Annals of Clinical Surgery

Case Report
Published: 25 Feb, 2023

A Case of Mature Cystic Teratoma and Retroperitoneal Mass in a 26-Year-Old Male

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Abstract

Although testicular cancer accounts for only about 1% of all cancers, it is the most common solid malignancy among men between 15 and 35 years of age and has a good prognosis. It most commonly spreads to retroperitoneal lymph nodes but few cases reported a metastasis to soft tissue.

Teratoma is a subtype of non-seminal germ cell cancer and it is considered a rare type in adults.

Here, we reported a case of a 26-year-old male patient who was diagnosed with testicular cancer and Computed Tomography (CT) scan shows left retroperitoneal mass engulfing the aorta and left kidney, treated by chemotherapy and orchiectomy, but unfortunately the mass didn't regress so he underwent additional surgical management and the retroperitoneal tumor was removed and a mature cystic teratoma was observed. The patient was then discharged with good general condition.

Keywords: Testicular Cancer; Teratoma; Orchiectomy; CT

Introduction

Testicular cancer is the most common malignancy in 15 to 35 year-old men and commonly presents as a painless swelling and induration. It accounts for about 1% of all cancers [1] and in general has a good prognosis with treatment (>90% cure rate and >95% five-year survival rate) [2]. The prognosis depends on the metastasis of the tumor as it tends to be metastasized to retroperitoneal lymph nodes by lymphatic vessels, but in advanced stages it can metastasize to soft tissues in the trunk, muscles or extremities.

The majority of testicular cancers start in cells known as germ cells- that make sperm-, and Germ Cell Tumors (GCT) include two types: Seminomas and non-seminomas. Seminomas grow more slowly than non-seminomas and include 2 sub-types; the classical seminomas and spermatocytic seminomas. On the other hand, the 4 main types of non-seminoma tumors are embryonal carcinoma, yolk sac carcinoma, choriocarcinoma, and teratoma.

Teratomas are somatic cells in origin and are derived from two or more germ layers (ectoderm, mesoderm, and/or endoderm), commonly seen in pediatric age group. The most common site for this tumor is the gonads but it can also be seen in sacrococcyx, retroperitoneum and mediastinum. Retroperitoneal teratomas in adults are rare and represent only 1% to 11% of all primary teratomas [3].

In general, reported cases of Metastatic testicular retroperitoneal teratoma is very rare, here we present a case of adult patient with testicular cancer that presented with a retroperitoneal mass and was histologically proven as teratoma engulfing the left kidney with aorta and involving the iliopsoas muscle.

Case Presentation

A 26-year-old male patient with free past medical history presented with left flank and groin pain that had developed progressively during the previous year.

Computed Tomography (CT) scan was done and showed a huge left retroperitoneal mass

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Received Date: *07 Feb 2023*
Accepted Date: *08 Feb 2023*
Published Date: *25 Feb 2023*

Citation:
Al-Karaja L, Abu-Hilal LH, Bast AF, Moraqtan MF, AbuGhoush NM, Al-Tayeh RHA, et al. A Case of Mature Cystic Teratoma and Retroperitoneal Mass in a 26-Year-Old Male. Ann Clin Surg. 2023; 4(1): 1026.

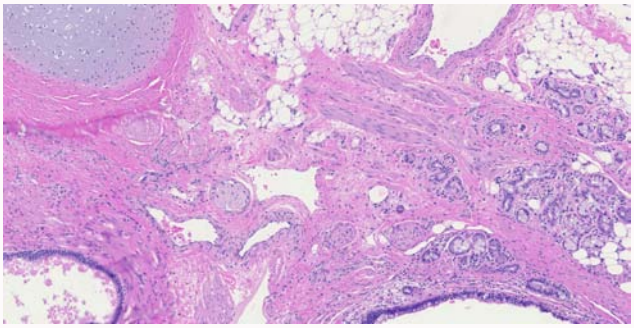

Figure 1: Cystic degeneration and necrosis.

engulfing the aorta and the left renal pedicle. Tumor markers were very high including Alpha-Fetoprotein (AFP) and Beta Human Chorionic Gonadotropin (B-HCG).

The patient received 6 sessions of chemotherapy, after the second one he underwent a left orchiectomy. The pathology report showed no evidence of a tumor in the suspected lesion. So, he was highly suspected to have an extragonadal germ cell tumor and he received another 4 sessions of chemotherapy. Tumor markers decreased but the mass didn't regress, so he was referred to our hospital for surgery where a huge tumor of about 15 cm from the bifurcation of the aorta, extending 1 cm above renal vein and artery and 1 cm laterally to the left ureter was found. The tumor was surrounding the aorta from three sides anteriorly, laterally and superiorly, adherent to it, renal vein and artery were involving the tumor and posteriorly, part of the tumor was invading the psoas muscle.

Total removal of the tumor was done with left nephrectomy and partial excision of the left psoas muscle. Postoperatively, patient was improving gradually except that his drains at the 4th day started to give lymph, he was managed conservatively with fat-free diet and sandostatin, until it gradually stopped. The patient was discharged in good general condition after removal of both drains.

Histopathology

A specimen of two parts was received in formalin, the first consisted of an irregular lobulated mass measured 20 cm × 12 cm × 5 cm and on sectioning it showed yellow white cut surface with foci of cystic degeneration and necrosis (Figure 1) and the second consisted of a nephrectomy specimen weighed 200 grams and measured 9 cm × 5 cm × 5 cm, extended from the hilum ureter measured 10 cm × 0.4 cm × 0.2 cm, renal vein 1 cm × 0.5 cm, renal artery 1 cm × 0.3 cm and on opening, renal cortex measured 1 cm. A simple cortical cyst measured 1 cm × 1 cm was identified in the upper pole of kidney and no tumor was see (Figure 2).

Discussion

Retroperitoneal Tumors (RTs) are a group of malignant and benign neoplasms that arise from the tissues surrounding the retroperitoneum. RTs can originate from various tissues, including the gastrointestinal and urinary tracts, but symptoms from these systems are uncommon [4,5]. RTs are the second most common site for malignant mesenchymal tumors, followed by the lower extremities [6].

A thorough physical examination, assessment of the peripheral lymph nodes, and testis examination are essential for the proper evaluation and management of patients with RTs. In addition

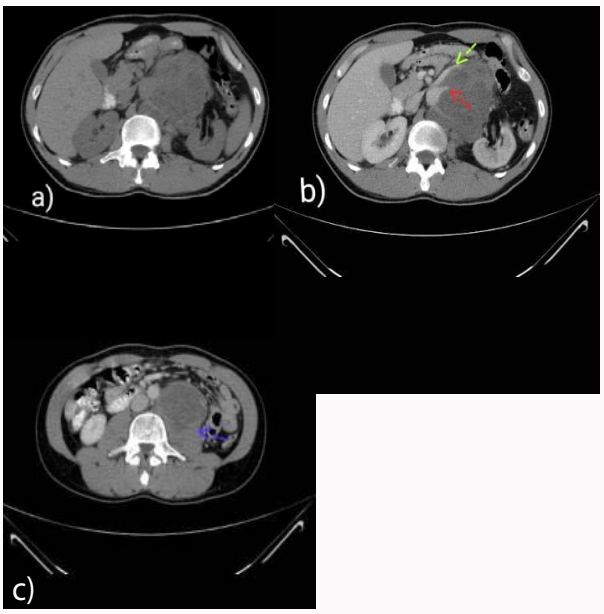

Figure 2: Axial abdomen CT scan pre-contrast (a) and post-contrast (b) show heterogeneous retroperitoneal mass with faint enhancement, the mass is engulfing the left renal artery (red arrow) and left renal vein (green arrow), (c) another section of axial abdomen CT post-contrast showing invading of the mass to the left psoas muscle (blue arrow).

to the physical examination, imaging studies such as Computed Tomography (CT) scans, Magnetic Resonance Imaging (MRI) and Positron Emission Tomography (PET) scans are commonly used to diagnose and stage RTs [6].

Testicular cancer is a type of RT that affects a small percentage of all male malignancies, accounting for approximately 1% of all cancers in men [7]. It is the most common solid tumor in men between the ages of 15 and 35, and its incidence has been rapidly increasing worldwide over the past few decades [1]. The majority of malignant tumors (95%) developing in the testes are testicular Germ Cell Tumors (GCTs), which are further divided into seminoma and non-seminoma subtypes based on histological criteria [7].

Common risk factors for testicular cancer include cryptorchidism, personal or family history of testicular cancer, age, ethnicity, and infertility. Patients may present with a range of symptoms, including a painless scrotal mass, scrotal pain, accidental radiological findings, or post-traumatic symptoms. In rare cases, presenting symptoms may suggest retroperitoneal lymphadenopathy or metastatic disease [8]. Scrotal ultrasound is the first test requested when there is a suspicion of a testicular mass, and its sensitivity and specificity for the detection of testicular cancer are 92% to 98% and 95% to 99%, respectively [9]. If malignancy is suspected, radical inguinal orchiectomy is the mainstay treatment for most patients [7]. In cases of GCTs, post-chemotherapy surgical methods, such as Post-Chemotherapy Retroperitoneal Lymph Node Dissection (PC-RPLND), are an essential part of multidisciplinary care. PC-RPLND is necessary in cases of non-seminoma with remaining lymph nodes larger than 1 cm and no increase in serum tumor markers [9]. In histological examinations, teratoma was detected in 30% to 80% of cases, and viable GCT was found in 10% to 15% of cases in patients with lymph nodes larger than 1 cm.

Techniques for PC-RPLND have advanced significantly since

the 1960s, and if the size of the lymph nodes after chemotherapy is less than 5 cm, unilateral template surgery may be performed while preserving ejaculatory function in 87% of patients. For retroperitoneal masses greater than 5 cm or situated bilaterally, bilateral template resection is necessary, with one- and two-year survival rates of 91% and 77% for unilateral and bilateral templates, respectively [9].

In conclusion, RTs are a diverse group of neoplasms arising from the retroperitoneal region and requiring a comprehensive evaluation and multidisciplinary approach for proper management. Testicular cancer is a type of RT that is rapidly increasing in incidence worldwide and requires early diagnosis and prompt treatment to improve patient outcomes.

Reported cases of Metastatic testicular retroperitoneal teratoma were very rare with our case being one of them.

Conclusion

Metastatic retroperitoneal teratoma in adults is uncommon and can present with left flank pain and be confirmed by a CT scan, with the only definitive treatment being surgical excision.

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