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Left Neck Mass: An Unusual Presentation of Testicular Cancer in a 50-Year-Old Man Case Report Seminoma - Havard'

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Abstract **Case Report**

Advanced testicular germ cell tumors commonly involve cervical lymph nodes. In most circumstances, the diagnosis of germ cell tumor is established before the neck disease is noted. In rare cases, these tumors have been found along with cervical lymphadenopathy in patients with a previously undiagnosed primary tumor. In this article, we report the unusual case of a 50-year-old man whose metastatic seminoma initially manifested as an asymptomatic neck mass. This finding reinforces the need to include metastatic disease in the differential diagnosis of neck masses. Our discussion of this case focuses on the appropriate management of cervical metastases of germ cell tumors.

Keywords: germ cell tumor, neck disease, diagnosis of neck masses.

INTRODUCTION

The incidence of testicular tumors in Bangladesh is approximately 5 per 1,000,000 males; usually in the 15-to-30-year age group. Germ cell tumors account for 98% of all testicular malignancies (SEER). Among patients with testicular carcinoma, the incidence of neck metastasis has been reported to range from 4.5 to 15%; in an estimated 5% of these cases, a neck mass is the initial sign [1]. Although the presence of cervical metastasis is believed to be a marker for advanced disease, even advanced testicular cancer is thought to be curable with appropriate therapy [2]. Overall cure rates for germ cell tumors are in the range of 90 to 95%, but maintenance of these cure rates requires structured and timely approaches to therapy [3]. The oncologist plays a central role in the structured management of a patient when the germ cell tumor manifests as a neck mass. In this article, we report an unusual case of metastatic seminoma that initially manifested as a neck mass. Our discussion of this case focuses on the evaluation and management of germ cell tumors with cervical metastases.

CASE REPORT

A 50-year-old man presented with a chief complaint of a left sided neck mass. The patient had noted a left supraclavicular neck mass 3 weeks earlier. The mass was asymptomatic. Review of head and neck systems were negative. On physical examination, the patient was noted to be well developed and well nourished, and he communicated easily without assistance. Findings on examination of the ears, nose, and oral cavity were normal. Further examination detected no suspicious lesions in the nasopharynx, oropharynx or hypopharynx. The neck mass measured 4cm in diameter and was located at the base of the neck just above the left clavicle. It was non-tender and fixed. No other cervical lymphadenopathy was noted. Core needle biopsy revealed metastatic adenocarcinoma. He denied any history of anorexia, vomiting, alteration of bowel habit, hematemesis, melena, weight loss and loss of appetite. His tumor markers including S.CEA, CA-19.9, AFP were normal. Upper GI endoscopy and colonoscopy were normal. Contrast enhanced CT scan of whole abdomen revealed enlarged conglomerated lymph nodes at para-caval and para-aortic region about 11× 9 cm. Contrast enhanced CT scan of chest showed

no abnormality. Core biopsy and histopathology from abdominal lymph node yielded granulomas with tumor necrosis. Cytology demonstrated malignant cells consistent with metastatic poorly differentiated carcinoma. On this basis, melanoma and lymphoma were ruled out by immunohistochemical analysis which revealed that the malignant cells were negative for cytokeratin, LCA, S-100, CK 20. Given the diagnosis of poorly differentiated carcinoma on needle aspiration, incisional biopsy was performed from left supraclavicular lymph node to establish a definitive diagnosis. Findings on histologic examination were consistent with metastatic seminoma. The diagnosis of seminoma was confirmed by further immunohistochemical studies (PLAP, CD 117). B-HCG and LDH were raised to 96.3mIU/L and 447 U/L respectively. Following the diagnosis of the neck mass, testicular examination revealed the absence of right testicle. He admitted that right sided orchiectomy was done 5 months back for suspected testicular torsion but no histopathology was performed. The patient was diagnosed with stage-III seminoma and began chemotherapy with Bleomycin, Cisplatin and Etoposide (4 cycles BEP and 1 cycle EP). He did not complete the planned treatment and lost to follow up due to COVID-19 pandemic situation. He revisited our department 6-month later and was reevaluated. He had no evidence of disease in neck but CT scan whole abdomen revealed enlarged retroperitoneal lymph nodes measuring about 4.4×3.7 cm. and tumor markers were normal (B-HCG <2 mIU/L and LDH 166 U/L). Considering his financial ability he was referred to surgical oncology for excision of retroperitoneal mass without further investigations.

DISCUSSION

Testicular germ cell tumors can be divided into two broad categories: *seminomas* and *nonseminomatous germ cell tumors* (NSGCTs). Seminomas account for approximately 60% of all testicular germ cell tumors. The incidence of seminoma is highest among men aged 30 to 39 years and it declines steadily with advancing age (McGlynn et al 2003) [4]. Such a tumor in a 50-year-old is exceedingly rare. Treatment strategies vary for seminomas and NSGCTs and also according to the tumor stage in both categories. As per CT finding of an 11-cm collection of matted retroperitoneal lymph nodes and supraclavicular lymph node, he was diagnosed as stage-III seminoma. Patients with testicular seminomas usually present with symptoms, such as a scrotal mass but involvement of cervical lymph node is believed to be a marker for advanced disease. When a neck mass is found to be a metastatic germ cell tumor, it is usually in the setting of a known primary tumor and other known metastatic disease, particularly beneath the diaphragm [5]. Although some authors have estimated that as many as 5% of germ cell tumors initially manifest as a neck mass [6], case reports of such a phenomenon are rare. Our superficial search of the MEDLINE database dating from 1966 turned up only a handful of previously reported cases of a metastatic germ cell tumor that initially manifested as a neck mass [7]. Such a finding was described by Soboroff and Lederer in a single case report, by Zeph *et al*., in 1 of 5 patients, and by Lee and Calcaterra in 2 of 6 patients (lee 2002) [8, 9]. None of these four patients was older than 34 years. In extraordinarily unusual cases, a neck mass is the only manifestation of a germ cell tumor. With respect to these cases, it is important to remember that as many as 10% of seminomas may be extragonadal in origin; such tumors typically occur in the anterior mediastinum, retroperitoneum, or pineal region [10]. Cervical lymph node metastasis from germ cell tumors may occur through either lymphatic or hematogenous channels. While all germ cell tumors have a propensity for lymphatic spread, NSGCTs are much more likely than seminomas to demonstrate hematogenous spread [11]. When lymphatic spread does occur, it follows characteristic lymphatic pathways. Both right and left-sided testicular tumors spread first to the retroperitoneal nodes and then move superiorly along the thoracic duct. As a consequence, lymphatic metastases tend to be contiguous, spreading from the abdomen into the chest and finally into the neck [12]. Depending on thoracic duct anatomy, germ cell tumors are found exclusively within the left supraclavicular fossa, though aberrant cross over sometimes occur. As for hematogenous spread, one possible mechanism includes metastatic reflux through Batson's paraspinal venous plexus, driven by transient increases in intra-abdominal and intrathoracic pressure [13]. This mechanism has been presumed to allow retroperitoneal renal cell cancers to metastasize to the head and neck [14]. The phenomenon of hematogenous spread may also explain the metastatic spread of seminoma to other areas of the head and neck, such as the orbit, sphenoid sinus, temporal bone, and jaw [15].

Treatment for advanced germ cell tumors is still evolving. The treatment depends on the histology of the tumor (seminoma vs. NSGCT), the site of metastasis and serum concentrations of tumor markers [16]. When cervical lymph nodes are involved, the tumor is classified as stage III and initial treatment strategy is chemotherapy. For NSGCTs, tumor markers may be followed up; salvage chemotherapy is indicated when tumor markers such as human chorionic gonadotropin or alpha-fetoprotein remain elevated. When tumor markers normalize but the neck mass persists, surgical resection is indicated to remove any recurrent disease, thereby eliminating the possibility of a reversion of mature teratoma to a more malignant phenotype and preventing further tumor spread [17]. In most cases, selective neck dissection is sufficient to provide adequate exposure for safe and aggressive resection of cervical disease [18]. Such neck dissection may be accompanied by simultaneous resection of retroperitoneal or thoracic disease if metastases persist in these areas as well [19]. The management of seminoma is less clear and may be more controversial than that for NSGCT [20]. Seminomas are more

radiosensitive than are NSGCTs. So, management of postchemotherapy residual masses (as studied in the retroperitoneum) might include radiotherapy, observation, or surgical resection; though no studies address cervical seminoma specifically. However, researchers who did consider seminoma together with NSGCT in the more general category of germ cell tumors continue to recommend surgical resection of residual neck masses following chemotherapy [21]. Whether postchemotherapy resection is pursued or not, appropriate diagnosis necessitates that a clinical oncologist be aware of a metastatic germ cell tumor that might manifest as a neck mass as our patient demonstrates, these tumors are occasionally found in this unexpected age group and even in the absence of a previously diagnosed primary tumor.

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