CASE REPORT

Testicular Choriocarcinoma Stage IV : Treated with Combination Chemotherapy

Rakesh Raman Sharma, Chander Mohan Sehgal, Rakesh Kapoor, Sushmita Ghoshal, F.D. Patel, S.C. Sharma

Abstract

Choriocarcinoma, a rare variety of testicular germ cell tumour, is associated with poor prognosis. A stage IV choriocarcinoma treated successfully with combination chemotherapy is being reported.

Key Words

Choriocarcinoma testis, Chemotherapy

Introduction

Choriocarcinoma of the testis is an uncommon malignancy accounting for 0.3% of pure germ cell tumour of testis (1) and occurs in second and third decade of life. Because of its aggressive nature and its rapid spread, it is associated with poor prognosis.

We report a case of testicular choriocarcinoma stage IV (lung metastasis) treated with combination chemotherapy with 'BEP' regimen including Bleomycin, Etoposide and Cisplatin and achieved excellent result.

Case Report

A 29 year old male presented to radiotherapy OPD with history of right testicular swelling for past three months following blunt trauma. Swelling was painful and gradually progressive. There was history of hemoptysis and dyspnoea on exertion for last one week. He was married with two children, there was no history of undescended testis.

On initial examination in urology department the right testis was enlarged, firm, slightly tender with transillumination test negative. Left testis was normal in size with dilated veins. The clinical impression was hematocele with or without testicular tumour. Initial investigation comprising USG revealed right testicular mass lesion.

Right sided orchiectomy was performed on the patient on 25.8.96 and histopathology report revealed choriocarcinoma of testis (Fig. 1,2). Patient was referred to Radiotherapy OPD on 13.9.96.

Fig 1. Low power photomicrograph showing the proliferating atypical trophoblatic cells along with extensive areas of haemorrhagic necrosis (H&E).

From the Department of Radiotherapy, Postgraduate Institute of Medical Education and Research, Chandigarh-160012, India.
Correspondence to : Dr. Rakesh Kapoor, Assistant Professor, Department of Radiotherapy, PGIMER, Chandigarh-160 012, India.

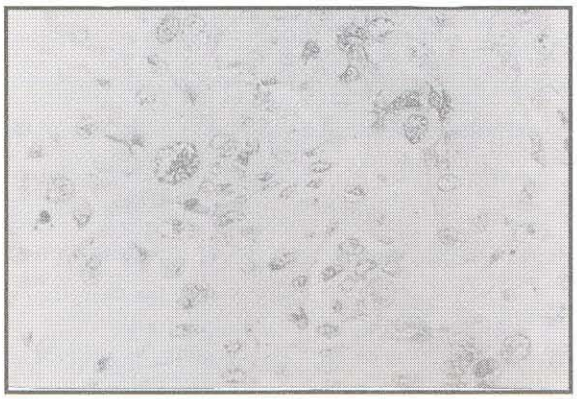

Fig 2. High power photomicrograph of the tumour displaying highly pleomorphic cells (H&E).

After orchiectomy, patient's general condition was fair and had bilateral normal vesicular breath sounds with occasional crepitations. Per abdomen, CNS and CVS examination revealed no abnormality. Local examination revealed scar mark on scrotum (on right side) ~ 3x3 cm. hard nodular, nontender stump palpable in right scrotal sac. Left testis was of normal size with normal sensations.

Complete investigative work up was done. Haemogram and biochemistry were normal. Chest X-ray showed multiple nodules in both lower zones suggestive of metastasis (Fig. 3). CECT chest also revealed lung metastasis (Fig. 4). Retroperitoneal lymphnodes were seen on CT scan of abdomen. Tumour

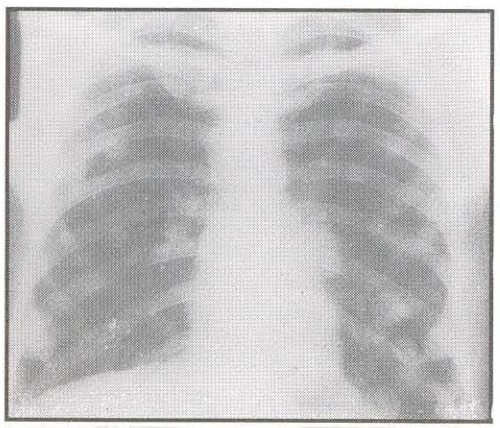

Fig 3. X-ray chest showing multiple lung metastasis.

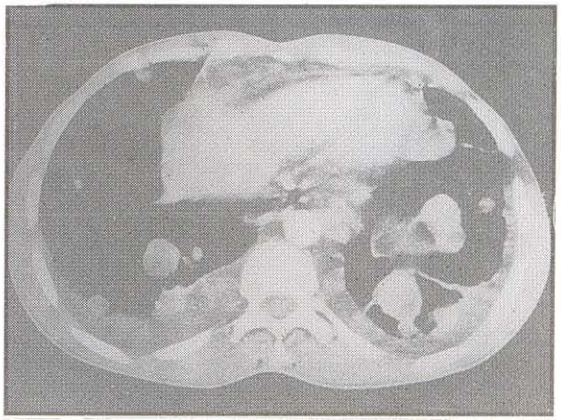

Fig 4. CECT Chest showing multiple bilateral pulmonary metastasis.

markers were done on 14.9.96 comprising Alpha Feto Protein (AFP) (2.59) and ß-human chorionic gonadotropins (ß-HCG) 1556.8 mIU/ml).

Final diagnosis made was choriocarcinoma testis Stage IV (Lung metastasis). Treatment was done under Radiotherapy unit and patients was started on combination chemotherapy with 'BEP' regimen comprising of : Inj Bleomycin – 30 units/ IVD1. Inj. Cisplatin – 30 mg/I/V D1-D3, Inj. Etoposide – 150 mg/ I/V D-1-D3.

Chemotherapy was repeated with interval of 4 weeks, six such cycles of combination chemotherapy were administered with adequate hydration and antiemetics.

Patient tolerated chemotherapy well with occasional nausea and vomiting. After third cycle of chemotherapy, patient improved both clinically and radiologically and complete response was achieved after six cylces of combination chemotherapy.

Patient has been on regular follow up including periodic investigations. Patient last seen on 2.11.99 in Radiotherapy OPD was asymptomatic. Chest X-ray and CT chest were normal (Fig. 5,6). AFP and ß-HCG were also within normal range. Our patient is thus with no evidence of disease 3 years after diagnosis of stage IV choriocarcinoma of testis.

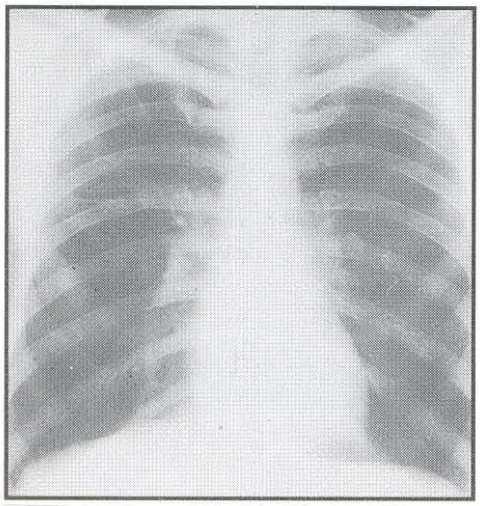

Fig 5. X-ray chest showing normal study.

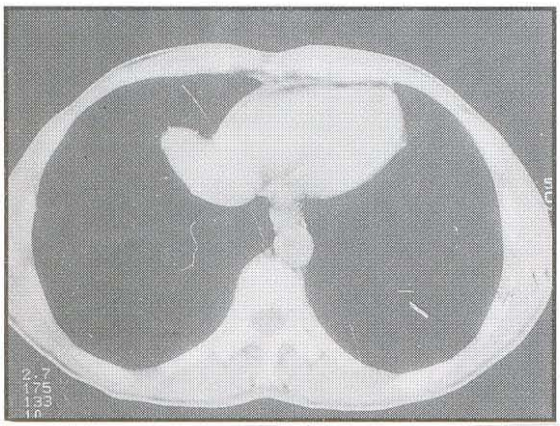

Fig 6. CECT chest showing disappearance of lung metastasis.

Discussion

Choriocarcinoma is defined as a germ cell tumour composed of a mixture of both cytotrophoblastic cells and syncytiotrophoblastic giant cells.

Over 90% of testicular neoplasms are of germ cell origin. Choriocarcinoma occurs 0.3% as a pure germ cell tumours (GCT) of testis (1) and somewhat uncommon (7%) of cases as a mixed GCT (2). Rarely tumours may be predominantly choriocarcinoma with only 5-10% identifiable other elements and present with aggressive course. Choriocarcinoma occurs exclusively in second and third decade of life (3). Our patient was 29 year old, preoperatively the diagnosis of choriocarcinoam was made with testicular swelling and raised ß-HCG levels in blood. Histopathologic examination of orchiectomy specimen confirms the diagnosis of choriocarcinoma.

Choriocarcinoma spreads differently from other germ cell tumours predominantly by haematogenous route. Although retroperitoneal lymphnodes (RPLN) may be the intial site of spread. Tumour may metastasize via blood stream to lungs followed by liver and brain respectively without spread to retroperitoneum (4). Pure choriocarcinoma may present with metastatic disease and occult testicular primaries (4,5). A hemorrhagic nodule is the typical gross appearance. Because of its aggressive nature and its tendency to disseminate in a subclinical stage, it is associated with worse prognosis.

Choriocarcinoma represent a paradox in modern oncologic management in that, histologically identical tumours are found arising in the placenta (gestational choriocarcinoma) and the gonad. The former having excellent prognosis often being cured with single agent chemotherapy with methotrexate and the latter requiring intensive cisplatin based chemotherapy used for other nonseminomatous germ cell tumours. The reason for biological differences between gestational and gonadal choriocarcinoma are not known. Most commonly used combination chemotherapy (CCT) is 'BEP' regimen with Inj. Bleomycin – 30 units/ I/V D1, Inj. Cisplatin – 20 mg/IV D1-D3, Inj. Etoposide – 100 mg/m2 I/V D1-D3.

Among all, testicular germ cell tumours are associated with worse prognosis. The presence of trophoblastic elements in the testis or high level of serum HCG (>100-500 IU/L) have proven to be poor prognostic

factors (6-10). In addition, pure choriocarcinoma carry a worse prognosis than mixed germ cell tumour because it metastize early through both vascular and lymphatic channel with death usually occurring within a year after diagnosis (11). Choriocarcinoma are extremely haemorrhagic lesions owing to the propensity for syncytiotrophoblasts to invade and form vascular structure (4).

This case demonstrates a relatively small primary tumour with extensive metastatic lesion to lungs. Thus we have a case of rare testicular malignancy that is choriocarcinoma who presented with distant spread to lungs. But has done well after treatment with judicious combination of chemotherapeutic drugs. Management of cases of choriocarcinoma is based on cisplatin based chemotherapy rather than radiotherapy as in seminomatous tumours.

References

1. Cajal SRY, Pinango L, Barat A, Moldenhauer F, Oliva H. Metastatic pure choriocarcinoma of the testis in an elderly man. *J Urol* 1987 ; 137 : 516-19.
2. Talerman A. Endodermal sinus (yolk sac) tumor elements in testicular germ-cell turmors in adults : comparison of prospective and retrospective studies. *Cancer* 1980; 46 : 1213-17.
3. Barzell WEI, Whitmore WF Jr. Neoplasms of the testis. In : Harrison JH, Gittes RF, Perlmutter AD, Stamey TA, Walsh PC (eds.) Cambell's Urology, 4th ed. WB Saunders Co. Philapdelphia. 1125-62,79.
4. Ulbigth TM. Germ cell neoplasms of the testis. *Am J Surg Pathol* 1993 ; 17(11) : 1075-91.
5. Brodshy GL. Pathology of testicular germ cell tumours. *Hematol Oncol Clin North Am* 1991; 5(6) : 1095-1126.
6. Bosl GJ, Geller NL, Cirrincione C *et al.* Multivariate analysis of prognostic variables in patients with metastatic testicular cancer. *Cancer Res* 1983 ; 43 : 3403-7.
7. Logothetis CJ, Samuels ML, Welig DE *et al.* Cyclic chemoteharpy with cyclophosphamide, doxorubicin, and cisplatin plus vinblastine and bleomycin in advanced germ cell tumours : results with 100 patients. *Am J Med* 1986 ; 81 : 219-28.
8. Segichi T, Iwasaki A, Sugao H, Nakano E, Matsuda M, Sonoda T. Clinical statistics of germinal testicular cancer. *Nippon Hinyokika Gakkai Zasshi* 1990 ; 81 : 889-94.
9. Stoter G, Sylvester R, Sleijfer DT *et al.* A multivariate analysis of prognostic factors in disseminated non-seminomatous testicular cancer. *Prog Clin Biol Res* 1988 ; 269 : 381-93.
10. Vaeth M, Schultz HP, vonder Maase H, *et al.* Prognostic factors in testicular germ cell tumours : experiences with 1058 consecutive cases. *Acta Radiol Oncol* 1984 ; 23 : 271-85.
11. Heiken JP, Balfe DM, McClennan BL. Testicular tumours : oncologic imaging and diagnosis. *Ind J Radiol Oncol Biol Phys* 1984 ; 10 : 275-87.