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Pure Stage I Seminoma with an Elevated hCG of 25,265 mIU/ml: A Case Report

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ABSTRACT

We report a histologically pure stage 1 seminoma with an elevated human chorionic gonadotropin (hCG). A 38 year-old man was referred for the evaluation of the left testicular swelling. He showed an elevated serum hCG level of 25,265 mIU/ml with normal a fetoprotein and lactate dehydrogenase. Imaging showed heterogeneous tumor without any metastatic lesions. We conducted 4 courses of chemotherapy before detecting hCG nadir. The final pathological report showed pure seminoma with syncytiotrophoblastic cells but no choriocarcinoma components. The patient remains disease free until present time. The case raised several questions regarding diagnosis and treatment strategy for bulky testicular seminoma.

Introduction

Approximately 30% of patients with testicular seminoma showed mild elevation of human chorionic gonadotropin (hCG) due to the presence of syncytiotrophoblastic cells (STC). However, it is reported that hCG levels of patients with seminoma were less than 500 mIU/ml thus far.[1,2] Seminoma patients with extremely high level of hCG are unusual and raise several questions of treatment strategy. 1) In the aspect of diagnosis, it is crucially important whether it is secreted from STCs or from co-existent choriocarcinoma components, which means the tumor is not seminoma but non-seminomatous germ cell tumor (NSGCT). In case of a bulky testicular tumor, it requires longer time for pathologists to examine the whole tumor. 2) In terms of treatment especially with chemotherapy, regimens and cycles were different between seminoma and NSGCT. Here we present a case of pathologically diagnosed pure stage 1 bulky seminoma with elevated hCG level of 25,265 mIU/ml which was the highest ever reported.

Case presentation

A 38 year-old man was referred for the evaluation of the left asymptomatic testicular swelling. He showed a highly elevated serum hCG level of 25,265 mIU/ml (Architect® βHCG. upper normal value, 5 mIU/ml), normal serum levels of α fetoprotein and lactate dehydrogenase. Magnetic resonance imaging (MRI) demonstrated a bulky heterogeneous testicular tumor and computed tomography (CT) and bone scan showed no metastatic disease. The resected tumor was 10 cm × 7 cm × 13 cm in size with sporadic hemorrhage (Fig. 1). Histological examination of the tumor showed a pure

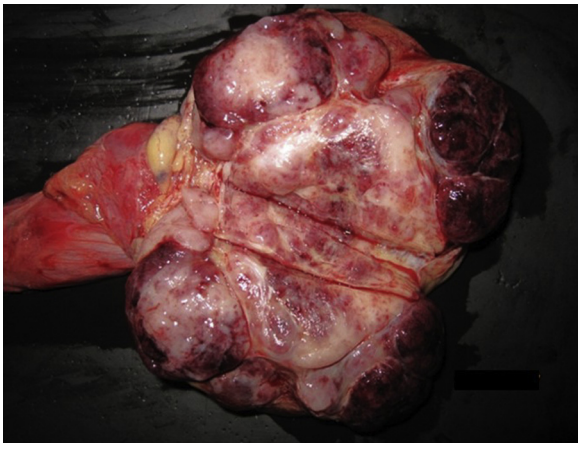

Figure 1. Macroscopic appearance shows yellow solid segmental tumor with sporadic hemorrhage.

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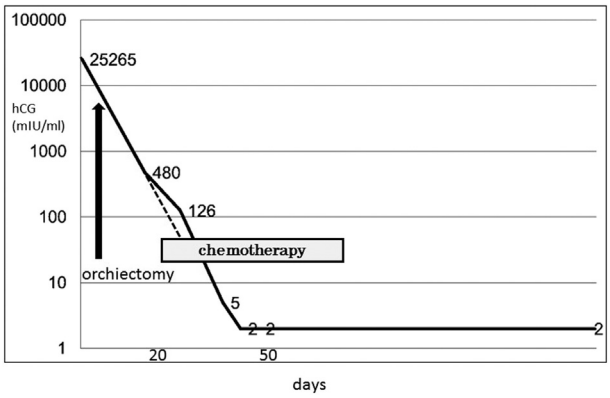

Figure 2. Postorchiectomy hCG values. Dotted line indicates estimated hCG decline in accordance with its halflife.

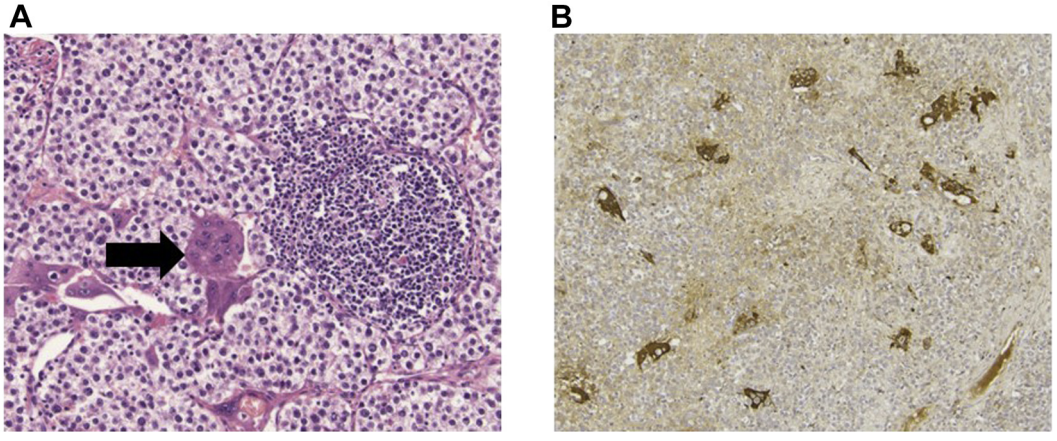

Figure 3. A. Typical seminoma with pronounced infiltration of lymphocytes. Arrow indicates STC. HE (original ×200). B. Elements of choriocarcinoma were not detected on serial sections. Many STCs are strongly stained by hCG immunostaining (original ×100).

seminoma with large amount of STCs. Postorchiectomy serum hCG level did not declined according to its half-life so that we assumed that micrometastases of choriocarcinoma might exist elsewhere. We started re-examination of the extirpated tumor with further comprehensive step sectioning in order to detect choriocarcinoma components. At that time the patient was diagnosed as seminoma pT2N0M0S2 with stage 1 S (good prognosis at International Germ Cell Consensus Classification: IGCCC) because hCG showed high level without accordance with its half-life.

Eventually, we initiated 3 courses of chemotherapy with bleomycin, etoposide, and cisplatin (BEP) and one course with etoposide and cisplatin (EP) from postoperative day 20 when hCG was 480 mIU/ml. The hCG level was undetectable by postoperative day 47, and he remains disease free up to the present time (Fig. 2). A subsequent final histological report revealed non-existence of choriocarcinoma (Fig. 3A, B).

Discussion

It is common that patients with testicular seminoma showed slight elevation of hCG due to the presence of STC. Importance of preoperative elevated hCG for patients with stage 1 seminoma is controversial. Several reports have suggested that elevated hCG had a poorer prognosis compared with typical seminoma of similar stage,[3] however, Bruns et al suggested that pre-treatment elevated hCG appears to have neither importance nor predictive value in the setting.[1] The elevated levels of hCG reported were usually less than 500 mIU/ml in patients with stage 1 seminoma. Bjurlin et al reported that histologically pure stage 1 seminoma patient with an elevated beta-hCG of 4497 IU/L, who was treated with orchiectomy and chemotherapy.[4] On the other hands, Kurimoto et al reported that stage 1 seminoma patient with beta-hCG level of 800 IU/L treated orchiectomy alone.[5]

Though final pathological report demonstrated that the tumor was pure seminoma, we initially assumed that it was choriocarcinoma associated with seminoma. Here we learned a couple of lessons discussed below.

Firstly, there could be a case of pathologically proven pure stage 1 seminoma which shows as high as more than 25,000 mIU/ml of HCG. The reason of extremely high hCG level was uncertain; however, it is possible that it was derived from massive presence of STCs or from micrometastases of choriocarcinoma existed elsewhere. Current pathological or radiological modalities are not able to determine the problem.

Secondly, physicians generally conducted chemotherapy with carboplatin monotherapy for patients with stage 1 seminoma, 3 courses of BEP for those with stage 1S seminoma, and 4 courses of BEP for metastatic NSGCT patients. In this case we administered 4 courses of BEP before obtaining hCG nadir and final pathological report. We believe that the choice of chemotherapy regimen is a clinically difficult decision in such a unique case. Giving that final pathological report showed pure seminoma, 4 courses of BEP we performed might be an overtreatment for this patient.

We report a histologically pure stage 1 seminoma with an extremely elevated hCG which is, to our knowledge, the highest ever reported.

Conflicts of interest

The authors declare that they have no conflict of interest.

Internal review board approval was not required for the retrospective case report in our institution. Informed consent was obtained from the patient.

References

1. Bruns F, Raub M, Schaefer U, Micke O. No predictive value of βhCG in patients with stage I seminoma – results of a long-term follow up study after adjuvant radiotherapy. *Anticancer Res.* 2005;25:1543–1546.

2. Stephenson AJ, Gilligan TD. Neoplasms of testis. In: Wein AJ, Kavoussi LR, Novick AC, et al., eds. *Campbell–Walsh Urology*. 10th ed. Philadelphia: Elsevier; 2011:837–870.
3. Weissbach L, Bussar-Maatz R, Löhrs U, et al. Prognostic factors in seminomas with special respect to HCG: results of a prospective multicenter study. Seminoma Study Group. *Eur Urol*. 1999;36:601–608.
4. Bjurlin MA, August CZ, Weldon-Linne M, Totonchi E. Histologically pure stage I seminoma with an elevated beta-hCG of 4497 IU/l. *Urology*. 2007; Nov;70(5): e13–e15.
5. Kurimoto S, Aruga S, Kashibuchi K, et al. Seminoma with highly elevated human chorionic gonadotropin-β subunit. *Jpn J Urol Surg*. 2010;23(6): 855–857.