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Case Report

Testicular seminoma presenting as an acute strangulated hernia: An intraoperative diagnosis ☆,☆☆

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ABSTRACT

Testicular seminomas are the most common type of testicular tumor; atypical presentations can make diagnosis more challenging, leading to delayed treatment. Here, we present a 40-year-old previously healthy male who presented to the emergency department with severe right-sided scrotal swelling and pain. He had a diagnosed but untreated inguinal hernia. Physical examination revealed a large irreducible right inguinoscrotal swelling and tenderness. Doppler ultrasound reported herniated content in the right inguinal area, extending to the scrotum. Upon surgical exploration, a large right testicular tumor was discovered, surrounded by hematoma. A radical orchiectomy was performed, and the tumor was identified as a stage pT2 testicular seminoma. This case illustrates the diagnostic challenges posed by atypical presentations of testicular seminomas. A high index of suspicion and thorough clinical and radiological assessments are crucial for accurate diagnosis and management. In conclusion, large testicular seminomas presenting with acute pain mimicking strangulated hernias are rare. Comprehensive clinical and radiological evaluations are essential to avoid misdiagnosis and ensure appropriate surgical planning and patient management.

Introduction

The most common type of testicular tumor is seminoma, unusual presentations can make the diagnosis more difficult and demanding, requiring a high index of suspicion. Testicular pain is reported as the initial presentation in 0.01–10% of patients with testicular neoplasms [1]. Furthermore, among patients presenting with acute scrotum, 10 cases out of every 100,000 males are proven to have testicular cancer [2]. This atypical manifestation can lead to delays in diagnosis and proper treatment. Additionally, in less than 10% of patients,

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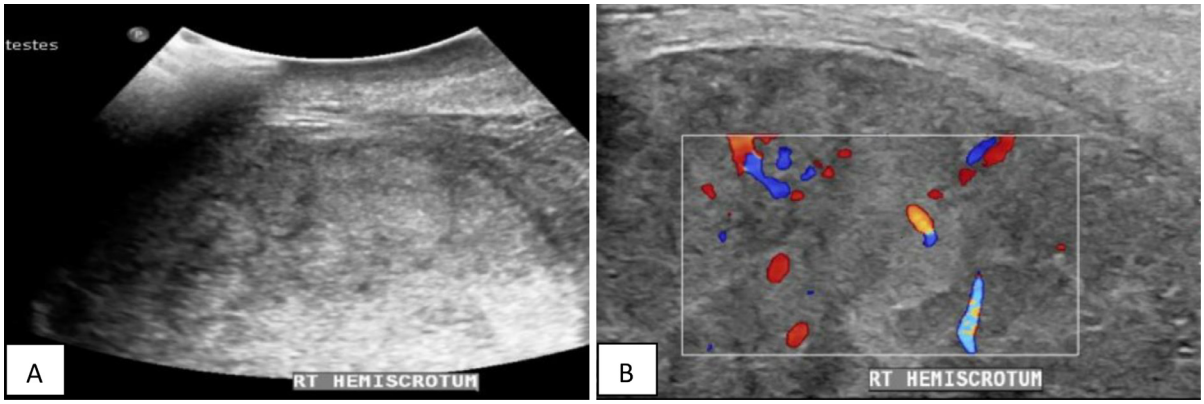

Fig. 1 – US doppler testis: herniated content from right inguinal canal down to the right hemi-scrotum (A), with minimal flow on doppler study (B).

symptoms of metastasis such as back discomfort, gastrointestinal issues, and cough may be the initial presentation [3]. The concurrent presence of a hernia and a hidden testicular tumor can further complicate the diagnosis, often leading to the discovery of the tumor during elective or emergency surgical management for an inguinal hernia.

Testicular cancer can be generally categorized as seminomatous or nonseminomatous; approximately half of all cases of testicular cancer are seminomas, and it is a relatively curable disease [4]. The overall 5-year survival rate with proper treatment is 97% [5]. High-frequency ultrasonography (US) plays a crucial role in diagnosing seminomas, often showing them as uniformly hypoechoic masses [6]. However, increased echogenicity might be seen with hemorrhage, necrosis, calcification, or fatty changes in the tumor [6].

Here, we present a case initially diagnosed as a strangulated hernia based on clinical and radiological evaluation, which was later found to be a large testicular seminoma upon surgical exploration.

Case presentation

A 40-year-old previously healthy gentleman presented to the emergency department (ED) with severe right-sided scrotal swelling and pain. He had experienced this swelling for more than 3 months, initially slightly painful and heavy, which became significantly worse the night before presentation, reaching maximal severity by morning. There was no associated fever, altered bowel habits, nausea, or vomiting. He denied any history of trauma.

He was diagnosed with an inguinal hernia many years ago in his home country without follow-up. Initially seen by an emergency physician, the examination revealed a large irreducible right inguinoscrotal swelling with minimal cough impulse extending from the inguinal canal down to the scrotum. The swelling was not palpable above, and the scrotum was tense, with bluish discoloration of the skin and tenderness over the right hemiscrotum. Abdominal examination revealed a soft, lax abdomen with no tenderness and active bowel sounds. Examination of other systems was unremarkable.

Initial laboratory tests showed leukocytosis with otherwise unremarkable findings. Tumor markers were not requested initially as a diagnosis of cancer was not suspected.

Doppler ultrasound of the testis reported herniated content at the right inguinal area extending to the right scrotum, causing significant mass effect on both sides. The right testis was displaced upward and medially at the neck of the right scrotum, appearing elongated, hypoechoic, and small (2.5 × 0.7 cm) (Fig. 1A). No significant flow was detected on Doppler study (Fig. 1B).

The acute care surgery team was consulted for a suspected right strangulated inguinal hernia with mass effect on the right testis. After examination, a decision was made to explore the patient as a case of strangulated right inguinal hernia. During right inguinal exploration, a large right testicular tumor (15 × 25 cm) with ruptured tunica albuginea and hemorrhage, surrounded by hematoma and clots, was found (Fig. 2A). The hematoma extended to the right inguinal canal, with no hernia sac or defect identified (Fig. 2B).

The urology team was involved, and a right radical orchiectomy was performed to remove the large right testicular tumor successfully. Tumor markers were sent directly post operatively, while the patient was in the recovery room. After 48 hours, the patient was discharged in good condition.

Laboratory test results showed normal levels of serum alpha-fetoprotein, beta subunit of human chorionic gonadotropin and lactate dehydrogenase. The patient was referred to medical oncology for further staging and work-up. Staging CT of the abdomen and pelvis with contrast did not reveal any significant retroperitoneal lymph node enlargement. CT chest showed no focal lung lesion or mediastinal lymph node enlargement.

Histopathological examination of the mass revealed a mass weighing 799 grams. Gross examination showed the testis measuring 13 × 10 × 9 cm, the epididymis measuring 3.5 × 1 cm, and the spermatic cord measuring 10 cm in length and 1.5 cm in diameter. Microscopic examination diagnosed a testicular seminoma stage pT2.

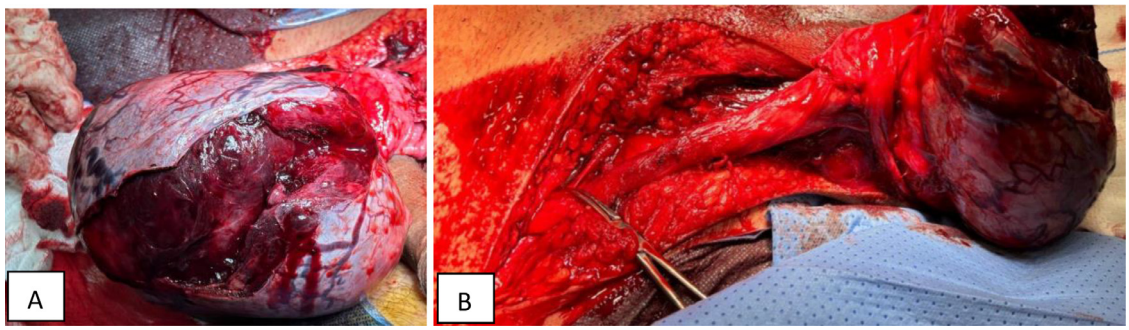

Fig. 2 – Right testicular tumor with intratesticular hematoma and clot and opened tunica albuginea (A), hematoma extending to the right inguinal canal with no hernial sac or defect (B).

Discussion

In men, germ cell tumors (GCTs) are the most frequent type of testicular cancer. Usually, GCT manifests as a painless lump or testicular enlargement [2]. Other rare presentations can make the diagnosis and management more challenging. Cases of large testicular seminomas misdiagnosed as inguinal hernias and testicular cancer with atypical presentations are rarely reported in the literature [3,7,8].

We present a rare case of testicular seminoma diagnosed intraoperatively, initially misdiagnosed as a strangulated inguinal hernia with an atrophied testis based on clinical and ultrasound findings. The tumor was found to be a large testicular seminoma with an intratesticular hematoma extending to the inguinal canal.

The pain at presentation to the ED, along with initial ultrasound findings, led to the initial diagnosis of strangulated inguinal hernia. This can be explained by the intraoperative finding of a large intratesticular hematoma with a ruptured tumor extending to the inguinal canal. This case highlights the importance of considering a wide differential diagnosis for inguinoscrotal swelling, including testicular cancer, and maintaining a high index of suspicion in unfamiliar presentations.

Delayed diagnosis and treatment can significantly impact various aspects of the patient's life. Proper diagnosis and planned management, including preoperative preparations such as sperm banking, comprehensive work-up, appropriate counseling, and thorough laboratory and radiological investigations, can improve patient outcomes [9]. Unplanned or emergency surgical interventions do not allow for adequate preparation.

This case underscores the importance of maintaining a high index of suspicion for testicular cancer, including seminomas and other types, when dealing with inguinoscrotal swelling. Thorough patient examination and comprehensive review of radiological studies are crucial to avoid missing serious diseases that significantly impact the patient's life.

Conclusions

Large testicular seminomas presenting with acute pain mimicking obstructed or strangulated hernias are very rare. Proper clinical and radiological assessment of inguinoscrotal swelling is necessary to avoid unplanned surgeries or interventions in such cases.

Ethical statement

This case has been reviewed and approved by the Institutional Review Board (IRB) under approval number MRC-04-24-442, ensuring adherence to ethical guidelines and participant safety protocols.

Patient consent

Consent for publication was taken from patient according to institution policy.

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