Case Report

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The Remodelled Wen Cystic Trophoblastic Tumour Testis

Anubha Bajaj*

Consultant Histopathologist, AB diagnostics, India

***Corresponding author:** Anubha Bajaj, Consultant Histopathologist, AB diagnostics, A-1 Ring Road Rajouri Garden New Delhi 110027, India

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Case Report

Cystic trophoblastic tumour of testis emerges as a distinctive trophoblastic lesion arising spontaneously or as a consequence to chemotherapy induced retrogression of choriocarcinoma. Tumefaction is preponderantly encountered within post-chemotherapy phase or following retroperitoneal lymph node dissection within subjects of testicular germ cell tumours. Neoplasm may occur within testicular mixed germ cell tumours subjected to or devoid of therapy or within post-chemotherapy phase of primary central nervous system germ cell tumours. Cystic trophoblastic tumour was previously designated as choriocarcinoma-like lesion comprised of dual subtypes as teratomatous choriocarcinoma-like lesion and cystic atypical choriocarcinoma. Tumefaction exemplifies cystic proliferation of trophoblastic cells within post-chemotherapy surgical resection specimens obtained from metastatic, non seminomatous testicular germ cell tumours. The non aggressive tumefaction is associated with indolent biological behaviour and recapitulates the clinical course of post-chemotherapy residual teratoma. Characteristically, testicular cystic trophoblastic tumour is expounded within young male subjects between 16 years to 40 years [1,2].

Testicular cystic trophoblastic tumour commonly incriminates post-chemotherapy retroperitoneal lymph nodes implicated with mixed germ cell tumours or testicular mixed germ cell tumours subjected to or devoid of therapy or post-chemotherapy primary central nervous system germ cell tumour [1,2]. Neoplasm may arise from retrogressing choriocarcinoma as excessively aggressive cells are eradicated by chemotherapy or retrogress spontaneously. Consequently, a persistent, gradually progressive, minimally aggressive component of intermediate type of trophoblast transforms into cystic trophoblastic tumour [1,2]. Additionally, cystic trophoblastic tumour may represent an intermediate stage of maturation from choriocarcinoma into teratoma [2,3]. Genes implicated within genesis of testicular carcinoma are expounded as

1. UCK1: chromosome 1
2. HPGDS: chromosome 4
3. CENPE: chromosome 4
4. TERT: chromosome 5
5. TERT/CLPTM1L: chromosome 5
6. SPRY4: chromosome 5
7. BAK-1: chromosome 6
8. MAD1L1: chromosome 7
9. DMRT1: chromosome 9
10. AFT7IP: chromosome 12
11. KITLG: chromosome 12
12. RFWD3: chromosome 16
13. TEX14: chromosome 17
14. PPM1E: chromosome 17 [2,3].

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Cystic trophoblastic tumour of testis is commonly encountered in subjects with testicular germ cell tumours following adoption of cis-platin associated chemotherapeutic agents [2,3]. Grossly, neoplasm is devoid of specific or distinctive features [2,3]. Upon microscopy, tume-faction represents with solid foci or miniature clusters of tumour cells. Neoplasm is composed of moderately pleomorphic trophoblastic cells admixed with degenerative cystic articulations of variable magnitude [3,4]. Typically, cystic structures appear < 3 millimetres and manifest with a well circumscribed perimeter. Singular or multiple layers of trophoblastic cells pervaded with abundant, eosinophilic cytoplasm appear to coat cystic articulations. Singular cell layer or several layers of trophoblastic cells with consequent configuration of intra-cystic papillary tufts or cribriform pattern may be delineated [3,4]. Layering trophoblastic cells are predominantly mononuclear and demonstrate smudged nuclear chromatin. Occasionally, multinucleated cells may concur with cytoplasmic lacunae. Additionally, trophoblastic cells may depicta squamoid countenance. However, extracellular keratin deposition appears absent. Mitotic activity is insignificant and mitotic figures are exceptionally discerned [3,4] (Figures 1 & 2, Tables 1 & 2). Testicular cystic trophoblastic tumour appears immune reactive to beta human chorionic gonadotrophin (βHCG) or inhibin. Tumour cells appear immune nonreactive to SALL4 and OCT4 [5,6].

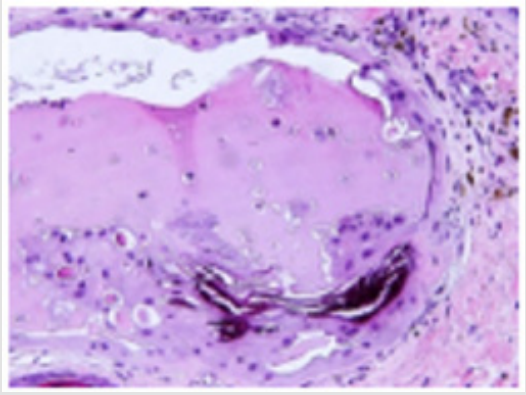

Figure 1: Cystic trophoblastic tumour demonstrating pleomorphic trophoblastic cells admixed with cystic articulations lined by trophoblastic cells imbued with abundant, eosinophilic cytoplasm. Mitotic activity is minimal [7].

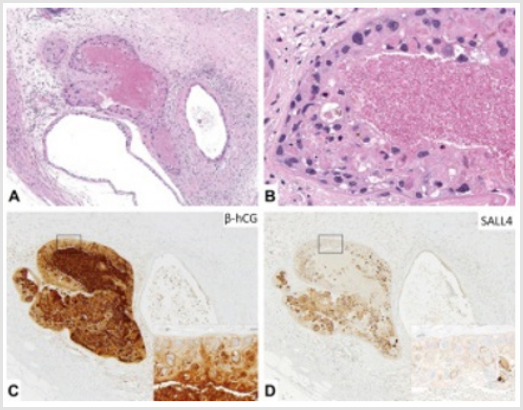

Figure 2: Cystic trophoblastic tumour delineating pleomorphic trophoblastic cells intermingled with cystic articulations lined by trophoblastic cells incorporated with abundant, eosinophilic cytoplasm. Tumour cells appear immune reactive to βHCG [8].

Table 1: World Health Organization of Testicular Germ Cell Tumours [3].

Germ Cell Tumours Derived from Germ Cell Neoplasia *in Situ*
Noninvasive lesions as germ cell neoplasia in situ /gonadoblastoma
Germinoma
Seminoma, pure
Seminoma with syncitiotrophoblastic cells
Non seminomatous germ cell tumour, pure
Embryonal carcinoma
Yolk sac tumour, postpubertal type
Trophoblastic tumours, choriocarcinoma
Teratoma, postpubertal or teratoma with somatic type transformation
Non seminomatous mixed germ cell tumours
Regressed germ cell tumour
Germ Cell Tumours Unrelated to Germ Cell Neoplasia in Situ
Spermatocytic tumour
Prepubertal (paediatric) tumours
Teratoma, prepubertal type
Dermoid cyst
Epidermoid cyst
Yolk sac tumour, prepubertal type
Prepubertal type testicular neuroendocrine tumour
Mixed prepubertal type tumours

Table 2: World Health Organization of Testicular Tumours [3].

Sex Cord/Stromal Tumours
Leydig cell tumour
Malignant Leydig cell tumour
Sertoli cell tumour
Malignant Sertoli cell tumour
Large cell calcifying Sertoli cell tumour
Intra-tubular large cell hyalinising Sertoli cell neoplasia
Granulosa cell tumour
Adult type
Juvenile type
Thecoma/fibroma group of tumours
Other sex cord gonadal/stromal tumours
Mixed
Unclassified
Tumours containing germ cell & sex cord/gonadal stromal component
Gonadoblastoma
Miscellaneous NonSpecific Stromal Cell Tumours
Ovarian epithelial tumours
Tumours of collecting ducts and rete testis
Adenoma
Carcinoma
Tumours of paratesticular structures
Adenomatoid tumour
Mesothelioma(epithelioid/biphasic)
Epididymal tumours
Cystadenoma of epididymus
Papillary cystadenoma
Adenocarcinoma of the epididymis
Mesenchymal tumours of spermatic cord and testicular adnexa

Cystic trophoblastic tumour of testis requires segregation from neoplasms as epithelioid trophoblastic tumour, placental site trophoblastic tumour, regressing choriocarcinoma or somatic malignancies as squamous cell carcinoma. Besides, lesions such as epididymo-orchitis, haematoma, inguinal hernia, hydrocele, spermatocoele or epididymal head cyst, varicocele, syphilitic gumma, tuberculoma, malignant lymphoma generally incriminating bilateral testis in elderly population or distant metastasis emerging from various neoplasms as pulmonary carcinoma, malignant melanoma or carcinoma prostate necessitate exclusion [5,6]. Testicular cystic trophoblastic tumour is appropriately discerned with histological evaluation of incriminated tumour tissue. Tumour exhibits normal to mildly elevated serum levels of beta subunit of human chorionic gonadotropin (βHCG). Upon imaging, tumefaction is associated with enlarged retroperitoneal lymph nodes [5,6]. Testicular cystic trophoblastic tumour may be appropriately subjected to extensive monitoring or follow up. Generally, neoplasm does not mandate additional therapy [5-8].

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8. Image 2 Courtesy: Science direct.

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Anubha Bajaj. Biomed J Sci & Tech Res

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