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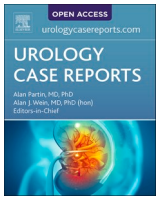

Oncology

45-Year-old with testicular mixed germ-cell tumor associated with massive hydrocele and a misleading CT scan showing bilateral testicles involvement: A case report

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A B S T R A C T

Testicular mixed germ cell tumors (TMGCTs) are rare malignancies, occasionally presenting with hydrocele, and potentially complicating the diagnosis. We report a 45-year-old male with a massive hydrocele and elevated AFP. CT suggested bilateral testicular tumors, but intraoperatively the left testis appeared normal and was preserved. Histopathology confirmed seminoma; however, due to high AFP, treatment followed TMGCT protocols. subsequent MRI of the left testis was negative. This case highlights the limitations of imaging and pathology alone and stresses the importance of integrating tumor markers, intraoperative findings, and clinical judgment for accurate diagnosis and optimal management of testicular tumors.

1. Introduction

Testicular cancers account for approximately 1–1.5 % of all cancers in men and 5 % of urological tumors[1], which mostly presents as a painless, unilateral nodular mass.[2] Testicular cancers are primarily classified into three categories, germ cell tumors, sex cord-stromal tumors, and extragonadal tumors[3]. In this case we report a 45-year-old patient who presented with a large scrotal mass reaching half of his thigh, which has been growing for the past 2 years.

2. Case presentation

A 45-year-old patient who presented to the emergency department due to a massive scrotal swelling that has been progressively growing for the past 2 years. He had no prior medical or surgical conditions; A comprehensive genitourinary review was negative for hematuria and dysuria.

On examination the scrotum was large and tense, the swelling was significant to the point that neither of his testicles could be palpated, there were no signs of infection, no erythema was seen and the mass was not tender on palpation.

Tumor markers were taken upon arrival to the ER.

- AFP was 114 ng/ml
- β-HCG:129 mIU/mL
- LDH:1358 U/L.

The patient was admitted for further imaging and management.

2.1. Imaging studies

A scrotal Ultrasound revealed that both testicles were in the inguinal canal, the right testicle was heterogeneous with an upper pole mass measuring (2 × 1.9 cm), while the left testicle was unremarkable other than its abnormal position, the scrotal sac was huge and filled with approximately 3 L of fluid and within the fluid a large heterogeneous mass was seen measuring (12 × 17 cm).

CT Chest abdomen and pelvis was ordered for staging the tumor, the findings were: bilateral testicular lesions, right intratesticular soft tissue lesion measuring (3.5 × 4 cm) [Fig. 1. A] and left intratesticular soft leasion measuring (1.1 × 1 cm) [Fig. 1. B] with retroperitoneal metastatic lymph nodes, the largest was on the right measuring (3.2 × 4.3 cm) the largest lymph node on the left measured (3.1 × 3.7cm) no evidence was found for distant metastasis, the scrotal sac is noted to be enlarged [Fig. 2].

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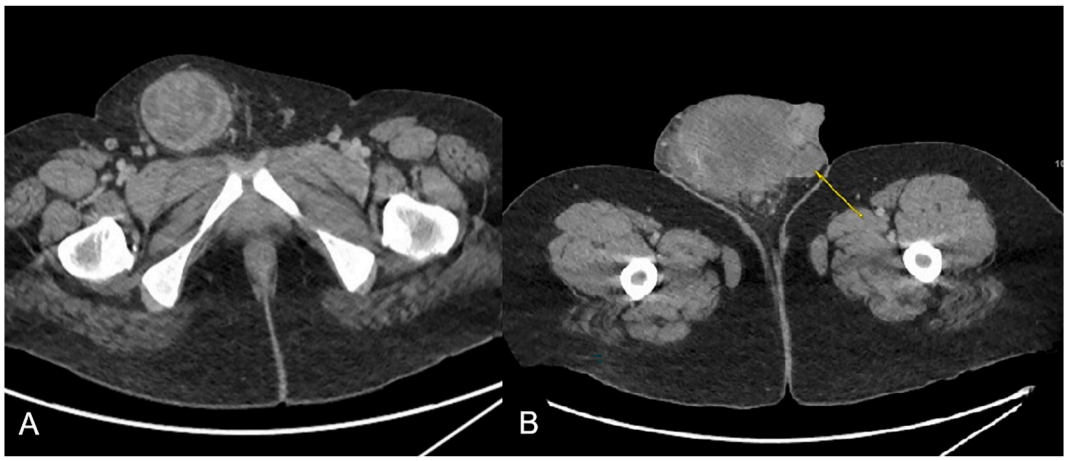

Fig. 1. Coronal CT scan
A: right testicle showing intratesticular soft tissue lesion measuring 3.5 × 4 cm
B: left testicle showing intratesticular soft tissue lesion measuring 1.1 × 1 cm.

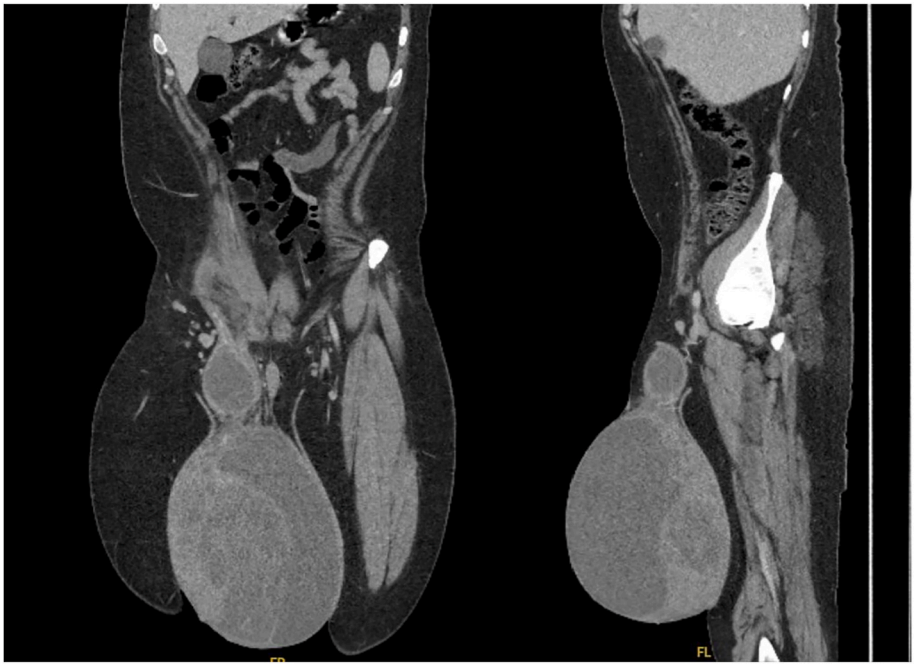

Fig. 2. Coronal and sagittal CT scan presenting the massive hydrocele size.

2.2. Management

Based on the CT findings suggesting bilateral involvement, the patient was booked for bilateral orchiectomy. However intra-operatively, after removal of the hydrocele and the right testicle, the left testicle has descended into place. With normal appearance and on palpation it was unremarkable, an intraoperative ultrasound confirmed the absence of any suspicious findings. Given these findings the removal of the left testicle was deferred for further evaluation with MRI, which turned to be negative for malignancy, the mass removed from the right testicle with the hydrocele sac measured approximately (40 × 20 cm) [Fig. 3].

The tumor was sent for histopathology which confirmed the diagnosis of seminoma with extensive tumor necrosis. However, given the elevated AFP, the patient was treated as a mixed germ cell tumor. The patient has been following with oncology for the past 6 months with no signs of distant metastasis, received 4 rounds of chemotherapy and now his tumor markers have returned to the normal levels with significant lymph node size reduction.

3. Discussion

Testicular mixed germ cell tumors (TMGCTs) are uncommon malignancies predominantly affecting men between the ages of 20 and 40. These tumors consist of two or more distinct types of germ cell tumors primarily involving the testis.[4] In Saudi Arabia the most common type of testicular neoplasms is seminoma, representing 44.8 % of primary testicular neoplasms,[5] with the majority of cases being in the central region of the kingdom 37.5 %.

Although histopathology confirmed seminoma, the elevated AFP prompted treatment as a TMGCTs, since pure seminomas do not elevate AFP. The patient was referred to oncology and underwent 4 rounds of chemotherapy with positive response and reduction in size of the retroperitoneal lymph nodes, and his tumor markers returned to normal levels.

Fig. 3. The right testicle and a massive hydrocele measuring approximately 40 × 20 cm.

This reflects the clinical importance of integrating tumor markers into diagnosis and management decisions.

CT scan play a crucial part in staging and diagnosing testicular tumors, yet they may sometimes provide misleading findings, as in this case, the preoperative CT findings suggested bilateral testicular tumors, which initially prompted the decision for a possible bilateral orchiectomy, however, intraoperatively after removal of the massive hydrocele [Fig. 3] and the right testicle, the left testicle descended into its place from the inguinal canal, and appeared unremarkable visually and on palpation. Given that bilateral testicular cancer is rare, with a reported prevalence of 1–5 %,[6] along with the normal intraoperative findings, the decision was made to leave the left testicle in place and proceed with MRI for further assessment, which turned to be negative for malignancy.

This case serves as a reminder of the difficulties involved in diagnosing and managing testicular tumors. clinical examination together with laboratory findings, imaging studies, and intraoperative findings can significantly influence treatment decisions.

4. Conclusion

This case highlights how preoperative imaging of testicular tumors can be misleading and the importance of clinical judgment intraoperatively to prevent unnecessary surgical interventions.

As the incidence of bilateral testicular tumors is rare, surgeons need to consider an intraoperative reassessment and additional imaging studies when the findings are inconclusive.

This case also emphasizes the importance of integrating tumor markers with histopathology when diagnosing and managing testicular tumors. Despite pathology confirming seminoma, the elevated AFP indicated a non-seminomatous component, leading to treatment as a TMGCTs.

Accurate diagnosis requires a comprehensive approach that considers clinical findings, imaging, tumor markers, and intraoperative assessment to guide optimal and individualized treatment.

CRediT authorship contribution statement

Hamad alkhudhayri: Writing – review & editing, Writing – original draft. **Abdullah aljarbou:** Writing – review & editing, Writing – original draft. **Yazeed Alghtani:** Writing – review & editing, Writing – original draft, Validation, Supervision, Software, Methodology, Investigation, Data curation, Conceptualization. **Mohammed Bin Shunayf:** Writing – original draft, Conceptualization. **Mansour Albawardy:** Writing – review & editing, Writing – original draft.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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