

A Rare Encounter: Intra-Abdominal Seminoma Rupture in an Undescended Testis Leading to Hemoperitoneum

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Abstract

Intra-abdominal seminomas arising from an undescended testis are uncommon. They are often mistaken for mesenteric or retroperitoneal sarcoma. Undescended testes are a common birth anomaly. Approximately 10% of undescended testes are located in the abdominal cavity, and an intra-abdominal testis is reported to have a higher risk of testicular cancer than an inguinal testis. We present a case of a 52-year-old man who arrived at the Emergency Department of Liaquat National Hospital with acute abdominal pain. A CT scan revealed an intra-abdominal rupture of the seminoma in the undescended testis with hemoperitoneum.

Keywords: Hemoperitoneum, seminoma, undescended testes, intraabdominal, rupture.

INTRODUCTION

Undescended testis, also known as cryptorchidism, is a relatively common birth abnormality, affecting approximately 1% of infants [1, 2]. Studies have shown that about 10% of undescended testes are in the abdominal cavity [1-3]. It has been observed that testes situated in the abdomen have a higher risk of developing testicular cancer compared to those located in the inguinal region [1-3]. To mitigate the risk of testicular tumours and infertility, a surgical intervention known as orchidopexy is recommended at the age of 6 to 12 months [2-4]. Rupture of intra-abdominal seminoma is very rare, with only a few published cases [4, 5].

CASE REPORT

A two-year-old male with a known case of diabetes mellitus, hypertension and impalpable right-sided testes presented in the emergency department with a complaint of acute abdominal pain, it was sudden in onset, non-radiating, and not associated with any aggravating or relieving factors. There was no history of nausea, vomiting, diarrhoea, constipation or urinary symptoms. A routine laboratory work-up was done which was within normal ranges, except for Total leukocyte Counts (TLCs) which were raised to 14.9. On clinical examination, his right testes were not palpable in the scrotum. His ultrasound was then done which showed mild ascites and a large lobulated heterogeneous mass in the right lower abdomen with minimal vascularity (Fig. 1A&B). It was also confirmed sonographically that the right testis was not present in the scrotal sac

or the inguinal region. CT whole abdomen was done for further evaluation which showed moderate to severe high-density ascites in the abdomen and the region of the pelvis. The right spermatic cord appeared stretched and slightly oedematous in the right iliac fossa. A heterogeneous lesion measuring approximately 12.0 x 9.1 x 16.9cm (AP x TS x CC) was seen in the right iliac fossa with high density along its periphery (Fig. 2A-C). Few enlarged lymph nodes were also seen in the retroperitoneum, aortocaval, para-aortic and retro-caval regions (Fig. 3). The right testes were not visualized in the scrotal sac (Fig. 4). These likely represent metastatic nodes with right testicular mass with suspicion of neoplastic lesion-Stage 2B (T1N2M0). Urology was taken on board and testicular tumour markers were sent which showed raised LDH and beta HCG levels. During the first post-hospital admission day the patient's hemoglobin was monitored which showed a progressive decline from 10.5 to 7.8 for which the patient was taken for emergency laparotomy. Intra-operatively two litres of blood were noted in the intra-peritoneal cavity and a perforated testicular mass was identified (Fig. 5). The pedicle was clamped and tied. Mass was excised and an abdominal washout was done. The patient was initially kept NPO, NG was kept to bag, I/O charting was done, and antibiotics and painkillers were continued. The patient was clinically and vitally stable and hence got discharged after 3 days of post-surgery. Fluid cytology showed malignant cells in it. Histopathology of the testicular mass proved to be classic seminoma (Fig 6). He was further advised to undergo radiotherapy and chemotherapy and was placed on follow up but due to financial issues they did not come again.

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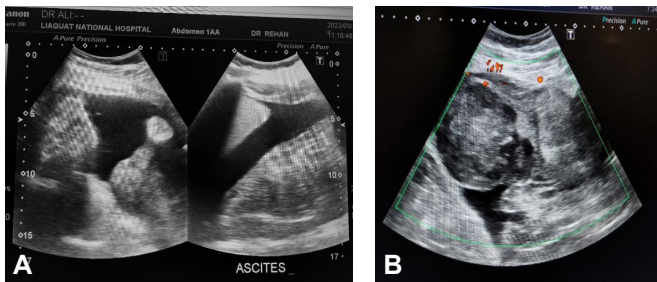


Fig. (1A and B): Ultrasound images of ascites and a heterogeneous area with internal vascularity.

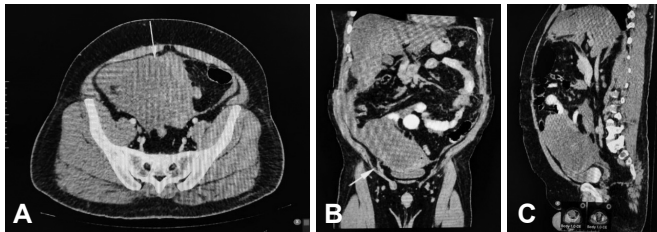


Fig. (2 A, B and C): CT scan of axial, coronal and sagittal sections showing a heterogenous lesion seen in the right iliac fossa.

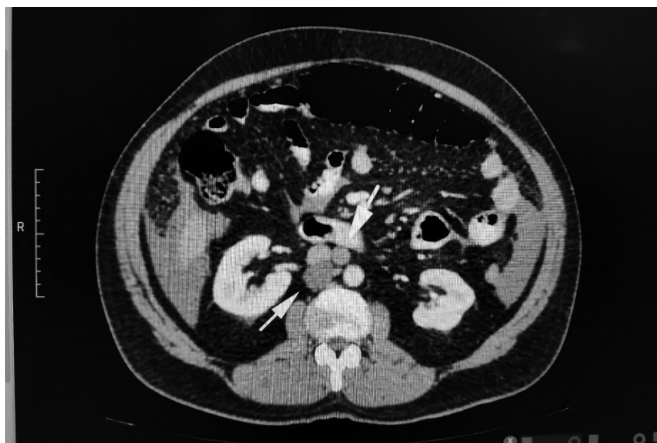


Fig. (3): CT scan axial section showing large metastatic lymph nodes.



Fig. (4): Non-visualization of the right testicle in the scrotal sac.

DISCUSSION

Intra-abdominal rupture of seminoma in an undescended testis, presenting with hemoperitoneum, is a rare and complex clinical scenario, especially in middle-aged patients. This case underscores the significant risks associated with undescended testes, which occur in



Fig. (5): Post-surgical image showing ruptured seminoma.

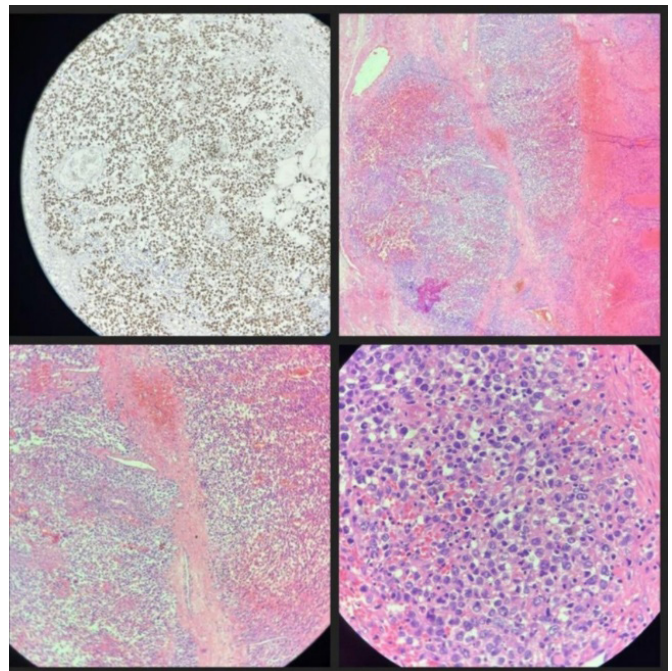


Fig. (6): Histopathology images show few lymphocytes and few sytiotrophoblast cells.

approximately 6% of full-term neonates and can lead to complications such as cancer, infertility, and torsion [6].

The association between undescended testes and testicular tumours is well-documented, with seminomas being the most prevalent type. Studies indicate that 3.5% to 14.5% of patients with testicular tumours originate from undescended testis, emphasizing the need for vigilant monitoring and early intervention. The risk of malignancy peaks in the fourth or fifth decade of life, making this case particularly pertinent for middle-aged men [2, 3].

When radiologists are unaware that a patient has an undescended testis, an intra-abdominal seminoma originating from the undescended testis is often misdiagnosed as mesenteric or retroperitoneal

sarcoma. This misdiagnosis can lead to inappropriate management strategies and delayed treatment, potentially worsening patient outcomes. Patients with malignant intra-abdominal testes may be asymptomatic or may present with symptoms resembling appendicitis, incarcerated hernia, urinary frequency, or dysuria due to the mass effect on the bladder. In more severe cases, they may present with acute abdomen from torsion and rupture, resulting in hemorrhagic shock. The incidence of intra-abdominal seminoma rupture is extremely rare. According to available literature, only five cases with similar presentations have been reported worldwide until 2022, indicating an incidence of about 1 in 500 men (0.2%).

CT findings of intra-abdominal seminoma arising from an undescended testis are often nonspecific, typically presenting as a mildly enhanced mass along the expected course of testicular descent. However, some reports have described a notable “testicular vascular pedicle” sign, where the testicular vessels can be seen entering and exiting the testicular mass. This sign is crucial for differentiating seminomas from other abdominal masses, such as mesenteric or retroperitoneal sarcomas, which can lead to misdiagnosis if the presence of an undescended testis is overlooked.

The identification of the vascular pedicle sign on CT scans can aid in confirming the diagnosis of seminoma. It is a characteristic CT finding that can help diagnose seminoma originating from an undescended testis by visualizing the testicular vessels exiting and entering the tumour, thereby guiding appropriate surgical intervention. Understanding these imaging characteristics is essential for timely diagnosis and management, as early intervention can significantly improve outcomes in patients with intra-abdominal seminomas arising from undescended testes [4, 5].

Management typically involves surgical exploration to control bleeding and excise the tumour. The prognosis largely depends on early diagnosis and timely surgical intervention, which can significantly reduce morbidity associated with this rare presentation. Thus, clinicians must maintain a high index of suspicion for seminomas in patients with undescended testes, especially when presented with acute abdominal symptoms or signs of internal bleeding [2, 3, 5].

This case underscores the importance of recognizing the potential for intra-abdominal seminoma in undescended

testes and highlights the need for prompt diagnosis and treatment to mitigate serious complications such as hemorrhagic shock. Early intervention not only improves survival rates but also reduces the risk of long-term complications associated with untreated malignancies [4, 6].

CONCLUSION

This rare case highlights the importance of prompt diagnosis and treatment for undescended testes. It may lead to malignancy, which could be complicated by torsion or rupture. It can escalate into an emergency if the patient goes into shock.

CONSENT FOR PUBLICATION

The patient's permission has been obtained.

CONFLICT OF INTEREST

The authors declare no conflict of interest.

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Declared none.

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