Giant Testicular Mixed Germ Cell Tumor

A Case Report

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Key Words

Testis · Mixed germ cell tumor

Abstract

Objective: We report a case that we believe to be the largest example of a testicular mixed germ cell tumor with a clearly defined histology pattern. **Clinical Presentation and Interventions:** A 21-year-old patient consulted a urologist concerning a giant testicular mass. At the time of presentation the tumor measured 29 × 20 × 16 cm, with a weight of 4,850 g. Serum α -fetoprotein was over 15,000 ng/ml, while β -human chorionic gonadotropin was normal. Chest X-ray and CT revealed multiple bilateral metastases. Histopathology revealed a mixed germ cell tumor containing 80% of yolk sack tumor, 10% of teratoma and 10% of embryonal carcinoma. Orchiectomy and chemotherapy were successful in the treatment of primary tumor and bilateral lung metastases. **Conclusion:** This tumor grew to extraordinary dimensions because of the patient's failure, due to fear, lack of knowledge and embarrassment, to seek medical help and to health professionals' negligence when performing regular check-ups.

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Introduction

Malignant tumors of the testis are rare but constitute the most common tumor in men between the ages of 25 and 34 [1]. Over 90% of testicular cancers develop in germ cells giving two main types of testicular germ cell tumors: seminomas and nonseminomas. The latter include embryonal, teratoma, choriocarcinoma and yolk sack tumors. Tumors with features of two or more cell types are termed mixed germ cell tumors and are classified as nonseminomas [2].

Case Report

A 21-year-old Caucasian consulted a urologist concerning a bizarre intrascrotal mass the size of a rugby ball. The patient had noticed testicular enlargement 6 years prior to consultation, but was too ashamed to seek help. He did not participate in sports or gym classes at school and by wearing large pants he managed to hide his condition from his family, a widower father and a sister. He passed an army recruitment check-up and another medical check prior to enrollment in a college without revealing his disease.

At the time of presentation, the tumor measured 29 × 20 × 16 cm. It arose from the left testicle and grew to the left inguinal region. The testis was hard and elastic when palpated. Gynecomastia was not present. There was no history of cryptorchidism. Ultrasound examination revealed a heterogeneous echo structure of the testis. Serum β -human chorionic gonadotropin (β -HCG) level was normal while α -fetoprotein (AFP) was over 15,000 ng/ml. Lactate dehydrogenase (LDH) was 210 IU/l and alkaline phosphatase 84 IU/l. A chest X-ray and CT of the thorax revealed multiple bilateral metastases in

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Fig. 1. Tumor morphology (**A, B**) and microphotographs showing the yolk sack (**C**) and teratomatous components (**D**) of the testicular mixed germ cell tumor.

the lungs. Abdominal CT scanning showed no signs of lymph node enlargement.

The patient underwent high left orchiectomy. Total tumor weight was 4,850 g with solid tumor tissue, necrosis and 1,500 ml of surrounding serous fluid. The pathological diagnosis was of mixed germ cell tumor; the tissue contained 80% of yolk sack tumor, 10% of teratoma and 10% embryonal carcinoma. There was no invasion of the scrotal wall.

The patient received 5 cycles of platinum-based chemotherapy. Five months after surgery, and 1 month after completing the 5th cycle of chemotherapy, control CT scanning showed no signs of lung metastases or of lymph node enlargement. Laboratory analysis showed that AFP was 2.46 ng/ml, β -HCG was negative, alkaline phosphatase was 48 IU/l and LDH 206 IU/l. Retroperitoneal lymph node dissection was not performed. Ten months after surgery both AFP and β -HCG were normal and there were no signs of lymph node enlargement nor any signs of lung disease on CT scans.

Discussion

Review of the literature shows several reports of giant testicular tumors. Interestingly, the majority of these reports were from Japan where the incidence of these tumors is low [3–5, 7]. Kin et al. [3] reported a testicular tumor $32 \times 28 \times 28$ cm with a calculated weight of 7 kg in a 38-year-old patient, who showed serum levels of LDH, AFP and β -HCG of 2,040 U/l, 240 ng/ml and 5.6 ng/ml, respectively. These authors' review of 42 cases reported in the Japanese literature suggested that this was the largest such tumor on record. That patient was treated initially with 3 cycles of VIP chemotherapy, followed by high orchiectomy and retroperitoneal lymph node dissection. The histologic examination of resected specimens revealed only necrosis and fibrosis. The authors believed that initial chemotherapy followed by surgery was the management approach of choice for the condition. Other case reports have described giant seminomas, teratomas and a malignant fibrous histiocytoma [4–8].

In our case we performed orchiectomy followed by chemotherapy. Surgical treatment is a challenge in giant testicular tumors since inguinal orchiectomy, mandatory in testicular tumors, is complicated by tumor size. We made an inguinal approach, clamped blood vessels and a spermatic cord, then made a scrotal approach to finish the orchiectomy. We believe this is the second largest testicular mixed germ cell tumor reported to date and, to the best of our knowledge, the largest with a clear histology pattern.

Conclusion

Testicular enlargement is easily noticed and should warn the patient to seek medical advice. It is therefore surprising that giant testicular tumors can be found where health services are available. This unusual case shows that further efforts in public health education are necessary since many people are still ashamed to seek medical advice concerning genital problems. This case also demonstrates a general requirement that medical examinations should always be performed thoroughly, even if they are undertaken only to fulfill administrative requirements.

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Fig. 2. CT scans showing lung metastases (first row) and control CT scan 10 months after surgery with no signs of lung disease (second row).

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