CASE REPORT

Spontaneous rupture of seminoma in undescended testis with hemoperitoneum: a rare presentation

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Accepted 9 April 2018

SUMMARY

Cryptorchidism is associated with increased risk of malignancy and infertility. We present a case of a 30-year-old man who presented to the Emergency Department of our tertiary care hospital with spontaneous intra-abdominal rupture of the seminoma in undescended testis with hemoperitoneum. This is a rare presentation of seminoma and emphasises the importance of scrotal examination in young men presenting with acute abdomen. Surgical management is the definitive treatment and should be instituted as soon as possible, after appropriate resuscitation.

BACKGROUND

This case is important owing to its unique clinical presentation. Because this patient belonged to poor socioeconomic background, he did not seek health-care for cryptorchidism. This eventually lead to high risk of malignancy and later on, intra-abdominal rupture of the tumour. Careful history taking and clinical examination can help institute timely surgical management and help save lives of such patients. He is currently in follow-up and is doing well.

CASE PRESENTATION

A 30-year-old previously healthy man, from poor socioeconomic background, hailing from North-Eastern India presented to the Emergency Department of our tertiary care hospital with acute onset pain in lower abdomen since 2 days. It was non-colicky in nature and was associated with two episodes of non-bilious vomiting. There was no history of trauma, constipation, blood in vomitus, liver disease and urinary tract infection. Medical history of the patient was significant for recurrent intermittent abdominal pain that resolved with over-the-counter pain medications. He consumed alcohol occasionally and denied smoking and substance abuse. He had no surgical interventions in the past. There was no family history of liver disease.

On examination, the patient was conscious, alert and oriented to time, place and person with an adequate body mass index. He was hypotensive (BP=90/60 mm Hg) and had tachycardia (> 110/min) and pallor. On inspection, the abdomen was distended with engorged veins present in the lower abdomen and umbilicus slightly shifted upwards. There was tenderness and guarding in the left side with the presence of a mass of 9 cm in diameter

extending from the left lumbar to the left hypogastric region. Shifting dullness was present. Bowel sounds were present, although sluggish. Ultrasound showed intra-abdominal fluid collection with the presence of a vague mass in the left lumbar region. Routine investigations—CBC, liver function test, kidney function test—were within normal limits, except for marginally low haemoglobin level. Chest X-ray showed normal lung fields.

As the patient was in hypotensive shock, intravenous fluids were administered with a urinary catheter inserted to monitor the output. While inserting the urinary catheter, we noticed the absence of the left testis with underdeveloped left scrotum while the right testis was normal in position and on palpation (figure 1). There was no inguinal lymphadenopathy. On eliciting the history, the patient reported the absence of left testis since his birth, for which he did not seek any healthcare. He also reported the history of infertility and inability to conceive with his wife for 5 years. There was no family history of genitourinary malignancy and/or infertility. Therefore, a presumptive diagnosis of acute abdomen due to possible rupture of an intra-abdominal mass of testicular origin, likely malignant, with hypotensive shock was formed.

After appropriate resuscitation with intravenous fluids and intravenous analgesics, he was taken for emergency laparotomy. On opening the abdomen via midline incision, around 1500 mL of blood was present in the peritoneal cavity (figure 2). An actively bleeding mass of 14×13 cm was present in the left intraperitoneal region with a ruptured capsule at the posterior aspect and a cord attached on the opposite pole with respect to the rupture site (figure 3). It was resected after individually ligating and dividing the cord and vessels. Left retroperitoneum was inspected for any other genitourinary anomaly, which was absent except for a few visible lymph nodes, which were resected. On examination, a deep inguinal ring was not developed, explaining the failure to descend and aberrant development of testis in the abdomen henceforth. After securing vascular control and thorough peritoneal lavage, the abdomen was closed. Postoperatively, he was transfused with 1 unit packed cells due to marginally low haemoglobin preoperatively as well as blood loss during the surgery. Histopathology of surgical specimen confirmed the presence of large tumour cells arranged in clusters and sheets surrounded by thin fibrous septa with

To cite: Diwakar DK, Wadhwani N, Pradhan RS, et al. *BMJ Case Rep* Published Online First: [please include Day Month Year]. doi:10.1136/bcr-2018-224898

Figure 1 Absence of the left testis with underdeveloped left scrotum with the normal right testis, observed on urinary catheter insertion. Abdomen was distended with engorged veins present in the lower left side.

lymphoplasmacytic infiltration (figure 4)—characteristic of seminoma with areas of central necrosis and haemorrhage. The resected end of cord was free of tumour invasion. Immunohistochemistry reported tumour cells positive for placental alkaline phosphatase and negative for cytokeratin, human chorionic gonadotrophin (hCG) and CD30. Tumour markers evaluation

Figure 2 After opening the abdomen via midline incision, hemoperitoneum was observed with its source—an actively bleeding intraperitoneal mass of testicular origin.

Figure 3 A 14×13 cm intraperitoneal mass resected with a ruptured capsule at the posterior aspect and a cord attached on the opposite pole with respect to the rupture site.

reported high beta-hCG and lactate dehydrogenase with normal alpha-fetoprotein.

The postoperative period was uneventful and the patient was counselled for sperm banking and referred to Medical Oncology department for Bleomycin, Etoposide and Cisplatin (BEP) regimen chemotherapy. There was excellent response with normal follow-up CT scan and tumour marker levels.

INVESTIGATIONS

Ultrasound showed intra-abdominal fluid collection with the presence of a vague mass in the left lumbar region. Routine investigations—CBC, liver function test, kidney function test—were within normal limits, except for marginally low haemoglobin level. Chest X-ray showed normal lung fields.

DISCUSSION

Cryptorchidism or undescended testis is a pathological condition defined as the failure of the testis to descend into the scrotum. It is one of the most common congenital anomalies, occurring in 1%–4% of full-term male neonates. The treatment of

Figure 4 Histopathology confirmed the presence of large tumour cells arranged in clusters and sheets surrounded by thin fibrous septa with lymphoplasmacytic infiltration—characteristic of seminoma.

cryptorchidism in infants and children is well known. A surgical approach such as orchidopexy is recommended for testes that remain undescended after 6 months of age. Less frequently, Adult patients present with undescended testis and usually have unilateral cryptorchidism, most commonly in the inguinal region, which is usually palpable before surgical procedure.¹ Cryptorchidism is associated with an increased risk of malignancy and infertility.

Testicular germ cell tumours (TGCTs) have a prevalence of 1% of all neoplasms in men, with the peak incidence between 20 and 30 years of life. About 10% of all cases of TGCT develop in men with a history of cryptorchidism. The risk of TGCTs is greater in intra-abdominal and bilateral undescended testis. Seminoma is the most common TGCT in undescended testis.²

Diagnosing malignancy in undescended testes can be difficult. The clinical presentation varies considerably and, when the tumour is in certain locations, often includes secondary symptoms from mass effect.³ They usually present with painless,

progressively increasing lump in undescended testis, with phenotype depending on its position. Spontaneous intra-abdominal rupture of the tumour with hemoperitoneum is a rare presentation of the seminoma in undescended testis. There are only three reported cases^{4–6} of such presentation in the medical literature. Spontaneous rupture can be attributed to the large size of the tumour relative to the slender pedicle resulting in torsion and eventual rupture or due to central necrosis. However, it is interesting to note that in our case, there was high clinical suspicion after observing undescended testis on scrotal examination during urinary catheter insertion and thereafter, eliciting history of infertility, emphasising the importance of scrotal examination in a young men presenting with acute abdomen.

Timely management, like in present case, is of utmost importance. Surgical management involves radical orchidectomy with high ligation of the cord. Further management is dictated by the histopathology and level of the tumour markers. In patients of reproductive age, sperm banking must be discussed.⁷

Patient's perspective

- ▶ I didn't realise I had this cancer inside me until this incident happened. Even then, it was difficult for me. But I am thankful to my Surgeons, especially Dr Deepak, who saved me and helped me with my condition. I drive an auto rickshaw back home and I promise never to over charge a doctor. Thank you! – Ramu. Translated from Hindi (his native language).

Learning points

- ▶ Less frequently, adult patients present with undescended testis and have high risk of malignancy and infertility.
- ▶ Diagnosing malignancy in undescended testes can be difficult. They usually present with painless, progressively increasing lump in undescended testis, with phenotype depending on its position. Spontaneous intra-abdominal rupture of the tumour with hemoperitoneum is a rare presentation of the seminoma.
- ▶ Scrotal examination is important in young men, especially with history of infertility, presenting with acute abdomen.
- ▶ Surgical management involves radical orchidectomy with high ligation of the cord.

Contributors DKD and NW: planning, drafting, conception and design of the manuscript. RSP and RPV: acquisition of the data and contributed to the development and design.

Funding The authors have not declared a specific grant for this research from any funding agency in the public, commercial or not-for-profit sectors.

Competing interests None declared.

Patient consent Obtained.

Provenance and peer review Not commissioned; externally peer reviewed.

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