Seminoma of undescended testis with urinary bladder metastasis: A case report with review of literature

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Abstract
Cryptorchidism is the most common predisposing factor in the development of testicular germ cell tumors. Seminoma is the most common malignancy developing in a cryptorchid testis, usually has lymphatic but rarely hematogenous metastasis. The Urinary Bladder is an extremely rare site of metastasis of seminoma metastasis. A 29-year-old male patient presented to us with a history of infertility and an intra-abdominal mass. He was investigated and treated and was found to have an intra-abdominal seminoma with synchronous urinary bladder metastasis. He was treated with appropriate chemotherapy and continues to be in good health.

Key Words: Cryptorchidism, metastasis, seminoma, testicular germ cell tumors, urinary bladder

INTRODUCTION

Cryptorchidism or maldescended testis, is a common clinical diagnosis in young men and is one of the strongest risk factors for infertility and testicular cancer. Seminoma is the most common tumor developing in the cryptorchid testis occurs between 35 and 45 years and extremely rare before puberty. It usually presents as a testicular mass and has a tendency for lymphatic spread to the retroperitoneal lymph nodes, hematogenous spread being rare. Hematogenous spread occurs commonly to the lungs. Seminoma in undescended testis can present as an inguinal or abdominal mass which can be diagnosed clinically and radiologically, but its presentation as an abdominal mass with metastasis to the bladder is unusual. This case is unique because to the best of our knowledge, there are no previously reported cases in the literature with seminoma of maldescended testis with bladder metastasis with the synchronous presentation.

CASE REPORT

A 29-year-old married male patient presented to our surgical department with a history of infertility and mass in his right upper abdominal region for the past 4 months. Examination revealed a right undescended testis with a mobile mass in his right lower abdominal mass, with an empty right semi scrotum and normal left testis. Computed tomography scan revealed an intra-peritoneal heterogeneously enhancing mass lesion with a few enlarged nodules in the rectovesical pouch [Figure 1]. His...
serum lactate dehydrogenase was 231 mIU/ml (S1), and the other markers were normal. Exploratory laparotomy revealed a pedunculate mass with a pedicle through the right internal inguinal ring. Multiple nodules were present on the fundus of the urinary bladder [Figure 1]. He underwent excision of the mass with resection of the bladder deposits. Postoperative period was uneventful. Postoperative histopathological examination confirmed to mass to be a seminoma of the testis with multiple urinary bladder metastasis. The tumor cells were immunoreactive for c-kit, placental alkaline phosphatase, and OCT4 [Figure 2]. The patient underwent adjuvant chemotherapy (3 cycles of bleomycin, etoposide, cisplatin) on follow-up. Two years at follow-up, patient is asymptomatic and with no signs of disease (clinical and radiological).

**DISCUSSION**

The association between cryptorchidism and testicular germ cell tumors (TGCT) has been well-documented since the 1940’s. The relative risk of developing TGCT is 3.7–7.5 times higher for a cryptorchid testis than normal intrascrotal testis, because of the degree of environmental insults on the gonads, such as heat. It has been shown that an abdominal testis presents a greater risk for TGCT than an inguinal testis. The TGCT most commonly associated with cryptorchidism is seminoma. These classical seminoma’s develop from precursor lesions, intratubular germ cell neoplasia (carcinoma in situ), remain quiescent during infancy and thought to proliferate at puberty and later progress to an invasive disease. Seminoma has a high metastatic potential and it occurs in a highly predictable manner. Metastasis (usually lymphatic) initially occur in the retroperitoneal nodes before additional systemic involvement. The sites of metastases in order of decreasing frequency from TGCT are retroperitoneal lymph nodes, lung, liver, mediastinal lymph nodes, brain, kidney, gastrointestinal tract, bones, adrenals, peritoneum, and spleen. A few cases of seminoma metastatic to the prostate or bladder have been reported, but all are arising from extra gonadal germ cell tumors or metastasis that were detected on follow-up. To the best of our knowledge, no cases of gonadal germ cell tumors with synchronous urinary bladder metastasis have been reported. The histologic features of the metastatic lesions were usually similar in nature to those of the primary tumor except for seminoma in which the metastatic lesions proved to be a different histologic pattern in almost one-third of the patients dying from the disease. It should be axiomatic that whenever a patient with seminoma fails to respond appropriately to radiotherapy that his treatment is immediately discontinued and that appropriate biopsies be obtained to substantiate the histologic pattern present.

In this case, the histopathological features of the metastatic site were similar to that of the primary lesion, and the patient was treated in the lines of a metastatic seminoma.

**CONCLUSION**

We herein presented an educational rare case of pure seminoma in an undescended testis with synchronous metastasis to the urinary bladder in which we were able to diagnose and treat the patient with surgery followed by adjuvant chemotherapy with the curative intent.

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**Conflicts of interest**

There are no conflicts of interest.

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