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(CASE REPORT)

A giant abdominal mass revealing a testicular tumor of an undescended testis

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Abstract

Cryptorchidism is a common congenital condition associated with infertility and a significant risk of malignant transformation. Testicular tumors developing from undescended testes, especially intra-abdominal ones, are rare but pose diagnostic challenges, often presenting as large abdominal masses.

Cryptorchidism should be addressed early to prevent complications such as malignancy. In adult males with abdominal masses and non-palpable testes, testicular cancer should be part of the differential diagnosis.

Keywords: Undescended Testis; Cryptorchidism; Orchiectomy; Testicular tumor; Abdominal masses

1. Introduction

Cryptorchidism is a fairly common pathology in urology. It is associated with a high risk of infertility and degeneration. It also seems to be associated with a high risk of torsion.

Abdominal masses often pose a diagnostic challenge, necessitating a thorough clinical, radiological, and histopathological evaluation. While many such cases are attributed to common intra-abdominal pathologies, rare etiologies must also be considered, particularly in the context of cryptorchidism.

Undescended testes, occurring in approximately 3,5% of full-term male neonates, are a well-documented risk factor for testicular germ cell tumors, with malignant transformation potentially occurring even in adulthood. However, their presentation as an abdominal mass remains an uncommon yet clinically significant scenario.

In the majority of cases, the clinical picture included pain in the lower abdominal region with, on clinical examination, a painful abdominal mass.

Doppler ultrasonography plays a crucial role in evaluating an abdominal mass in the context of an absent testis in the scrotum, particularly for differentiating a testicular tumor arising from an undescended testis.

Doppler helps identify an undescended testis in ectopic locations such as the inguinal canal, retroperitoneum, or intra-abdominal region. Testicular tumors typically appear as solid, heterogeneous masses, with seminomas being hypoechoic and non-seminomatous tumors showing mixed echogenicity. Malignant tumors exhibit increased vascularity on Doppler imaging, with low-resistance arterial waveforms indicating neovascularization.

The absence of a testis in the scrotum, along with retroperitoneal lymphadenopathy or invasion of adjacent structures, raises suspicion of malignancy.

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CT scanning complements Doppler ultrasound by providing detailed anatomical assessment, tumor staging, and metastatic evaluation in cases where an abdominal mass raises suspicion for an undescended testicular tumor.

In combination with tumor markers (AFP, hCGt, LDH) and histopathological confirmation, CT plays a pivotal role in establishing the diagnosis and guiding treatment decisions.

2. Case report

32-year-old patient, with an intermittent abdominal pain evolving in the last 2 years who had been experiencing abdominal distension as well as increasing pain and a constipation for 7 days. He had no history of severe illness, tumor, or surgery and no familial history of cancer. Both he and his parents had noticed the absence of both testicles in the scrotum since childhood; however, they were unaware of the need for treatment and thus did not seek medical assistance.

Clinical examination revealed a fix left hypogastric mass extending in the inguinal canal, hard and painful on palpation. Examination of the external genitalia reveals a right testicle in place and a left scrotal void, digital rectal examination reveals a smooth prostate as well as a mass repealing the anterior wall of the rectum.

CT scan of the thoraco-abdomino-pelvic region as part of the staging assessment revealed a large pelvic soft tissue mass in the inter-vesico-rectal space, locally advanced, associated with a retroperitoneal lymphatic mass.

The patient first underwent a complete pre-operative assessment then was admitted to the operating room for surgical exploration which revealed a giant abdominal mass with an increased vascularity.

He underwent an exploratory laparotomy with a lower incision which revealed the right intra-abdominal testicular mass (Figure 2). An intra-abdominal right orchiectomy was performed and the patient was then transferred to our facility for further care.

Postoperative management consisted of implementing analgesic treatment with broad-spectrum penicillin-based antibiotic therapy to avoid infection.

We then sent the piece for anatomopathological study.

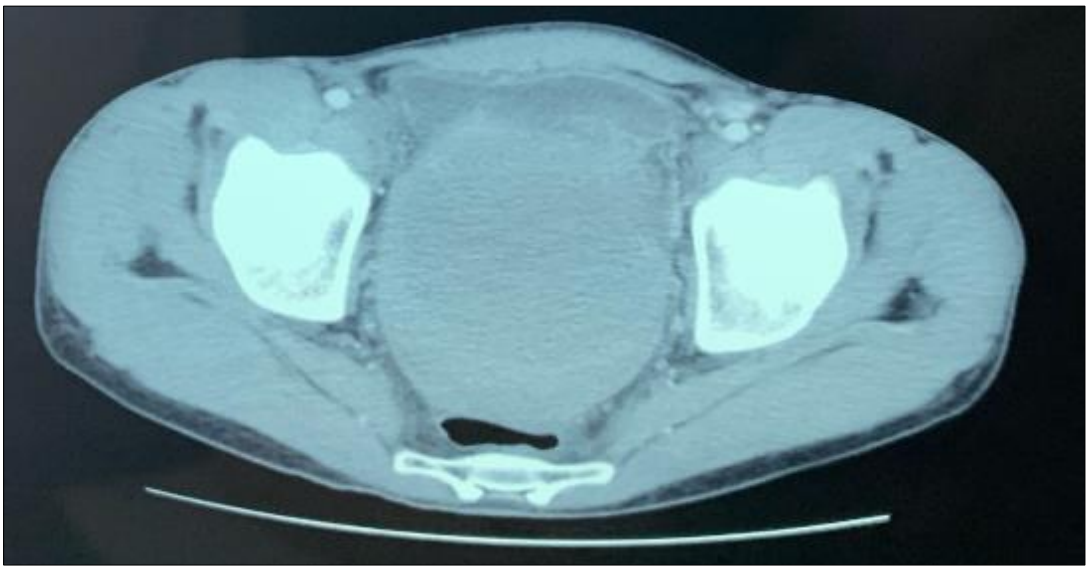

Figure 1 Image of the CT scam showing the testicular tumor repealing both the bladder and the rectum

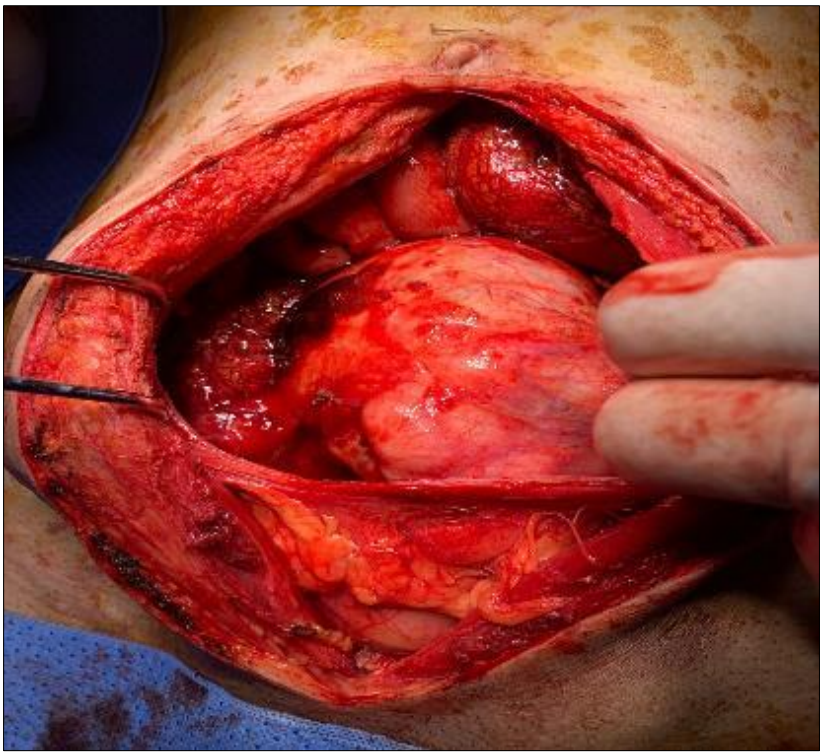

Figure 2 Perioperative image showing an abdominal mass to the bladder dome

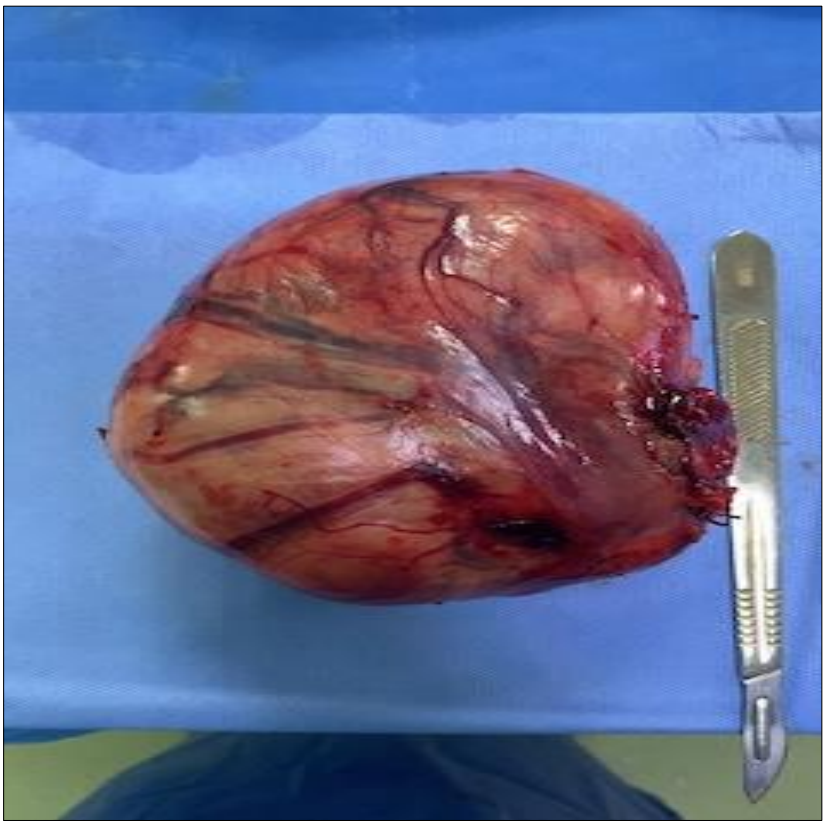

Figure 3 Orchiectomy of the left testicular tumor

Seminoma of the testicle was discovered during the histological examination of the tumor. Neither capsular invasion nor vascularization was present. Postoperative tumor marker levels demonstrated complete normalization. On

laparotomy and CT report, no lymph node metastasis or distant metastases were discovered, and his pathological staging was stage IB (pT2N0M0S0).

The patient was discharged on the fourth day after surgery and was under surveillance by the oncology department for further management. Follow-up serum tumor marker evaluation and abdominal CT imaging were conducted four months after surgery with no signs of recurrence.

3. Discussion

Cryptorchidism is characterized by anomalies in testicular development and descent during the embryonic phase. It is found in 6% of full-term newborns and 0.8% of infants under the age of one year. In up to 10% of cases, it is bilateral and sometimes accompanied by other genitourinary tract problems [1]

Cancer is the most feared complication of an undescended testicle, with a risk of 3.5-14.5% among cryptorchidism patients [1],[2]]. In 10% of cases, the testes are intra-abdominal, putting them at a 200-fold higher risk of malignant transformation [1]. Malignant degeneration is more common in Caucasians and in the third and fourth decades of life [1],[3].

The abdominal or pelvic mass associated with an empty scrotum is considered a common mode of presentation. Cases of undescended testicular cancer are particularly frequent compared to the literature. It is typically the progressive enlargement of an abdominal-pelvic mass, along with a deterioration in general health, that prompts patients to seek medical consultation. The undescended testis is the main recognized risk factor for testicular cancer [4].

They are frequently asymptomatic and are discovered by accident during imaging testing [5].

When symptomatic, the diagnosis might be problematic since symptoms can mirror urinary calculus, mass effects, acute appendicitis, and gastrointestinal and genitourinary tract compressive symptoms [1],[6],[7].

Ultrasound, CT, and magnetic resonance imaging scans reveal a well-defined, retroperitoneal mass or homogenous pelvic with no apparent calcification or necrosis. These findings have sarcoma and lymphadenopathy as the main differential diagnoses, which are more common circumstances [1].

Surgical treatment is required, including removal of the intra-abdominal mass; however, chemotherapy may be an option depending on the stage and histological type of malignant transformation [1],[8]. This growth is largely driven by the often absent or nonspecific nature of symptoms. The occurrence of these aggressive late-stage malignancies effectively demonstrates the natural history of uncorrected undescended testes (UDT) and reaffirms our current guidelines for the early correction of cryptorchidism [8].

Hussain reported a case of a man with giant intra-abdominal seminoma presenting with gastrointestinal symptoms of acute right lower abdominal pain who underwent surgery and four cycles of chemotherapy comprising a regimen of bleomycin, etoposide, and cisplatin [9].

Gonda *et al*. reported a case of a man with abdominal pain, vomiting, and hemorrhagic shock due to the rupture of an intra-abdominal testicular seminoma. The patient improved after emergency surgery, though one year postoperatively, the patient had a marked increase in β-HCG, and retroperitoneal lymph node recurrence was found on CT examination. He underwent lymph node dissection and three cycles of chemotherapy with a regimen of bleomycin, etoposide, and cisplatin [6].

Our patient underwent laparotomy with a lower midline incision due to giant testicular seminoma, which was pathologically categorized as stage I. The first line of treatment for stage I testicular seminoma is radical inguinal orchiectomy. Following surgery, standard treatment options include active surveillance, radiation therapy, or one to two carboplatin cycles [6],[10]. In our case, serum tumor markers and postoperative abdominal CT imaging were conducted four months after surgery and showed no signs of recurrence. We planned follow-ups every four months for the first year, every six months for the second year, and annually for the third to fifth years.

4. Conclusion

Our findings support the early treatment and close monitoring of cases of cryptorchidism due to the risk of malignancy as well as the necessity of routine scrotal examinations in all males presenting with an abdominal mass. Malignancy should be suspected in a patient who has an abdominal mass and undescended testis.

Compliance with ethical standards

Disclosure of conflict of interest

No conflict of interest to be disclosed.

Statement of informed consent

Informed consent was obtained from all individual participants included in the study.

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