


CASE REPORT

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# Fistulous communication with bowel loop: a rare presentation of intra-abdominal seminoma

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## Abstract

**Background:** The complications associated with abdominal testis include torsion, rupture, and malignant transformation.

**Case presentation:** A 40-year-old man presented with complaints of left-sided abdominal mass and abdominal pain. On contrast-enhanced computed tomography (CECT), there was a well-defined heterogeneously enhancing mass lesion in the lower abdomen with calcification showing fistulous communication to the adjacent ileal loops. The lesion was seen supplied by the left gonadal artery raising suspicion for testicular origin. On performing a scrotal ultrasound, the left testis was found absent. A radiological diagnosis of abdominal testicular neoplasm was made.

**Conclusions:** Histopathological examination proved the lesion to be a germ cell tumor, consistent with seminoma.

**Keywords:** Case report, Seminoma, Undescended testis

## Background

One of the common congenital anomalies observed in newborn male children includes undescended testis. Testicular tumors form 1 to 2% of all malignant tumors in males, out of which about 7–10% of men have a history of cryptorchidism [1]. The prevalence of testicular germ cell tumors in patients with cryptorchidism is 2–7%. Congenital cryptorchidism may descend spontaneously in many patients' first month of life [2].

When testes could not be palpated along the inguinoscrotal descent tract, the two possibilities to be considered are either testicular agenesis or an intra-abdominal testis. Research has shown that intra-abdominal testis carries the highest risk for malignancy, which is four times higher than that of a scrotal testis [3].

There are few reported cases of intra-abdominal testicular seminomas. The common complications of these tumors include torsion and rupture. One rare case of bowel obstruction has also been reported [1, 4]. To our knowledge, seminoma with fistulous communication with bowel loop has never been reported. We report a case of cryptorchid intra-abdominal seminoma complicated by fistula formation with the bowel loop.

## Case presentation

A 40-year-old gentleman presented with complaints of chronic lower abdominal pain and mass in the left lower abdomen. No history of vomiting, loose stools, or melena was present. He is married and has two kids. On palpation, there were two mass lesions in the infra-umbilical region extending to the left inguinal region. The lesions did not demonstrate any palpable cough impulse. On ultrasound examination, two hypochoic lesions were noted in the infra-umbilical area, of which left-sided lesion being the larger one extending till the left inguinal

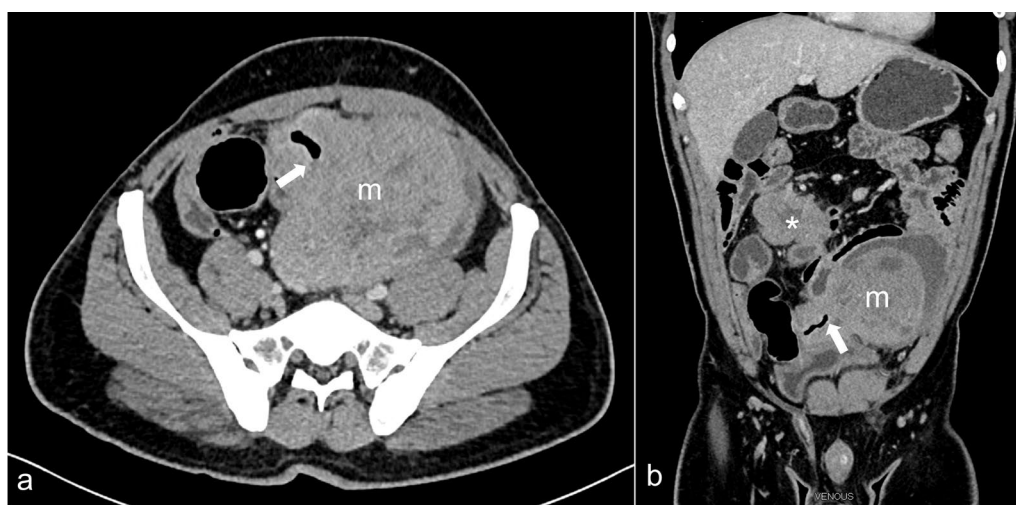
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region. The probable differentials given were lymphoma and primary bowel malignancy. CECT of the abdomen showed a well-defined mass lesion in the left lower abdomen with internal calcification and heterogeneous post-contrast enhancement (Figs. 1, 2). A rim of fluid was seen around the lesion. The lesion was seen invading the adjacent ileal loops with evidence of fistulous communication (Figs. 1, 2, 3). Another similar density lesion was noted in the right side of the abdomen cranial to the mass mentioned above. Few enlarged perilesional retroperitoneal lymph nodes were seen in para-aortic and external iliac

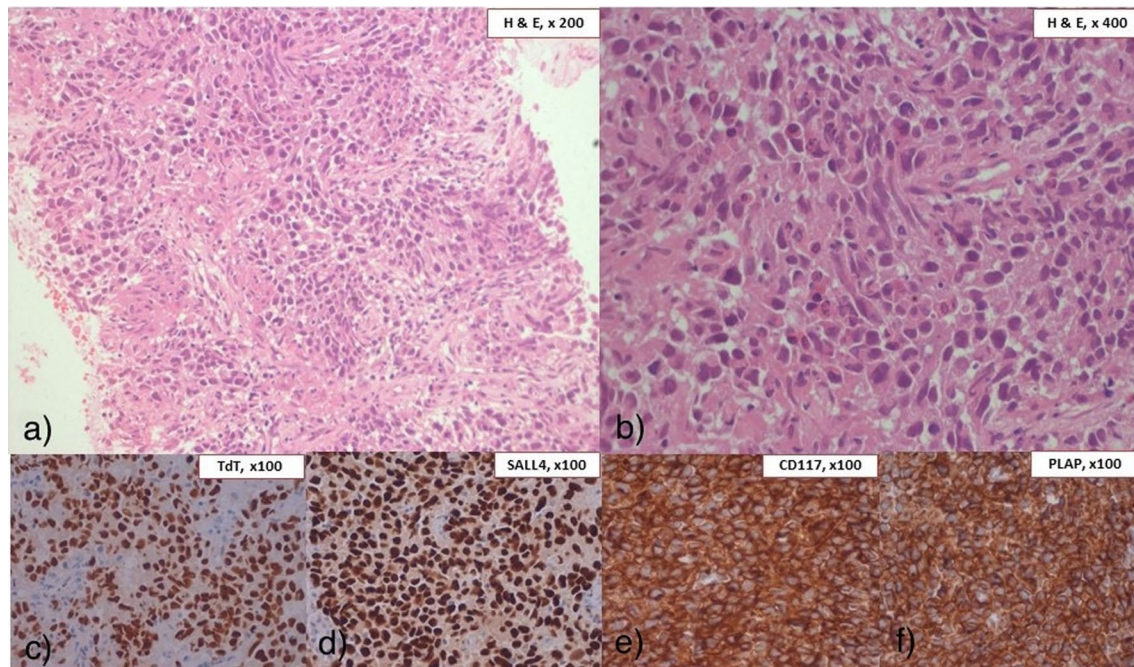
locations. On the arterial phase, the lesion was found to be supplied by the left gonadal artery (Fig. 4). So, a testicular pathology was suspected, and an ultrasound of the scrotum was performed. The left testis was found absent, with a right testis appearing normal in size and echotexture. The first radiological differential was germ cell tumor in an undescended testis with fistulous bowel communication and adjacent lymph nodal mass. Since to our knowledge, there was no literature with abdominal testicular seminoma showing bowel invasion, the possibility of gastrointestinal stromal tumor (GIST) and



**Fig. 1** Contrast-enhanced computed tomography (CECT) venous phase axial **a** and coronal **b** images showing a heterogeneously enhancing mass (m) in left lower abdomen with evidence of fistulous communication (white arrow) with the adjacent ileal loop. The mass is surrounded by a rim of fluid. Another similar density lesion (asterisk) is noted on right side of abdomen



**Fig. 2** Non-contrast computed tomography (NCCT) axial **a** and coronal **b** images with positive oral contrast showing a mass (m) in left lower abdomen with evidence of fistulous communication (white arrow) with the adjacent ileal loop. Another similar density lesion (asterisk) is noted on right side of abdomen



**Fig. 3** **a** The tumor cells are round to polygonal with abundant cytoplasm and some showing an occasional nucleolus, (H&E, 200). **b** Higher magnification of the same, (H&E, 400). Tumor cells are immunopositive for TdT **c**, SALL4 **d**, CD117 **e** and PLAP **f**



**Fig. 4** Contrast-enhanced tomography (CECT) arterial phase Maximum Intensity Projection [MIP] image, coronal plane showing the mass lesion (m) being supplied by the left gonadal artery (white arrow)

lymphoma with left-sided testicular agenesis were also kept as second and third differentials. These tumors have been reported to present with fistulous communication

with bowel loops. Lymphoma was considered as third differential because calcifications are not common before treatment.

A core needle biopsy was done from the lesions under ultrasound guidance. Histopathology showed large tumor cells arranged in sheets with abundant cytoplasm, granular chromatin and occasional prominent nucleoli (Fig. 3a, b). On immunohistochemistry, the tumor cells were positive for TdT, SALL4, CD117 and PLAP. Whereas negative for synaptophysin, chromogranin, cytokeratin and LCA which ruled out other differentials (Fig. 3 d, e and f). Therefore, a diagnosis of intra-abdominal seminoma with bowel invasion and nodal metastasis was rendered to the lesions.

The patient was started on chemotherapy with etoposide and cisplatin. He tolerated it well and was discharged after the first cycle of chemotherapy. The patient is on follow-up.

## Discussion

Terms like cryptorchidism or undescended testis describe a condition where testis is not normally located at the bottom of the scrotum. In such conditions, the testis could be positioned at the high scrotal region, pelvis, abdomen, or ectopic sites like femoral or perineal [2]. Cryptorchidism is more common among premature neonates than term neonates and is unilateral mainly [5, 6].



In an undescended testis, the transformation of gonocytes to spermatogonia and programmed cell death is hampered, which causes the accumulation of undifferentiated stem cells that have the potential to turn into malignancy at a later stage [6, 7].

The malignancy risk is higher in intra-abdominal testis, with a relative risk of 5%. The most frequent neoplasms are the germ cell tumors of which seminoma and embryonal cell carcinoma are most frequently found [8]. The risk of malignancy reduces in patients undergoing orchiopexy before puberty [9].

Abdominal testicular neoplasms tend to be asymptomatic and presents at 3rd or 4th decade. The symptoms range from an abdominal mass to dull dragging pain in the abdomen. Other complaints include infertility, dysuria (due to mass effect on the bladder), anorexia, and backache. Owing to the non-specific clinical presentation, diagnosing an abdominal testicular neoplasm without a history of cryptorchidism poses a diagnostic challenge [10].

The complication commonly observed in an abdominal testicular neoplasm is torsion. Testicular torsion could progress to infarction and rupture, causing hemoperitoneum and peritonitis [11].

Gastrointestinal complications from seminoma are exceedingly rare. However, a case of abdominal testicular seminoma causing mass effect on sigmoid colon and resultant bowel obstruction has been once recorded in the literature [1]. Otherwise, primary abdominal seminomas causing bowel-related complications could be rarely found.

However, testicular neoplasms (scrotal) can metastasize to the gastrointestinal tract in 5% of cases [12]. The route of spread could either be a hematogenous or direct extension from metastatic lymph nodes. Only a very few cases have been reported so far with metastatic lymph nodes from testicular seminoma causing direct bowel invasion [13].

However, to our knowledge, there are no published cases with primary abdominal testicular seminoma directly invading the small bowel loop. In our case, the testicular lesion was seen directly invading the adjacent ileal loop with fistulous communication. Therefore, our final diagnosis was germ cell tumor proved by histopathological and immunohistochemical examinations.

## Conclusions

In conclusion, our case emphasizes that clinical examination and from a radiological point of view, tracing the arterial supply is a quintessential part of arriving at a diagnosis.

## Abbreviations

CECT: Contrast-enhanced computed tomography; GIST: Gastrointestinal stromal tumor.

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## Author contributions

ASR contributed to conception, collection of data, prepared manuscript, drafted and revised the article. BS contributed to concept and design, preparing the manuscript, drafting the article, and final approval. AA contributed to collection of data and other patient information, drafted the article. PKD: clinical follow-up of the patient, drafted the article and final approval. PM made final pathological diagnosis, helped draft the article and reviewed. NDB contributed to revision of the article, supervision and final approval. All authors have read and approved the manuscript.

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## Availability of data and materials

The imaging data are available in departmental PACS in DICOM format. Other patient data are with medical records department.

## Declarations

### Ethics approval and consent to participate

Written informed consent for publication of their clinical details and/or clinical images was obtained from the patient. A copy of the consent form is available for review by the Editor of this journal. Ethics approval has been waived for case reports with written informed consent by Institutional Ethics Committee, AIIMS Bhubaneswar.

### Competing interests

The authors declare that they have no competing interests.

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