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Case Report

Rare Presentation of Burned-Out Testicular Seminoma [☆]

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ABSTRACT

A 28 year old male who complained of abdominal pain over the past several months was found on CT to have lymphadenopathy along the right aspect of the inferior vena cava. The patient was subsequently seen by an oncologist where further work up of the lymphadenopathy was performed. A MR of the abdomen demonstrated right aortocaval and para-caval lymph nodes measuring to 3.7cm. A testicular ultrasound was then performed, which demonstrated an apparent peripheral focal hypoechoic region with no associated internal vascularity within the right testes. Biopsy of the retroperitoneal lymph nodes pathologically confirmed the diagnosis of seminoma. Keywords: Seminoma, Testicular Cancer, Retroperitoneal Adenopathy, Oncology, Burned-Out Tumor

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Introduction

Burned-out testicular tumor is a rare phenomenon, which describes the finding of a metastatic germ cell tumor with an occult/regressed primary testicular lesion. It is seen in approximately 10% of primary germ cell tumors with some institutions reporting less than a 1% incidence [1,2]. Although it is uncommon, it is imperative that the disease is not missed due to the serious impact the presence of a primary testicular tumor has on treatment. We present a case of a patient with retroperitoneal lymphadenopathy, who was subsequently found to have a primary lesion within the right testicle.

Case Report

A 28-year-old male presented to our institution after experiencing several months of vague abdominal pain. The patient was originally seen at an outside institution, where an abdominal CT scan was performed and demonstrated multiple enlarged right retroperitoneal lymph nodes adjacent to the inferior vena cava, suspicious for malignancy (Fig. 1).

At the time of presentation to our institution, the patient denied constitutional symptoms of fever, chills and night sweats. In addition, the patient denied feeling fatigue or lethargic. The patient did endorse a non-specific weight loss of five pounds. An MR abdomen with and without contrast

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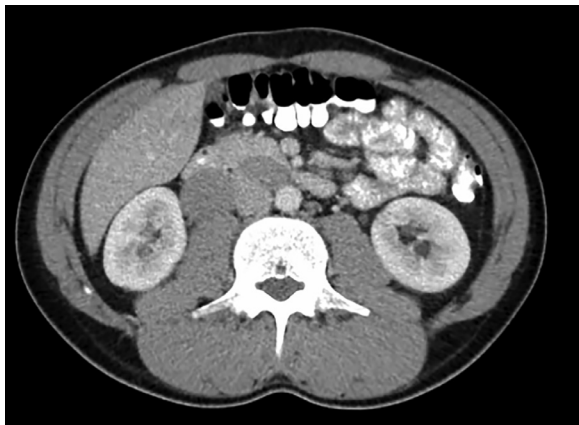


Fig. 1 – Contrast enhanced CT, axial image at the level of the interpolar region of the kidneys. demonstrates enlarged lymph nodes lateral to the IVC at the level of the right renal hilum. In addition, enlarged aortocaval lymph nodes are identified as well.

was performed and revealed the presence of both right paracaval and aorto-caval lymphadenopathy with the largest node measuring to 3.7 cm (Fig. 2). Blood test for alpha fetoprotein at this time was within normal limits at 1.3 ng/mL (Normal <6.1 ng/mL) as well as the patient's beta-hCG level.

Based on these findings and given the patient's age, concern for a primary testicular malignancy prompted further evaluation with ultrasound. Sonographic images demonstrated a small hypoechoic lesion at the periphery of the right testis without evidence of increased internal vascularity (Fig. 3). The patient subsequently underwent a laparoscopic retroperitoneal lymph node biopsy for these non-specific but suspicious findings. The pathological review confirmed diagnosis of Stage II-B seminoma (Fig. 4-6). The patient is currently status post his first cycle of chemotherapy, which he tolerated well.

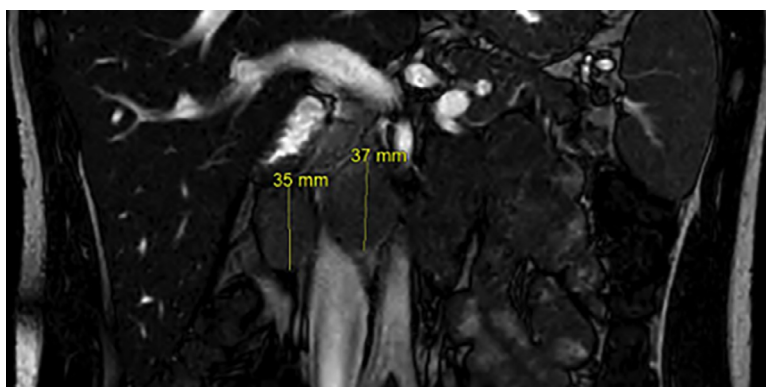


Fig. 2 – MR out of phase imaging on coronal reconstruction demonstrates a right para-caval mass at the level of the right renal hilum measuring 3.5cm in largest dimension. An aortocaval mass measures 3.7cm in largest dimension. Several smaller scattered sub-centimeter mesenteric lymph nodes are noted.

Discussion

Testicular tumors are the most common malignancy in young men between the ages of 15 and 44 [3]. Primary testicular tumors are divided into germ cell and non-germ cell lineages, with germ cell tumors more frequently identified on histology. Although the exact etiology is unknown, it is thought that germ cell tumors arise from the failure of maturation of normal gonocytes [4]. Germ cell tumors are further divided into two subcategories, the more commonly encountered seminoma and the rarer non-seminomatous. Non-seminomatous tumors that include choriocarcinoma, embryonal cell carcinoma, yolk sac tumor, teratoma and mixed germ cell tumors.

Germ cell tumors are not necessarily confined to the testes. Other sites of primary germ cell tumors include the mediastinum and retroperitoneum. These tumors represent approximately 5-10% of all germ cell tumors with the most common being the mature teratoma [5].

Testicular cancer classically manifests as a painless, palpable testicular mass and ultrasound is typically the primary imaging modality of choice. In 2-10% of germ cell tumors, only a metastatic lesion is identified on imaging, without involvement of the testicles [5,6].

A burned-out testicular tumor describes the finding of a regressed primary testicular lesion with a metastatic focus of disease. This is thought to be due to the primary tumor outgrowing its blood supply resulting in its regression [7,8].

Ultrasound is the modality of choice for evaluating a painless, palpable testicular mass, a classic presentation of testicular cancer. Ultrasound imaging of a burned-out testicular tumor varies in appearance ranging from small areas of hypo- or hyper-echogenicity and/or focal calcification to a completely normal or diminutively-sized testis. This presentation, while rare overall, is more typically seen in the setting of choriocarcinoma and embryonal cell carcinoma. Only a few

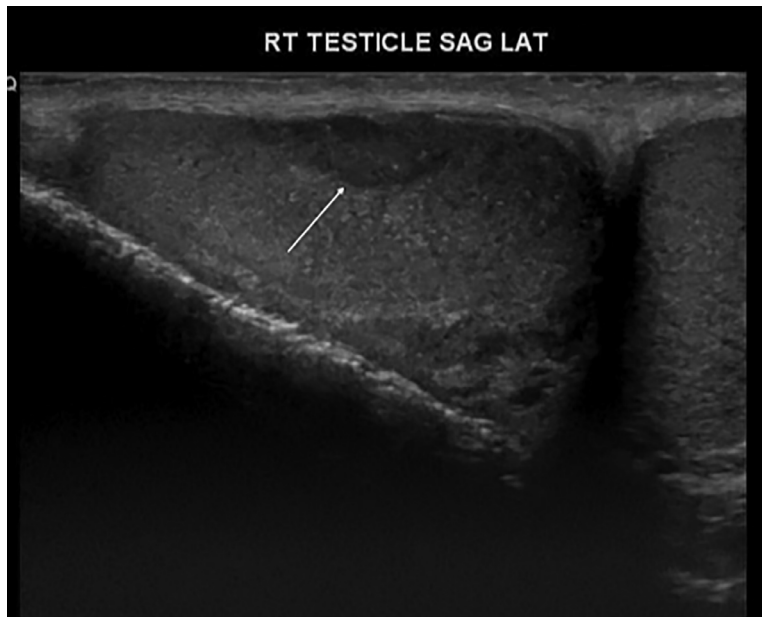


Fig. 3 – Ultrasound of the testicles demonstrates a heterogenous right testicle with a focal hypoechoic region (white arrow) along the periphery.

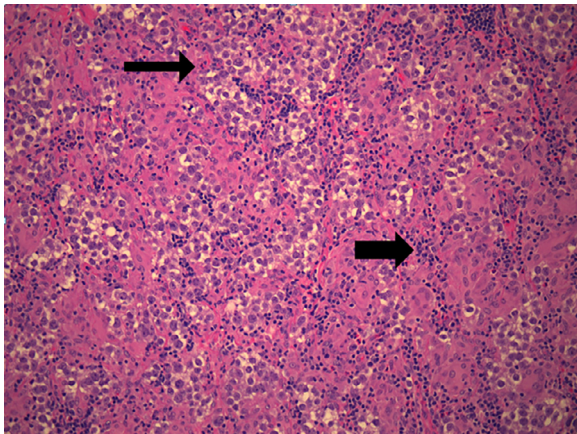


Fig. 4 – Nests of Polygonal neoplastic cells with high nucleocytoplasmic ratio and prominent nucleoli and intervening fibrous septa with interspersed lymphocytes.

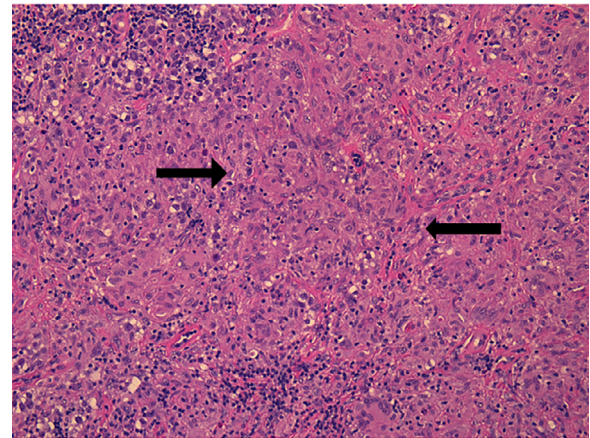


Fig. 5 – Epithelioid histiocytic cell granuloma in Seminoma. 20X, Hematoxylin and Eosin.

case reports describe this phenomenon involving a seminoma [3].

Treatment of a burned-out testicular tumor involves orchiectomy with or without adjuvant chemotherapy and/or radiation [6]. It is therefore important to distinguish pri-

mary extragonadal germ cell tumors from burned-out testicular tumors, as the treatment differs. Thorough testicular evaluation in young males with retroperitoneal adenopathy is imperative in determining the correct diagnosis.

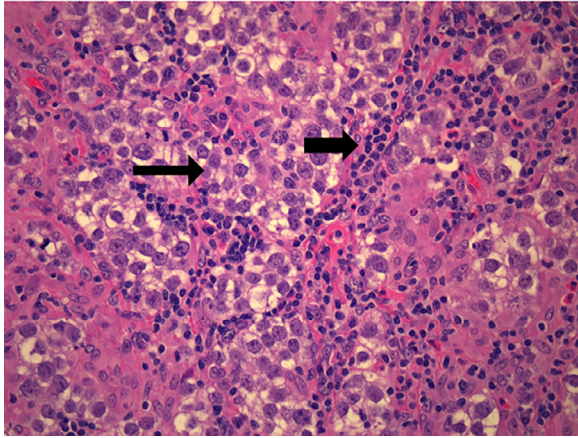


Fig. 6 – Sections of tumor depicting nests of polygonal cells with intervening fibrous septa with lymphocytic infiltration. High Power, 40X, Hematoxylin and Eosin Stain.

Conclusion

Burned-out testicular cancer is a rare phenomenon to be considered in young males presenting with retroperitoneal lymphadenopathy. It is imperative to differentiate these cases from primary extragonadal germ cell tumors that follow a different treatment regimen and manifest in typically other locations, such as the mediastinum and retroperitoneum [5]. Both physical exam and ultrasound of the testes are warranted in all young males to aid in correct diagnosis.

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