International Journal of Radiology and Diagnostic Imaging

E-ISSN: 2664-4444
P-ISSN: 2664-4436
Impact Factor (RJIF): 5.68
www.radiologypaper.com
IJRDI 2025; 8(3): 93-95
Received: 08-07-2025
Accepted: 11-08-2025

Dr. Anagha J
Department of Radiology, LTMMC and LTMGH, Sion, Mumbai, Maharashtra, India

Dr. Latikesh B
Department of Radiology, LTMMC and LTMGH, Sion, Mumbai, Maharashtra, India

Dr. Niranjana D
Department of Radiology, LTMMC and LTMGH, Sion, Mumbai, Maharashtra, India

Dr. Minal K
Department of Radiology, LTMMC and LTMGH, Sion, Mumbai, Maharashtra, India

Dr. Sujoy M
Department of Radiology, LTMMC and LTMGH, Sion, Mumbai, Maharashtra, India

Dr. Kajal L
Department of Radiology, LTMMC and LTMGH, Sion, Mumbai, Maharashtra, India

Corresponding Author:
Dr. Mahak B
Department of Radiology, LTMMC and LTMGH, Sion, Mumbai, Maharashtra, India

Lost and found: Malignancy in a case of hidden testis

Anagha J, Latikesh B, Niranjana D, Minal K, Sujoy M and Kajal L

DOI: https://www.doi.org/10.33545/26644436.2025.v8.i3b.480

Abstract
Testicular Germ Cell Tumors (GCTs) are the most common solid malignancies in young males, with Non-Seminomatous Germ Cell Tumors (NSGCTs) representing a significant subset characterized by aggressive behaviour and elevated tumor markers. Cryptorchidism, or undescended testes, is a well-established risk factor for developing testicular cancer, particularly germ cell tumors. Early detection and accurate imaging play a critical role in timely diagnosis, staging, and treatment planning, directly influencing patient outcomes.

Keywords: Testicular germ cell tumor, non-seminomatous germ cell tumor, cryptorchidism, AFP

Introduction
We present a case of a patient with a history of undescended testis who developed lower abdominal mass, illustrating the complex interplay between developmental urology and oncology. This report highlights the critical importance of ultrasonography for initial detection and computed tomography for staging, while emphasizing that timely surgical intervention from prophylactic orchiopexy to radical orchiectomy remains the cornerstone of management for both cancer prevention and treatment in these high-risk cases.

Case History:
We report a case of a 19 years old male with a history of cryptorchidism who presented with a lower abdominal mass. He complained of lower abdominal pain and episodes of vomiting for one month.
Ultrasound examination demonstrated a well-defined, solid-cystic lesion measuring 6.7 × 8.3 × 8.4 cm, showing heterogeneous hyperechogenicity and minimal internal vascularity, without internal calcification (Figure 1). The absence of the testis in the scrotal sac strongly indicated mass arising from an undescended testis. Following this laboratory investigations were suggested which revealed markedly elevated tumor markers, including alpha-fetoprotein (AFP) >1000 ng/mL and lactate dehydrogenase (LDH) at 609 U/L.

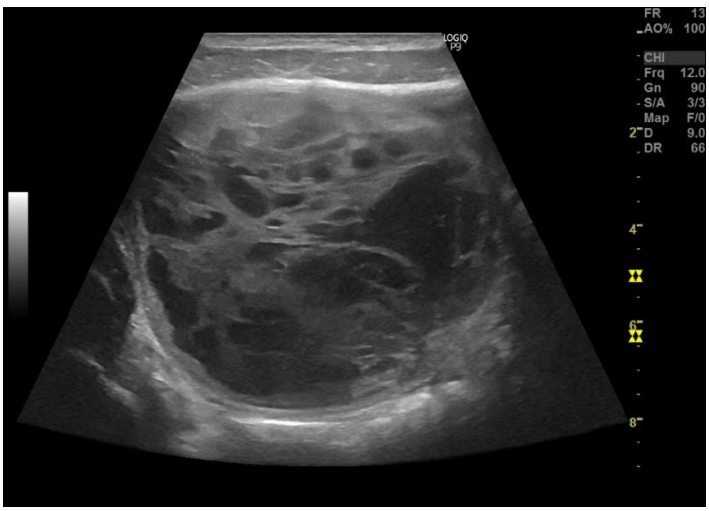

Fig 1: USG revealed a well-defined, heterogeneously hyperechoic solid-cystic lesion in the hypochondriac region

Contrast-enhanced CT (computed tomography) showed a large, well-defined hypodense mass lesion measuring 8.1 × 8.2 × 8.1 cm (AP × ML × SI) was identified in the lower abdomen, located in the prevertebral space extending from the inferior border of L4 to the body of S2 vertebrae, positioned in the midline and slightly to the left, superior to the urinary bladder (Figure 2). Post-contrast images demonstrated heterogeneous, irregular, predominantly peripheral progressive enhancement with central non-enhancing areas, indicative of necrotic or cystic degeneration (Figure 3).

Additionally, a well-defined, enhancing soft tissue density structure measuring 3 × 2.1 cm, containing peripheral calcific foci, was visualized in the left rectovesical space, postero-inferior to the primary lesion. This likely represented the left undescended testis. (Figure 4).

It also showed empty scrotal sac.

The patient eventually underwent exploratory laparotomy with excision of the abdomino-pelvic mass and the reported adjacent undescended left testis. Intraoperatively, the tumor was found arising from the right intra-abdominal testis, adherent to surrounding structures but without gross evidence of metastatic spread. The mass, along with the spermatic cord, was resected en bloc. The left undescended testis, identified in the retrovesical space, was also excised due to non-functionality and potential malignant risk. The postoperative period was uneventful, and the patient was referred to oncology for further management.

Fig 2: Non contrast axial CT reveals a large well-defined hypodense lesion with few central hyperdense areas

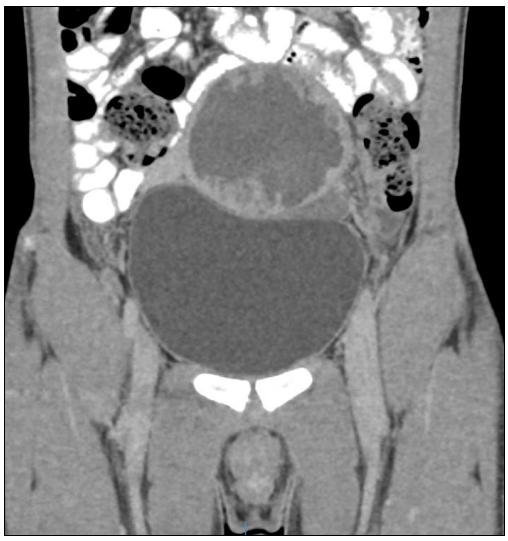

Fig 3: On post contrast axial CT shows, moderate and heterogeneous peripheral enhancement with central non-enhancing areas

Fig 4: Post contrast axial CT shows empty scrotal sac with right testicular mass (<) and a fairly well-defined soft tissue density enhancing oval structure likely left undescended testes (⇦)

Fig 5: Post-operative right testicular mass

Discussion

The management of testicular tumours arising within the context of cryptorchidism presents a unique clinical challenge that intertwines developmental urology, oncology, and radiology. The undescended testis is the most well-established risk factor for testicular germ cell tumours, with an estimated relative risk 4 to 6 times higher than that of the general population [4]. This elevated risk is believed to stem from a combination of factors, including the higher intra-abdominal temperature, endocrine dysfunction, and underlying genetic abnormalities that may contribute both to the failure of descent and the subsequent malignant transformation of germ cells. It is critical to note that while the relative risk is significantly elevated, the absolute lifetime risk remains comparatively low, though this does not diminish the imperative for vigilant clinical management.

The role of diagnostic imaging in this patient population is twofold: initial localization and surveillance, and subsequent staging. Ultrasonography (USG) serves as the primary and most invaluable initial modality. Its high resolution allows for excellent characterization of the testicular parenchyma, enabling the identification of impalpable testes and, crucially, the detection of small, non-palpable intratesticular masses in a post-orchiopexy or contralateral testis. Any

solid, hypoechoic, and vascularized mass identified on ultrasound must be considered malignant until proven otherwise. However, once a tumour is confirmed, the imaging paradigm shifts to staging, for which CT of the chest, abdomen, and pelvis becomes indispensable. CT is the gold standard for detecting metastatic spread, particularly to the retroperitoneal lymph nodes the most common site of dissemination and is thus critical for determining disease stage and guiding subsequent therapeutic decisions [2].

The cornerstone of management, both prophylactic and therapeutic, remains surgical intervention. The prophylactic role of orchiopexy cannot be overstated. Evidence strongly suggests that performing this procedure at an early age, ideally before 18 months, significantly reduces the future risk of malignancy [3]. For the post-pubertal male with a history of uncorrected cryptorchidism, the risk-benefit analysis shifts, and orchiectomy is often the recommended course of action due to the markedly elevated cancer risk and diminished functional potential of the testis.

When a tumour is suspected, the standard of care is a radical inguinal orchiectomy. This procedure, which involves early ligation of the spermatic cord structures at the internal inguinal ring, is both diagnostic and therapeutic. It provides the essential histopathological specimen required to classify the tumour type (seminoma vs. non-seminoma), which dictates all further management.

Summary and conclusion

This case highlights the critical link between cryptorchidism and testicular malignancy. And imaging plays a pivotal role of in localization, characterization, and staging of testicular tumours, especially when the presentation is atypical. Clinicians should maintain a high index of suspicion for malignancy in adult males with a history of undescended testis, particularly in cases of nonspecific abdominal symptoms. Accurate imaging helps in improve clinical outcomes in form of morbidity and mortality.

References

1. Hafsi A, El Hafsi F, Bahria A, *et al*. Nonseminomatous mixed germ cell tumor of the testis: Case report. Radiol Case Rep. 2025;20(9):4745-4748. DOI:10.1016/j.radcr.2025.06.045. Published 2025 Jun 28.
2. Hanna NH, Einhorn LH. Testicular cancer: discoveries and updates. N Engl J Med. 2014;371(21):2005-2016.
3. Kolon TF, Herndon CDA, Baker LA, *et al*. Evaluation and treatment of cryptorchidism: AUA guideline. J Urol. 2014;192(2):337-345.
4. Wood HM, Elder JS. Cryptorchidism and testicular cancer: separating fact from fiction. J Urol. 2009;181(2):452-461.

How to Cite This Article
Anagha J, Latikesh B, Niranjana D, Minal K, Sujoy M and Kajal L. Lost and found: Malignancy in a case of hidden testis. International Journal of Radiology and Diagnostic Imaging. 2025;8(3):93-95.