Radiat Med (2007) 25:303–305
DOI 10.1007/s11604-007-0137-3

CASE REPORT

Testicular seminoma presenting with mediastinal lymphadenopathy and gynecomastia

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Received: January 4, 2007 / Accepted: March 1, 2007

Abstract Chest computed tomography (CT) of a 22-year-old man with a history of long-term low fever and nonproductive cough demonstrated lymphadenopathy in the superior, middle, and posterior mediastinum. Slight bilateral gynecomastia was also observed on the CT scan. Subsequent physical examination and ultrasonography revealed a left testicular mass, and abdominal CT showed retroperitoneal lymphadenopathy. Left orchiectomy was performed, with the histological examination confirming the diagnosis of seminoma.

Key words Computed tomography · Gynecomastia · Seminoma

Introduction

Although testicular cancer is uncommon, it occurs relatively frequently in young men and requires prompt diagnosis for a good prognosis.[1] Among testicular germ cell tumors, seminoma is most common.[2,3] Although intrathoracic metastases occur frequently with nonseminomatous germ cell tumors, they are also seen with some seminomas.[1–4] Gynecomastia can be an initial finding of testicular cancers, approximately 3% of which are caused by testicular tumors.[5,6]

Here we report a case of testicular seminoma diagnosed as a mediastinal mass at the original presentation. Chest computed tomography (CT) detected mediastinal lymphadenopathy and gynecomastia, which led to the immediate diagnosis of unexpected testicular seminoma. To our knowledge, this is the first report to mention this combination of findings on chest CT in the diagnosis of testicular germ cell tumor.

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Case report

A 22-year-old man was referred to our hospital with the diagnosis of a mediastinal tumor. His chief complaint was continuous low fever (37.0°–37.5°C) accompanied by nonproductive cough for approximately 1 month. He did not demonstrate any abdominal or scrotal symptoms. Chest radiographs showed abnormal enlargement of the superior mediastinum. The patient's initial laboratory values were within normal limits except for an elevated lactate dehydrogenase level of 422 IU/l and an elevated C-reactive protein level of 15.6 mg/dl. Chest CT confirmed multiple enlarged lymph nodes in the superior, middle, and posterior mediastinum. Slightly enlarged left supraclavicular lymph nodes were also demonstrated. Additionally, nonpalpable bilateral gynecomastia was detected on the CT scan (Fig. 1). Thus, testicular cancer was suggested rather than other malignant tumors, including lymphoma. Neither a mass nor a nodule was demonstrated in the lungs.

Subsequent physical examination and ultrasonography revealed a left testicular mass measuring approximately 2.5 × 2.1 cm. Additional laboratory examination demonstrated an elevated β-human chorionic gonadotropin (β-HCG) level of 150.4 mIU/ml; other tumor markers (α-fetoprotein, squamous cell carcinoma antigen, and carcinoembryonic antigen) were within

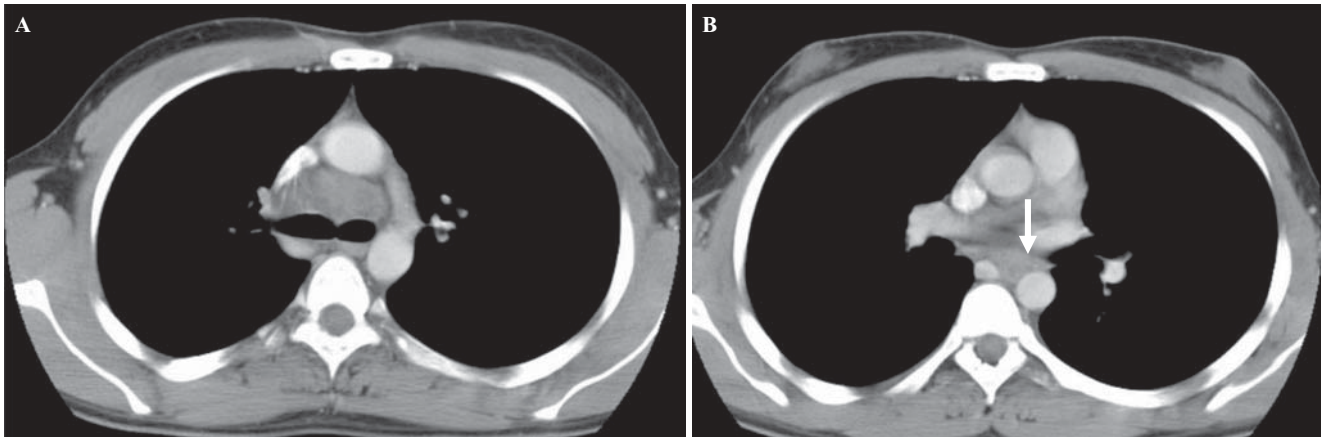

Fig. 1. Computed tomography (CT) of the chest for a 22-year-old man with mild fever and an abnormal shadow on chest radiographs. **A** This 7.5 mm thick contrast-enhanced CT scan demonstrates extensive lymphadenopathy in the middle mediastinum. **B** This 7.5 mm thick contrast-enhanced CT scan shows bilateral gynecomastia. An enlarged lymph node is seen adjacent to the esophagus (*arrow*)

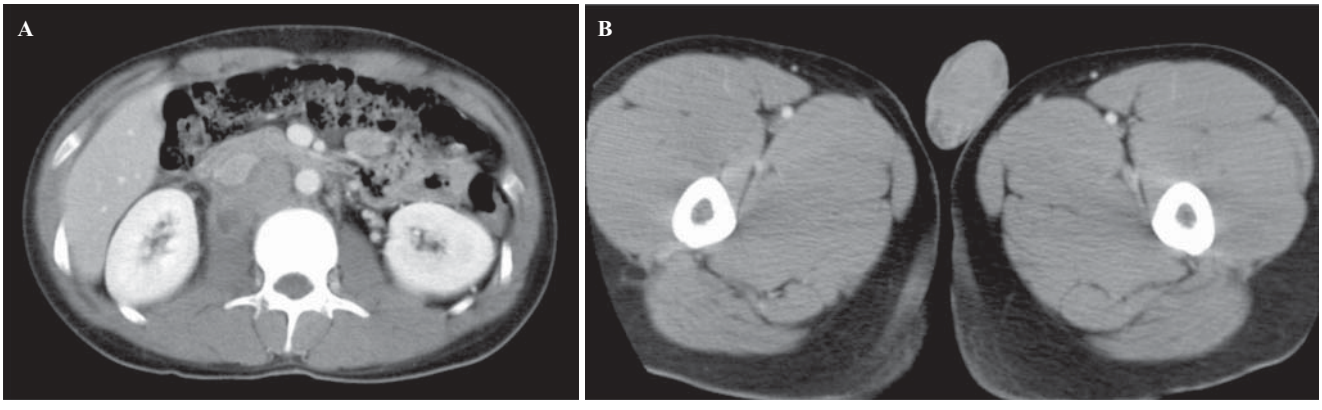

Fig. 2. Abdominal CT (10 mm thickness). Severe retroperitoneal lymphadenopathy (**A**) and a left testicular mass (**B**) are demonstrated.

normal limits. Abdominal CT confirmed the left testicular mass and identified severe retroperitoneal lymphadenopathy without inguinal lymphadenopathy (Fig. 2). A high inguinal left orchiectomy was performed, and the pathology examination demonstrated classic seminoma.

After four courses of chemotherapy using cisplatin, etoposide, and bleomycin, complete remission was achieved and has been maintained for 4 years. Metastatic lymph nodes and gynecomastia decreased in size progressively over time on follow-up CT scans and eventually became indistinguishable.

Discussion

Intrathoracic metastases of testicular seminoma have been discussed in several articles. In comparison with nonseminomatous germ cell tumors, metastases occur less commonly, with a reported incidence of 1%–15%.[1–4] With seminoma, mediastinal lymph nodes are more favored sites of involvement than lung fields, and nodal metastases are usually contiguous along the thoracic duct following retroperitoneal lymphadenopathy, compared with the pattern of random distribution seen with nonseminomatous germ cell tumors.[1,3,4] Thus, posterior and middle mediastinal nodes are the first involved intrathoracic nodes in patients with seminoma, followed by the upper mediastinal and cervical nodes. The anterior mediastinum is seldom involved even in advanced cases, which is a clue for distinguishing metastatic testicular cancers from primary tumors of thymic origin.[3,7] Therefore, when diagnosing metastatic testicular seminoma on CT, it seems to be helpful to detect the contiguous distribution of intrathoracic lymphadenopathy without anterior mediastinal involvement.

Gynecomastia is also a suggestive finding of testicular cancers. The reported incidence of testicular tumors in a series of men with gynecomastia is approximately 3%.[5,6] In addition, gynecomastia is an initial symptom in 7%–15% of patients with testicular tumor and occasionally precedes the diagnosis of developing testicular cancers.[5,8,9] Among testicular neoplasms, it has been reported that Leydig cell tumors frequently present with gynecomastia, with the incidence reported as 15%–30%.[8,10] Testicular germ cell tumors, including seminoma and teratoma, can also present with gynecomastia, particularly in cases of tumors secreting β-HCG, which stimulates estrogen synthesis in normal Leydig cells.[5,11,12] Thus, the possibility of a testicular tumor should be considered in all male patients presenting with gynecomastia. It should be also noted that gynecomastia sometimes develops as a side effect of chemotherapy for testicular cancers, even though complete remission is achieved.[11] This phenomenon is not associated with clinical recurrence and should be differentiated from pretreatment gynecomastia.

Intrathoracic lymphadenopathy and gynecomastia may be initial findings in men with testicular cancer, but we could not find any reports mentioning this combination of findings. In our case, the patient was referred to our hospital with a known mediastinal mass on chest radiographs; subsequent chest CT demonstrated contiguous lymphadenopathy in the mediastinum and slight gynecomastia. As our case showed, potential testicular cancers should be taken into consideration in young male patients presenting with mediastinal lymphadenopathy. Gynecomastia suggests testicular cancer as the underlying cause. In addition, contiguous mediastinal lymphadenopathy without anterior mediastinal involvement may be a clue to the diagnosis of metastatic testicular seminoma rather than other testicular tumors. We think that our experience can help in future radiological diagnoses of a mediastinal mass.

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