

Atypical Presentation of Intra - Abdominal Seminoma with Bowel Metastasis in Unilateral Undescended Testes - A Rare Case Report

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Abstract: Undescended testes, common in boys, is usually found in the superficial inguinal pouch, but can be perineal, femoral, peripenile or intra - abdominal. Untreated intra - abdominal testes can form masses in adulthood, with a 40 - fold increase in cancer risk. This report details a 40 - year - old man with an intra - abdominal mass from unilateral undescended testes, presenting with abdominal pain. The mass was infiltrating the colon, which was successfully excised surgically. Thus thorough evaluation is imperative in men with abdominal masses as there is a huge risk of malignancy in undescended testes, which ensures timely identification and treatment of potential germ cell tumors.

Keywords: Undescended testes, Intra - abdomen mass, Seminoma

1. Introduction

Undescended testes, affecting about 1% of male infants and more common in preterm births, is the most frequent genitourinary congenital anomaly. While most undescended testes are in the inguinal canal, 10% are intra - abdominal, greatly increasing the risk of malignant transformation, particularly into seminomas. Intra - abdominal testes are 20 - 48 times more likely to develop cancer than normally descended ones ⁽¹⁾. Even with early orchidopexy as a preventive measure, intra - abdominal testicular tumours can still develop. This highlights the need for early diagnosis and management of undescended testes to mitigate cancer risk and complications.

2. Materials and methods

Case Discussion

A 41 year old man reported experiencing lower abdominal pain for one year along with a gradually enlarging mass in the lower abdomen. He had also reported constipation for the past two years.

Examination revealed a 14x12 cm hard, non - tender, and mobile mass in the hypogastric region. Scrotal examination showed a palpable left testis, but the right testis was not palpable in the scrotum or inguinal canal. Serum tumour markers and other lab parameters were normal.

Contrast CT scan of abdomen and pelvis revealed an 11.7x9.7 cm heterogeneous lesion in the pelvis, abutting the sigmoid colon, with no lymphadenopathy or metastasis.

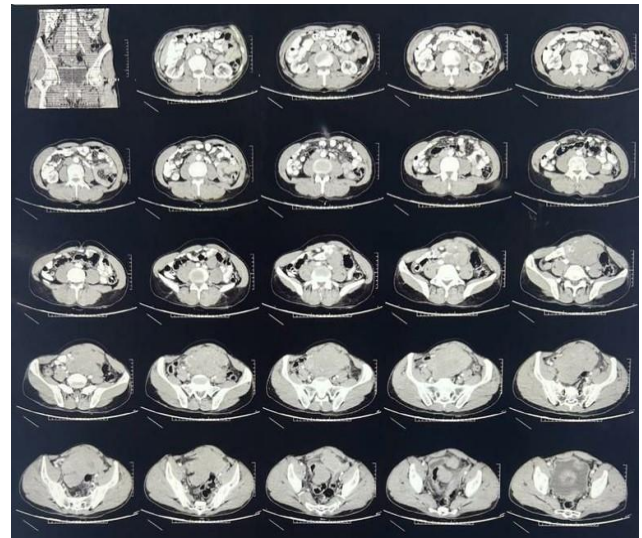


Figure 1: Contrast CT scan of abdomen and pelvis

PET scan showed a 12x11 cm FDG - avid lesion with hypodensities and calcification in the infraumbilical and midline region, abutting the sigmoid colon without bowel obstruction. Lesion closely abuts bilateral vas deferens. Fat planes are maintained with Urinary bladder. Mildly FDG - avid mesenteric lymph nodes were noted, the largest being 8.5 mm. Bilateral seminal Vesicles appears normal. The right testis was not visualized, and no metastasis was found.

Management

The patient underwent an exploratory laparotomy with an infraumbilical incision. A 15 cm mass adhered to the bowel was found. Dissection revealed the sigmoid colon adhered to the mass, necessitating a sigmoidectomy and end - to - end anastomosis done. Both ureters were identified and not

dilated. Hemostasis was secured and abdomen was closed in layers.



Figure 2: Post - Op enbloc specimen

Histopathology report: Seminoma

A homogeneous tumour measuring 17x14x5 cm adhered to a bowel segment, infiltrating through the serosa into the muscularis propria. The seminal vesicle was free of tumour. Lymphovascular invasion was present. One out of eight lymph nodes was positive for tumour.

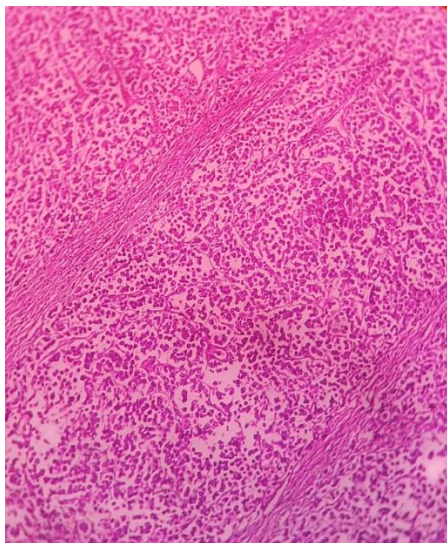


Figure 3: Histopathology image

3. Discussion

Undescended testes can lead to malignancy, infertility, inguinal hernia, and torsion. An abdominal testis is four times more likely to become malignant than an inguinal testis, with cancer usually peaking in the third or fourth decade of life. These tumours extend through hilar soft tissues, breaching the tunica to invade adjacent bowel⁽⁴⁾.

Undescended testes, particularly those located intra - abdominally, are strongly associated with the development of seminomas. Therefore, in patients with a nonpalpable testis, testicular cancer should be included as a key differential diagnosis when evaluating an abdominal mass. Two main

hypotheses have been proposed to explain this correlation. The first suggests that the elevated temperature of an ectopic testis may create a procarcinogenic environment. If this is true, performing orchidopexy before the onset of puberty could reduce cancer risk by preventing precancerous cell differentiation. The second hypothesis suggests that a shared hormonal imbalance predisposes individuals to both cryptorchidism and testicular cancer. If this theory holds, orchidopexy may not prevent malignancy, necessitating the consideration of orchiectomy to mitigate cancer risk⁽⁵⁾.

Muhamat Gozali et al. reported a case of a 31 year old man with a two year history of lower abdominal pain and a mass, diagnosed as a pure seminoma in an undescended testis. Surgery was initially planned but abandoned due to extensive adhesions; a biopsy confirmed seminoma. Following chemotherapy, the mass significantly reduced⁽¹⁾.

A study by Gupta et al. on 10 patients with intra - abdominal masses in undescended testes found 6 cases of seminoma and 4 of non - seminomatous germ cell tumors (NSGCT). Six patients received induction chemotherapy followed by surgical removal of the mass, while four underwent mass excision and retroperitoneal lymph node dissection. After a median follow - up of 35 months, the overall survival rate was 90%. This study determines the role of chemotherapy and surgical management in this patient group⁽²⁾.

Muhanna et al. presented a case involving a 42 year old male who experienced a month long history of upper abdominal pain, accompanied by weight loss and other gastrointestinal symptoms. Imaging, including a CT scan of the abdomen and pelvis with contrast, revealed a thickened mass in the proximal small bowel along with enlarged lymph nodes. Push enteroscopy identified a mass in the duodenum. Further histopathological analysis and immunostaining confirmed it as a germ cell tumor. A scrotal ultrasound showed a hypoechoic lesion in the right testicle, suggesting a diagnosis of metastatic testicular seminoma with involvement of the small bowel. The patient received chemotherapy and was referred for an orchiectomy as part of the treatment plan⁽⁴⁾.

Intra - abdominal seminoma infiltrating the bowel segments is very rare. While chemotherapy is generally effective for metastatic seminoma, gastrointestinal metastasis poses a higher risk and usually correlates with poor outcomes⁽⁴⁾. Treatment typically involves chemotherapy and/or surgical resection⁽⁵⁾. In cases with gastrointestinal symptoms, like this patient, surgical resection was preferred over chemotherapy. The patient is recurrence - free after six months post - surgery, with further treatment contingent on surveillance CT scans. Long - term follow - up is essential due to the disease's aggressive nature. Intra - abdominal seminoma with bowel metastasis is a rare cancer, emphasizing the need for early detection. Treatment challenges are due to the infrequency of cases and the absence of standardized management protocols.

4. Conclusion

This case highlights the pivotal importance of detailed evaluation of intra - abdominal masses in patient with undescended testes followed by prompt radical surgical resection which helps in controlling its further spread.

Reporting such cases worldwide is crucial for developing uniform treatment protocols.

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