CASE REPORT

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Retroperitoneal Seminoma in Undescended Testis: A Case Report

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ABSTRACT

Testicular seminoma needs to be considered as a differential diagnosis for intra-abdominal mass in the male patient if there is a history of undescended testis. The risk of developing seminoma in an undescended testis is about 4-7.5 times greater than in a normally located testis.The risk of seminoma in undescended testis is increased even after orchidopexy.The identification of the draining gonadal vein can play a key role in the diagnosis of the testicular tumor in undescended intra-abdominally located testis. We report a case of seminoma in the retroperitoneal undescended testis in 50 years old male admitted for abdominal pain and distension

Keywords: *Abdominal Mass; Seminoma; Undescended Testis*

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INTRODUCTION

Undescended testis or cryptorchidism is one of the strongest risk factor for infertility and testicular cancer.[1] Seminoma constitute approximately 30-40% of testicular malignancy in normal testis whereas they comprise 60% of testicular malignancy in undescended testis. Several studies have pointed out that cryptorchidism is the single factor that carries a higher risk of testicular cancer and the relative risk for the development of seminoma in undescended testis has been found to be 4 to 7.5 times greater compared to normal testis.[2] Testicular germ cells may differentiate to give rise to seminoma or nonseminomatous tumors. It is important to differentiate seminomas and non seminomatous tumors which has important bearings on treatment and prognosis.[3] Little is known about the exact etiopathogenesis of germ cell tumors but, cryptorchidism is one of the most important risk factor for testicular germ cell tumor.[4] Demonstration of the mass being drained by the gonadal vein plays an important role in the diagnosis of testicular cancer in undescended intrabdominal testis.[5] We hereby report a 50-year-old male patient who had retroperitoneal undescended testis seminoma.

CASE REPORT

A 50 year old male patient presented to the Surgery out-patient department with right lower quadrant pain and sensation of abdominal fullness. An intra-abdominal mass was detected on palpation. Scrotal examination was not performed. Contrast enhanced CT (CECT) abdomen was performed for further evaluation whichrevealed approximately 10.1x9.7x8.0cm sized well defined heterogeneously enhancing mass with necrotic components in right lumbar region. The mass was supplied from the tortuous right gonadal artery. It was drained by tortuous and dilated venous plexus draining into the right renal vein and the draining vein was also continuous with tortuous veins extending caudally upto right inguinal canal. (Figure 1) However, no further caudal extension of the vessels into right scrotal sac seen. There was no evidence of retroperitoneal lymphadenopathy. Later, when asked the patient gave history that he had only one testis since birth which he didn't consider relevant initially. On scrotal examination, his right testis was not in the scrotum but the left testis was in its normal location. The mass was considered to be tumor of undescended right testis, most likely seminoma. Baseline and preoperative investigations were normal.

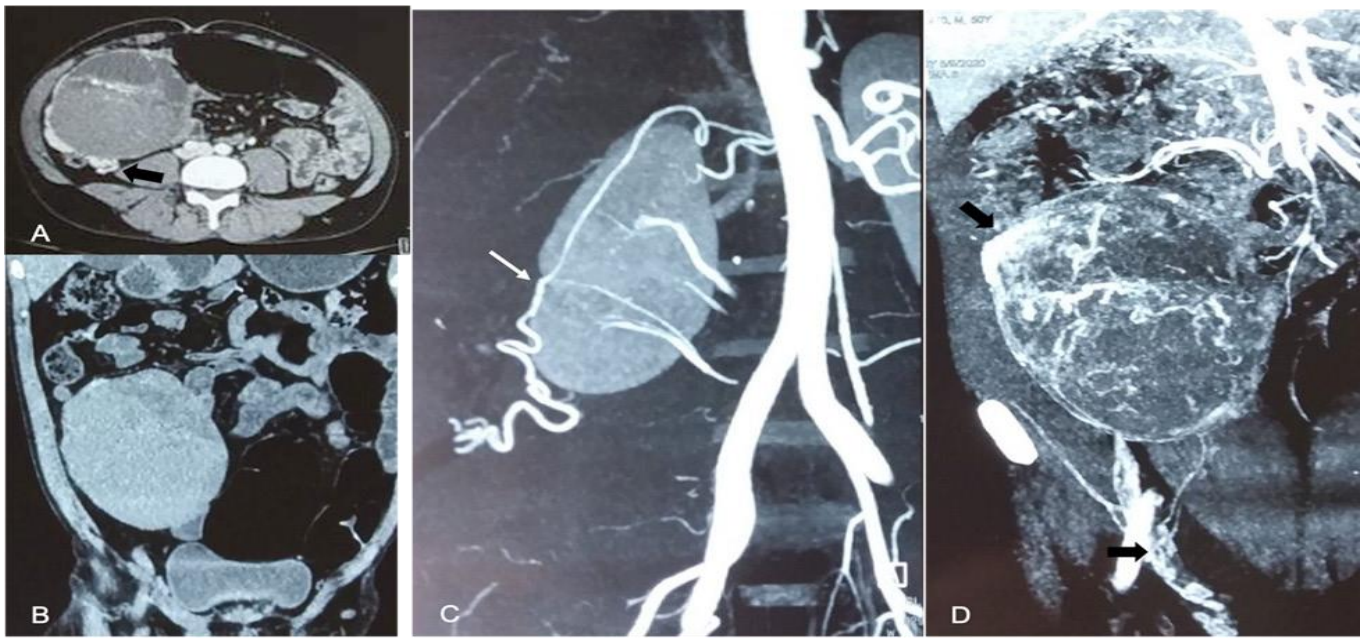

Figure 1: *Contrast enhanced CT axial (A), Coronal (B), arterial phase coronal MIP (C) and venous phase coronal MIP (D) images showing well defined heterogeneously enhancing mass in right lower abdomen.*

Tortuous right gonadal artery (white arrow) is supplying the lesion. Tortuous and dilated pampiniform plexus is draining the lesion (black arrow in A and D) *and extending upto right inguinal canal (lower black arrow in D) as well*

Considering a tumor originating from the right undescended testis, an operation was planned for the mass. The abdomen was explored through a Gibson incision. Intraoperatively, a smooth oval-shaped mass measuring approximately 14cm with intact glistening tunica vaginalis with overlying dilated and tortuous veins was seen in the right paramedian retroperitoneum. The mass was excised. On pathological examination, it was found to be a seminoma, including widespread areas with haemorrhage and necrosis. (Figure 2) The patient has received 3 cycles of Cisplatin and etoposide and is planned for radiotherapy.

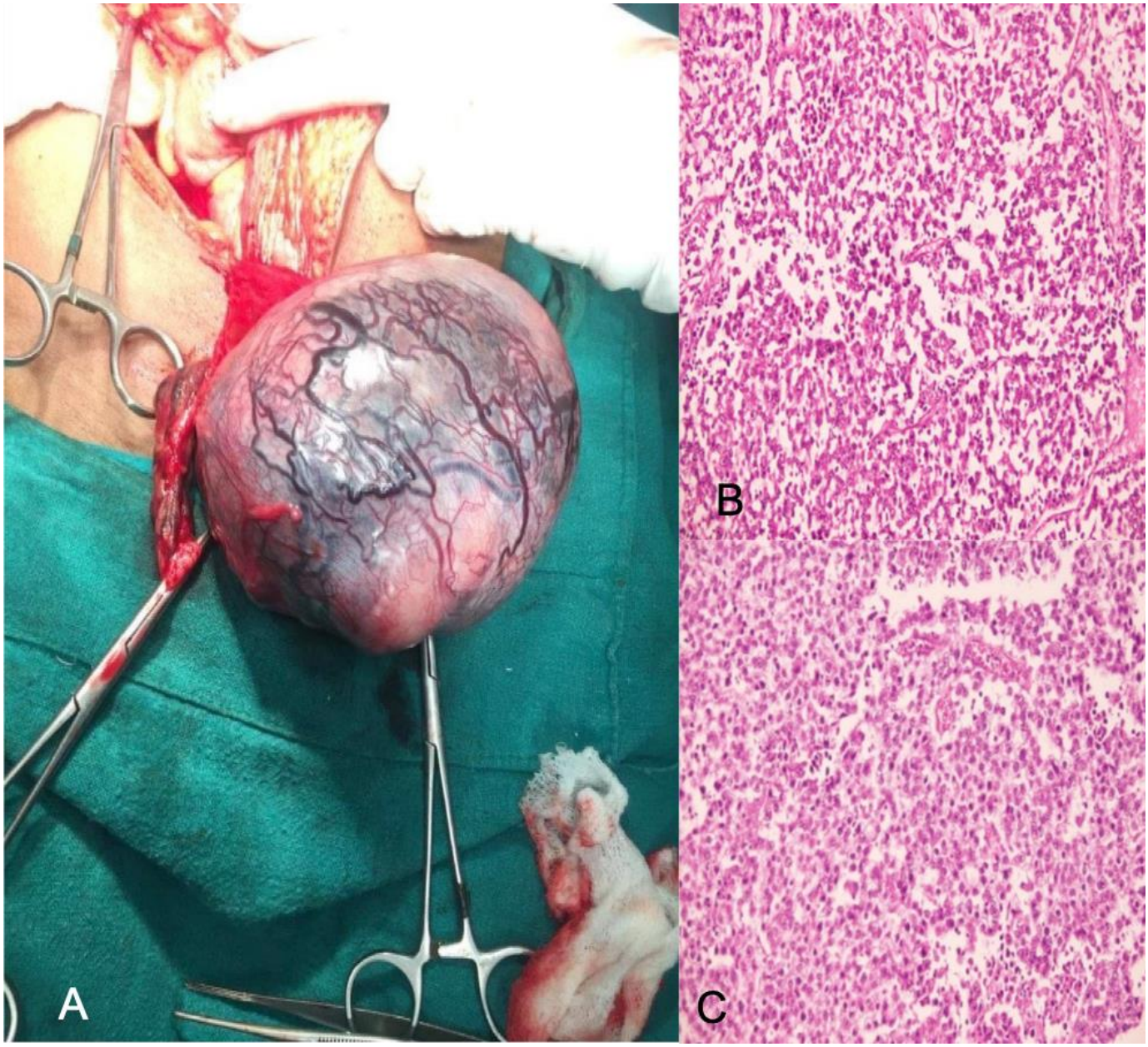

Figure 2: *Well-defined oval right testicular mass with intact tunica vaginalis and overlying dilated tortuous vessels (A). Histopathological appearance of the same lesion showing seminoma cells with distinct cell borders, pale nuclei, prominent nucleoli and sparse lymphocytic infiltrate (B and C).*

DISCUSSION

Testicular development begins with the formation of an elongated embryonic gonad developing from the genital ridge originating from the intermediate mesoderm lying ventral to the mesonephric ridge. As it descends from its abdominal position, it brings its vascular, neural and ductal connections with it. In the majority, the testis descends into the scrotum by 30-33 weeks of gestation. Undescended testes can be seen in 1-6% of newborns, the rate is higher in preterms, reported upto 30%. Most of these undescended testes migrate to the scrotum within 3 months of life. The arrest of descent can occur anywhere along its developmental pathway from the lower pole of the kidney down to the external inguinal ring.[6,7] Approximately 66% of the undescended testis are located in the external inguinal ring, 16% in the inguinal canal, and 10% in the intra-abdominal location. In about 3% of undescended testis, the location cannot be found surgically. Seminoma is the most common tumor seen in cases of the intra-abdominally located testis, which was the histopathology diagnosis in our case as well. The other histological types of tumor are embryonic cell carcinoma, teratocarcinoma and choriocarcinoma.[2]

The peak age of cancer development in undescended testis is in the third to fourth decade of life, similar to that in scrotal testis.[8] Intra-abdominal testicular tumor is often asymptomatic, and when symptomatic may mimic appendicitis, ureteric colic and symptoms related to mass effect in gastrointestinal and genitourinary tracts. Radiologic and pre-operative diagnosis of these tumors are often difficult, as the history of the undescended testis is not usually provided and imaging features are non-specific mimicking more commoner lymphadenopathy and sarcoma.[8,9] In our case also, the patient presented with a history of pain abdomen and abdominal fullness and didn't give the history of undescended testis initially considering it not to be relevant. In our case, tracing feeding and draining vessels of the lesion pointed towards the gonadal origin of the lesion, which led to an assessment of the right inguinoscrotal region. The Pampiniform plexus was seen extending upto the right inguinal canal, but not beyond that and the scrotal sac was empty which clinched towards mass in the right undescended testis. Thus, demonstration of the mass being drained by the pampiniform plexus/gonadal vein plays an important role in diagnosing testicular tumor in undescended testis. Testicular vascular pedicle sign is important for identifying intra-abdominally located testicular mass signifying demonstration of a testicular vein draining into the left renal vein or inferior venacava, originating from the mass.[5] In our case pampiniform plexus draining the mass was draining into the right renal vein, although most of the right pampiniform plexus drains directly into the inferior venacava. Thus, though rare, intra-abdominal testicular tumor should be thought of in any abdominal mass in the male of the third to fourth decade. Proper clinical history, physical examination and tracing of draining vessels in cross-sectional imaging will lead to the diagnosis of this uncommon pathology.

CONCLUSION

In the male patient with a history of undescended testis, testicular malignancy needs to be considered an important differential diagnosis for intra-abdominal mass. Computed tomography can play a vital role in the diagnosis by identifying the tumor and its testicular origin by identifying its draining gonadal vein.

CONFLICT OF INTEREST

None

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None

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