Case Report

Cutaneous metastasis from testicular germ cell tumour

Anjana Joel, Amit Dilip Bhatt, Abraham Samuel, Raju Titus Chacko

Department of Medical Oncology, Christian Medical College and Hospital, Vellore, India

ABSTRACT

The skin is an unusual site of metastases from solid organ malignancies. We report the case of a patient with a malignant mixed non-seminomatous germ cell tumor of the testis, presenting with cutaneous metastasis, which was treated with salvage chemotherapy.

Key words: Cutaneous metastasis, germ cell tumor, salvage chemotherapy

INTRODUCTION

The skin is a rare site of metastasis from solid organ tumors. With the increasing numbers of long-term survivors of cancers, especially testicular cancers, there is an increase in the incidence of late relapses and atypical sites of relapse or recurrence of disease. This is also associated with the increasing use of salvage chemotherapy. We report a patient presenting with cutaneous metastases from a testicular germ cell tumor who went on to progress and receive three lines of chemotherapy within 8 years of diagnosis of the primary tumor.

CASE REPORT

A 50-year-old male presented to us in August 2004 with a history of left-sided testicular swelling. On examination, there was a hard 10 × 8 cm left-sided testicular lump with a scar of a previous testicular biopsy on the skin of the left side of the scrotum. Baseline levels of serum lactate dehydrogenase (LDH), alfa fetoprotein (AFP) and beta subunit of human chorionic gonadotropin (beta-HCG) were within normal limits.

For correspondence: Dr. Anjana Joel, Department of Medical Oncology, Christian Medical College and Hospital, Vellore, India. E-mail: anjanajoel@gmail.com

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Chest X-ray was normal and ultrasonography of the abdomen revealed para-aortic lymphadenopathy. He underwent a left high inguinal orchidectomy and left hemiscrotectomy. The histopathology was non-seminomatous malignant mixed germ cell tumor consistent with embryonal carcinoma (97%) with element of teratocarcinoma (3%). Following this, he completed four cycles of adjuvant chemotherapy with Cisplatin (20 mg/m^2/day: Days 1-5) and Etoposide (100 mg/m^2/day: Days 1-5). Bleomycin was not given due to the previous history of smoking. Subsequent evaluation showed residual para-aortic lymphadenopathy, for which the patient was advised surgery. However, he defaulted treatment and was lost to follow-up.

Six years later, he presented in November 2010 with a 2-month history of an ulceroproliferative growth over the shin of the right lower limb. On examination, there was an ulceroproliferative growth 3 cm in diameter with satellite lesions over the shin [Figure 1]. Biopsy of this lesion revealed a metastatic malignant germ cell tumor. Further evaluation showed normal levels of tumor markers (LDH, AFP and beta-HCG), with no evidence of intraabdominal or intrathoracic disease. He received three cycles of salvage second-line chemotherapy with Vinblastine (0.11 mg/kg on Days 1 and 2) Ifosfamide (1200 mg/m^2/day on Days 1-5) and Cisplatin (20 mg/m^2/day on Days 1-5). There was reduction in size of the lesion and he underwent wide local excision of the tumor and skin grafting [Figure 2]. The surgical biopsy was reported as metastatic malignant germ cell tumor. Because the tumor was close to the deep resection margin, he received adjuvant local external radiotherapy to the tumor bed (66 Gy in 33 fractions). He was asymptomatic and was subsequently on regular three-monthly follow-up till May 2012, when he presented with hoarseness of voice. Computed tomography (CT) of the thorax showed a large 4 × 5 cm mediastinal nodal mass with multiple lung

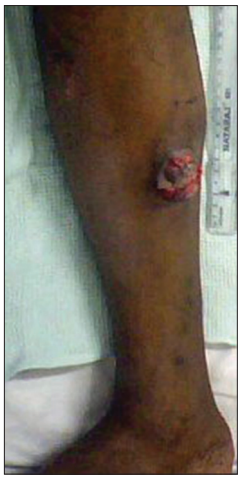

Figure 1: Ulceroproliferative growth over the right shin

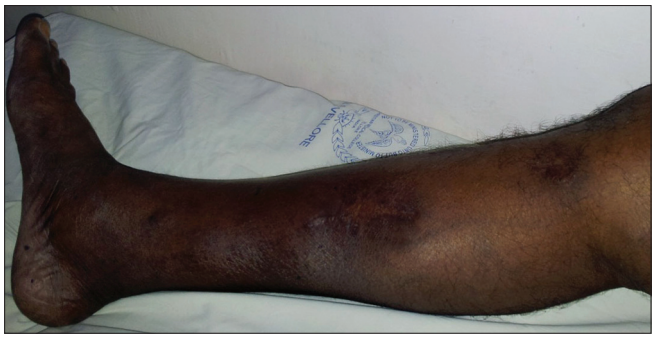

Figure 2: Post-operative photograph showing no evidence of recurrence

metastases. CT-guided biopsy of the mediastinal nodal mass was showed a malignant germ cell tumor with yolk sac component (Pan Cytokeratin and AFP positive on immunohistochemistry) and tumor markers (LDH, AFP and beta-HCG) were within normal limits. He has completed six cycles of salvage third-line chemotherapy with Carboplatin (AUC 5, on Day 1), Paclitaxel (175 mg/m^2 on Day 1) and Gemcitabine (1000 mg/m^2 on Days 1 and 8), and the repeat CT of the thorax showed minimal decrease in the size of mediastinal lymphadenopathy and lung nodules. He is currently on best supportive care.

DISCUSSION

The incidence of cutaneous metastases from various malignancies ranges from 1.4% to 4%.[1] The common solid organ malignancies associated with cutaneous metastases include lung, breast, melanoma and colon.[1] In patients with urological malignancies, the incidence of cutaneous metastases ranged between 1.1% and 2.5%.[2] Among patients with testicular germ cell tumors, there are very few cases worldwide presenting with cutaneous metastases.[3] Among this subset of patients, there is a predilection toward cutaneous metastases occurring in the upper half of the body, i.e., head and neck and chest.[3] Earlier reports and review of the literature have suggested that patients with germ cell tumors presenting with cutaneous metastases have a poorer prognosis and are usually associated with histology predominant with choriocarcinomatous elements.[4] This correlated with the highly aggressive behavior of choriocarcinoma, with high rates of metastatic disease at diagnosis.[4] However, the entity of cutaneous metastases among patients with testicular teratocarcinoma is less well known.

In this setting, clinical examination fails to differentiate between primary tumors of the skin and metastasis from a primary in the testis. Thus, it is recommended that definite histopathological confirmation of the diagnosis in the form of either a fine needle aspiration cytology or an excision biopsy of the lesion be performed. As per the International Germ Cell Consensus Prognosis for Testicular Cancer, the 5-year progression-free survival rate is 41% for tumors with non-seminomatous histology origin, with non-pulmonary visceral metastasis (including liver, bone and brain).[5]

Embryonal carcinoma of the testis is well known to have lymphatic and vascular invasion, and the presence of a predominantly embryonal component in the orchidectomy specimen is a consistent predictor of distant metastases.[6] Because they originate from the blastocyst, embryonal cell carcinoma cells retain their pluripotency (correlating with the expression of Oct ¾ on immunohistochemistry) and are able to differentiate into other histological subtypes.[7] The phenomenon of late relapse (LR) among patients with germ cell tumors of the testis is well described.[8,9] Interestingly, in a retrospective analysis published by George *et al*.,[9] the most common histological subtype among patients with LRs was yolk sac tumor (44.6%), like in our patient. Also, tumors undergo transformation to other histological types, such as teratoma, sarcoma and adenocarcinoma.[9]

A subset of patients presenting upfront with high tumor burden, who achieve a complete response with first-line Cisplatin-based chemotherapy, have a better response rates with salvage second-line chemotherapy with Vinblastine, Ifosfamide and Cisplatin.[10] In patients with refractory or relapsed disease, evidence points to the use of salvage combination chemotherapy with a regimen containing Gemcitabine and Paclitaxel.[11,12]

The entity of LR among testicular germ cell tumors warrants a lifelong follow-up. Because these tumors are usually chemosensitive, and early recurrent lesions are feasible for surgical excision, patients should be recommended yearly follow-up with a physical examination and tumor markers after completion of an initial 5-year follow-up.

Three serum tumor markers are associated with germ cell tumors of the testis: AFP, beta-HCG and LDH. Although these markers are helpful at the time of initial diagnosis and for prognostication of the disease, their major role is for subsequent follow-up of disease status after primary treatment.

The objective of this case report is to highlight the occurrence of uncommon sites of non-pulmonary metastases among patients with testicular germ cell tumors and to briefly discuss LRs among germ cell tumors and to stress on the response rates to salvage chemotherapy for a subset of patients who have achieved complete responses to first-line Cisplatin-based chemotherapy.

REFERENCES

1. Reyes CV, Jensen JA, Eng AM. Fine needle aspiration cytology of cutaneous metastasis. Acta Cytol 1993;37:142-8.
2. Saeed S, Keehn CA, Morgan MB. Cutaneous metastasis: A clinical, pathological and immunohistochemical appraisal. J Cutan Pathol 2004;31:419-30.
3. Geramizadeh B, Rad H. Cutaneous metastatsis of testicular choriocarcinoma, diagnosed by fine-needle aspiration cytology: A rare case report and review of literature. Indian J Pathol Microbiol 2012;55:406-8.
4. Shimizu S, Nagata Y, Han-yaku H. Metastatic testicular choriocarcinoma of the skin. Report and review of the literature. Am J Dermatopathol 1996;18:633-6.
5. International Germ Cell Consensus Classification. A prognostic factor based staging system for metastatic germ cell cancers. J Clin Oncol 1997;15:594-603.
6. Moul JW, McCarthy WF, Fernandez EB, Sesterhenn IA. Percentage of embryonal carcinoma and of vascular invasion predicts pathological stage in clinical stage I nonseminomatous testicular cancer. Cancer Res 1994;54:362-4.
7. Jones TD, Ulbright TM, Eble JN, Baldridge LA, Cheng L. OCT4 staining in testicular tumors. A sensitive and specific marker for seminoma and embryonal carcinoma. Am J Surg Pathol 2004;28:935-40.
8. Baniel J, Foster RS, Gonin R, Messemer JE, Donohue JP, Einhorn LH. Late relapse of testicular cancer. J Clin Oncol 1995;13:1170-6.
9. George DW, Foster RS, Hromas RA, Robertson KA, Vance GH, Ulbright TM, *et al*. Update on late relapse of germ cell tumor: A clinical and molecular analysis. J Clin Oncol 2003;21:113-22.
10. Motzer RJ, Geller NJ, Tan CC, Herr H, Morse M, Fair W, *et al*. Salvage chemotherapy for patients with germ cell tumours. The Memorial Sloan-Kettering cancer center experience (1979-1989). Cancer 1991;67:1305.
11. Bokemeyer C, Oechsle K, Honecker F, Mayer F, Hartmann JT, Waller CF, *et al*. Combination chemotherapy with Gemcitabine, Oxaliplatin and Paclitaxel in patients with cisplatin- refractory or multiply relapsed germ cell tumours: A study of the German Testicular Cancer Study Group. Ann Oncol 2008;19:448.
12. Einhorn LH, Brames LJ, Juliar B, Williams SD. Phase II study of Paclitaxel plus Gemcitabine salvage chemotherapy for germ cell tumours after progression following high dose chemotherapy with tandem transplant. J Clin Oncol 2007;25:513.

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