is frequently expressed positively or weakly positively, and the proliferating index (Ki-67) is frequently very high (4). Seminomas that are spermatocytic must be separated from those that are typical and anaplastic. The average age (30 years) of onset for classic seminoma is lower, and the cancerous cells are frequently glycogen-rich with transparent cytoplasm. Cells from conventional Seminoma tumors are immunohistochemically positive for the markers CD117, vimentin, PLAP, ferritin, LDH, and germ cell antigen, but frequently negative for CD30 and high molecular weight keratin (5). Heteromorphism and an accelerated mitotic rate are seen in anaplastic seminoma cells. Anaplastic Seminoma is characterized by increased serum hcg levels. AE1, AE3, CD30 and OCT3/4 which are lacking from Spermatocytic Seminoma, however ,prevalent in other germ cell cancers, were missing from the patient's tumor. Moreover, the tumor of our patient has positive immunohistochemistry CD117 staining. This marker is crucial for recognizing Spermatocytic tumor. Serum HCG, LDH, and AFP levels in laboratory test findings are typically not increased. As it is a non-invasive tumour, ultrasonography is a recommended imaging technique for the early diagnosis of testicular tumors (7). More details on characteristics including the tumor boundaries, internal architecture, lymph node metastases, and involvement of nearby structures are revealed by CT. A biopsy is required to confirm the diagnosis. Currently, orchidectomy is the therapy of choice for testicular spermatocytic tumor (8).

CONCLUSION

We describe a case of typical spermatocytic cancer. Orchidectomy is the primary line of treatment for spermatocytic tumors and does not require any additional adjuvant therapy. Its almost complete inability to metastasize is one of its defining characteristics. To detect potential postoperative recurrence, recommended option is long-term follow-up.

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