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Late recurrence of Seminoma in the pelvis: A case report

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ABSTRACT

Recurrence of pure seminoma in atypical lymph node sites, such as the pelvis are rare masses that show clinical signs late in disease progression. We report a case of a 73-year-old male that presented with urinary retention and pain in his left lower extremity with a history of right radical orchiectomy and adjuvant radiation for a stage 1 pure seminoma 30 years prior. CT showed a left pelvic mass concerning for malignancy. Patient subsequently underwent surgical excision of mass that pathology identified as recurrence of pure seminoma. This case report emphasizes etiology of pure seminoma and late, contralateral pelvic recurrence.

Introduction

Pure seminomas are responsible for approximately 40% of testicular cancers in men aged 15–35 years old.[1,2] While recurrences of seminoma are rare due to impressive results from adjuvant therapies, recurrences can occur in areas outside the landing zones that are not consistent with the typical patterns of spread.[3] In stage 1 pure seminoma, late relapse rates post-orchiectomy and adjuvant radiotherapy are approximately 3%, mainly occurring in the mediastinum and/or pelvis.[2,4] We present a case of a 73-year-old male with late recurrence of pure seminoma in an atypical landing zone in the contralateral iliac fossa thirty years after initial treatment with radical orchiectomy and adjuvant external beam radiation therapy.

Case presentation

A 73-year-old male with a past medical history of right testicular pure seminoma presented to the emergency department with urinary retention and neuropathy of the left lower extremity. Thirty years ago, the patient underwent a right radical inguinal orchiectomy followed by adjuvant radiotherapy for stage 1 pure seminoma. Pathological analysis of the original specimen, exact total dose of prior radiation therapy and field of treatment was not known as medical records have since been destroyed. Physical exam revealed a fixed non-tender mass in the left lower quadrant and suprapubic area. Computed tomography (CT) demonstrated a 7.3 × 5.9 cm left pelvic mass with central areas of hypodensities concerning for a malignant lymph node (Figs. 1 and 2). The mass was overlying the left external iliac vessels causing compression and displacement of his bladder presenting as urinary retention and pain of the left lower extremity. Acute symptoms were treated with foley catheterization and full metastatic work with further imaging revealed no other sites of disease.

Initial tumor markers including AFP, B-HCG, and LDH were negative. Initial CT-guided percutaneous biopsy of the pelvic mass by interventional radiology was inconclusive, showing a possible small malignant round blue cell tumor. After consultation with oncology in the multidisciplinary tumor board, the patient was recommended to undergo surgical removal for definitive diagnosis and treatment. The patient underwent open radical resection of the left pelvic mass within the left iliac fossa with careful dissection away from the left external iliac artery and vein. Intraoperatively, the pelvic mass was encasing the left gonadal vessels, which was completely resected en-bloc with the mass. The patient did well postoperatively and was discharged on post-op day three after successful voiding trial and resolution of left lower extremity symptoms.

Final morphologic and immunophenotypic features were consistent with a germ cell tumor composed of recurrent pure seminoma. The neoplasm contained solid nests of tumor cells with clear cytoplasm, round to polygonal nuclei, distinct nuclei and finely dispersed chromatin mixed with lymphocytes in a background of extensive necrosis (Fig. 3). The sample was negative for isochromosome 12p. The patient was diagnosed with recurrent stage IIC seminoma (pTXN3M0SX) and was referred to medical and radiation oncology for consideration of adjuvant chemotherapy and/or radiation due to high risk of recurrence. Tumor

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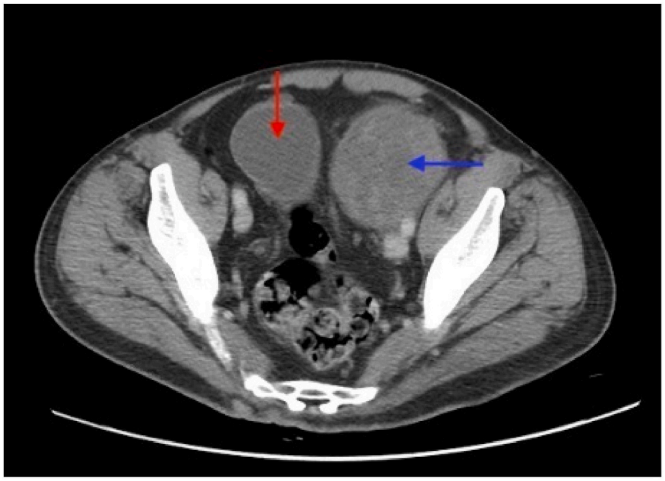

Fig. 1. Transverse CT section of left pelvic mass (blue arrow) and bladder (red arrow); courtesy of University Medical Center, Lubbock, TX. (For interpretation of the references to colour in this figure legend, the reader is referred to the Web version of this article.)

markers postoperatively remained negative up to last follow-up.

Discussion

Seminomas are malignant testicular germ cell tumors that are sensitive to radiation and chemotherapy that achieve high cure rates yet have the potential to recur in the pelvis, retroperitoneum, mediastinum, or other midline extragonadal sites.[2] Management most often involves orchidectomy with adjuvant radiotherapy, yielding excellent results with 5-year survival rates as high as 98%.[3] Studies have noted early relapse rates for stage I seminoma with adjuvant radiation or chemotherapy to be approximately 15–19% by 15 months.[4]

Regional lymphatic drainage plays a key role in location of testicular carcinoma relapse. Left-sided testicular tumors lack the potential for contralateral spread due to lymph node pattern.[2] Notably, Boujelbene et al. state that right-sided tumors do have potential for contralateral pelvic recurrence, as seen in our patient, as evidenced by inter-aortocaval, precaval, and preaortic lymph node regions draining the right testes.[2] Conversely, Taylor et al. recorded no contralateral pelvic metastasis from stage I right-sided testicular seminoma in their study.[1]

While early relapse rates of stage I seminomas are relatively uncommon, late relapse of seminoma, as defined by $>$ 2 years after initial treatment, is more rare at approximately 3%.[4] Of patients that present with stage I seminoma, 15% are thought to already have micrometastases to regional lymph nodes.[3] These relapse rates warrant lifetime active surveillance with CT, especially within the first few years after initial treatment. Benefits and risks of active surveillance, such as radiation exposure and financial status of the patient should be taken into account.[2] Radiotherapy traditionally targeted the para-aortic and ipsilateral pelvic nodes; however, this was reduced to only para-aortic nodes to limit exposure and toxicity.[3] In that same study done by Power et al. four cases were described with pelvic recurrence

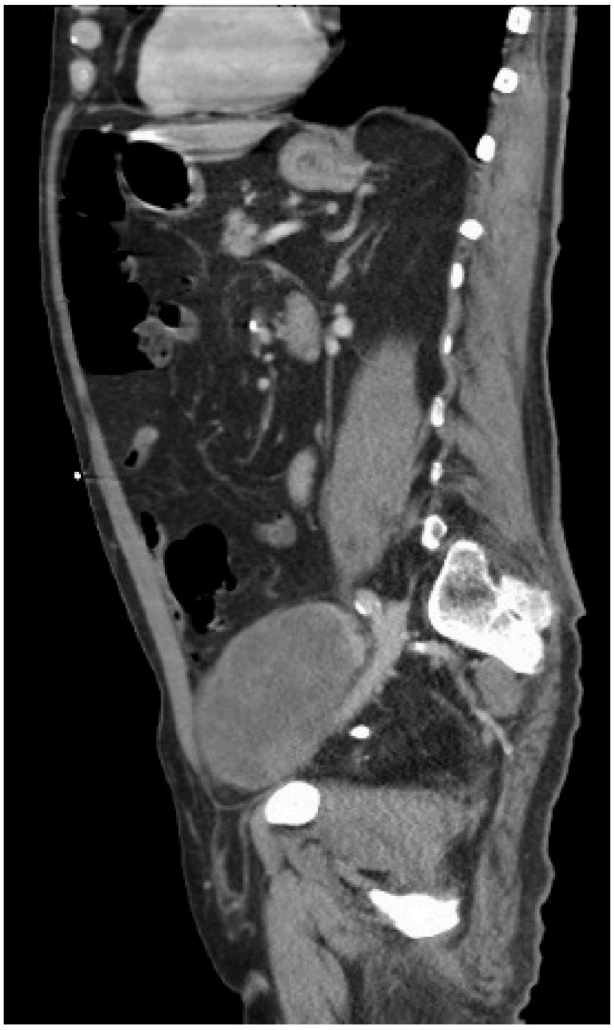

Fig. 2. Parasagittal CT section of left pelvic mass; courtesy of University Medical Center, Lubbock, TX.

(ipsilateral) of primary seminoma after receiving para-aortic radiotherapy alone with no pelvic irradiation.[3]

With a late pelvic recurrence of seminoma occurring almost 30 years later, it is possible that there was an immunological process helping suppress tumor growth. Gonzalez et al. postulated that natural killer (NK) cells and cytotoxic $CD8^+$ T cells play a role in delaying tumorigenesis by targeting certain cancer cells.[5] While NK cells can temporarily slow tumors by eliminating cells with absent major histocompatibility type 1 complexes, cancers eventually overwhelm the immune system and cause unregulated growth with emergence of clinical signs.[5]

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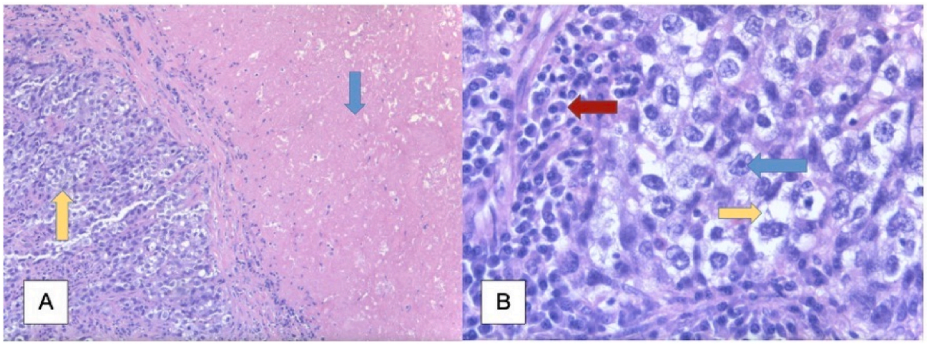

Fig. 3. Histology slides of pelvic seminoma; slide A shows areas of tumor (yellow arrow) and necrosis (blue arrow); slide B shows cells with distinct nucleoli (blue arrow) in a nucleus with finely dispersed chromatin surrounded by clear cytoplasm (yellow arrow). Plasma cells and lymphocytes are also seen (red arrow). (For interpretation of the references to colour in this figure legend, the reader is referred to the Web version of this article.)

Author contributions

SS wrote case report and reviewed literature; LB provided histology images and interpretations; AM and PS edited case report and provided guidance.

Declaration of competing interest

The authors have no financial or other conflicts of interest to disclose.

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