Case Report

Synchronous Bilateral Non-Seminomatous Mixed Germ Cell Tumours of Testis

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Abstract

Synchronous testicular germ cell tumors with discordant histopathology are an uncommon entity. We describe a case in a 39-year-old male who presented with bilateral testicular swelling. Investigations revealed raised tumor markers and bilateral testicular lesions on scrotal Ultra Sound. Histopathology of bilateral orchidectomy showed a right testicular mixed germ cell non-seminomatous tumour comprising of immature teratoma and yolk sac (endodermal sinus) elements and a left testicular of mixed germ cell non-seminomatous tumour comprising of embryonal carcinoma and choriocarcinoma elements. This case is being presented for its rarity and unusual combination of germ cell histological tumours.

Key Words: Germ cell tumour, Synchronous, Immature teratoma, Yolk sac tumour, Embryonal carcinoma, Choriocarcinoma

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Introduction

Among the testicular germ cell tumours, bilateral testicular germ cell tumours are a rare entity (0.5% to 5% of the testicular germ cell tumours). Within the bilateral testicular germ cell tumours, about 35% of subjects have synchronous tumours whereas 65% have metachronous tumours[1,2]. Synchronous testicular tumours have a less favourable outcome compared to metachronous testicular tumours. It has also been found that discordant histology (that is two different histological germ cell tumours) was less commonly seen in synchronous germ cell tumours as compared to metachronous germ cell tumours[1]. We report a patient with bilateral non-seminomatous tumour with discordant histology in a 39 year old South Indian male. This case is being presented for its rarity and unusual combination of germ cell histological tumours.

Case history

A 39 year old male presented with bilateral progressively increasing painless scrotal swelling. Systemic examination revealed no other organomegaly or lymphadenopathy. Investigations revealed elevated serum tumour markers; α-fetoprotein of 2332ng/ml, β-HCG of 9663.5 mIU/ml and a LDH of 395U/L. Scrotal USG revealed multiple nodular and cystic lesions in both testis. Bilateral orchidectomy was performed.

On gross pathological examination, the right testis weighed 257 grams and measured 10 x 9 x 6 cms. Cut section showed a multiple cysts with interspersed grey white firm and glistening areas (Figure 1). Microscopy revealed a neoplasm composed of glands lined by respiratory, gastro-intestinal epithelium surrounded by primitive loose spindle (mesenchymal) cells with islands of mature cartilage. Few primitive epithelial islands were seen. Also seen were intermingling trabeculae of medium cells with moderate atypia arranged in a reticular pattern with presence of Schiller-Duval bodies (Figure 2). A diagnosis of mixed germ cell non-seminomatous tumour comprising of immature teratoma and yolk sac (endodermal sinus) elements was made.

Fig 1: Gross examination of the right testis showing partly cystic and partly solid areas.

The left testis weighed 149 grams and measured 9 x 6 x 3 cms. Cut section showed a grey white tissue with central necrosis and haemorrhage (Figure 3). Microscopy revealed extensive necrosis and haemorrhage with high grade neoplasm composed of large round cells with enlarged hyper-chromatic nuclei and prominent nucleoli, increased mitosis arranged in sheets,

solid nests. Foci of very bizarre multinucleated giant cells resembling syncytiotrophoblasts were also seen (Figure 4). A diagnosis of mixed germ cell non-seminomatous tumour comprising of embryonal carcinoma and choriocarcinoma elements was made.

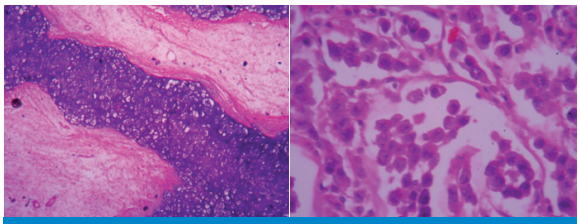

Fig 2: Photograph showing (A) mature cartilage and mesenchymal elements (Hematoxylin and Eosin, 10X) (B) organoid pattern of tumour cells with Schiller-Duval Body (Haematoxylin and Eosin, 40X)

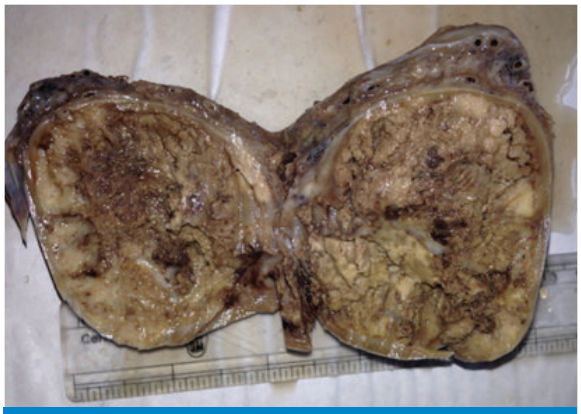

Fig 3: Gross examination of the left testis showing friable grey white tissue with necrotic and haemorrhagic areas.

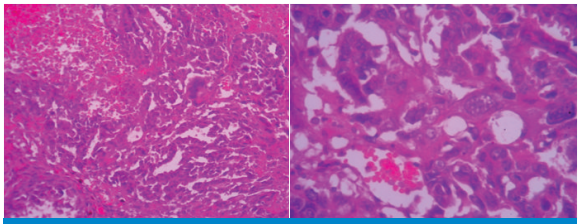

Fig 4: Photograph showing (A)bizarre multi-nucleated giant cells interspersed in a background of high grade neoplasm along with necrosis and haemorrhage (Haematoxylin and Eosin, 10X) (B) neoplastic large cells with prominent nucleoli (Haematoxylin and Eosin, 40X)

Discussion

Testicular germ cell tumours are the most common type of primary testicular malignancy[1]. Among the testicular tumours, bilateral tumours including both synchronous and metachronous testicular tumours constitute 0.5 to 5% of all testicular malignancies[1,3]. In general, men with synchronous testicular tumours were older in age at diagnosis when compared to men with metachronous testicular tumours. Also, discordant histology in the synchronous tumours was less common when compared to metachronous tumours. Men with synchronous tumour generally present at an advanced clinical stage and have a less favourable outcome as compared to men with metachronous testicular tumours[1,2]. Current guidelines contain little information related to the management of bilateral germ cell tumour. In general, Stage 1 mixed germ cell tumours are managed surgically with orchidectomy and post orchidectomy surveillance. If the patient cannot comply with surveillance or has high risk features like lympho-vascular invasion, adjuvant chemotherapy (bleomycin + etopside + cisplatin) is initiated[4]. However, since testicular cancer mainly affects men in their third or fourth decade of life, management must be tailored taking individual circumstances like family planning and patient preferences into account[5].

Although bilateral synchronous testicular tumours are characterized mostly by the presence of seminomatous histology, our reported case was a rare occurrence of bilateral non-seminomatous testicular tumour. To our knowledge, very few non-seminomatous bilateral mixed germ cell testicular tumours have been reported in literature. It is important to differentiate all the histological types present in the mixed germ cell tumour to help in prognostication and also monitoring the disease. The presence of embryonal carcinoma has a bad prognosis since there is a high chance of distant metastasis[1,6]. Elevated levels of serum alpha-foetal protein (AFP) are seen in germ cell tumours with yolk sac component whereas elevated levels of serum human chorionic gonadotrophin (HCG) are seen in germ cell tumours with choriocarcinoma component[1,3,6]. Our subject who had completed his family, post orchidectomy was counselled and advised chemotherapy as the treatment of choice. However, the subject refused to undergo any further management and is lost to follow up.

References

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