CASE REPORT

Isolated solitary bony metastasis of a nonseminomatous germ cell tumor

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Bone metastasis is usually a late manifestation in patients with germ cell tumors and a poor prognosis site. We report a case of 29-year-old man with a nonseminomatous germ cell tumor who presented with a single metastatic site in a vertebrae with spinal compression. He was treated with a left orchiectomy and four cycles of chemotherapy containing bleomycin, etoposide, and cisplatin. He attained complete remission.

Key Words: testes cancer, bone metastases, NSGCT

Introduction

Testicular cancer, although relatively rare, is the most common malignancy in men in the 15 to 35-year age group. Approximately half of patients with nonseminomatous tumor present with disseminated disease.

The first site of tumor dissemination is the retroperitoneum, specifically in the lymph nodes. Hematogenous spread is also possible to lungs, liver, bone, and brain. However, it is very rare to have metastases to these sites without concurrent involvement of retroperitoneal lymph nodes.

Case report

A 29-year-old male, presented to the emergency room, complaining of back pain of 1-week duration without associated neurological symptoms. His medical, personal, and family histories were unremarkable.

Physical examination revealed tenderness at percussion of the dorso-lumbar spine, no sensory loss or weakness of the lower limbs, and a non-tender left testicular mass measuring 3 cm in diameter.

Results of the complete blood count, biochemical profile, and plain chest x-ray were with in normal

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limits. A simple x-ray of the spine demonstrated a vertebral body fracture at the level of T12. Scrotal ultra sound showed a left testicular complex heterogeneous mass. He had elevated alpha feto protein (AFP)-1097, normal human chorionic gonadotropin (B-HCG), and slightly elevated lactate dehydrogenase(LDH) 247 μ/l. Computed tomography of the abdomen and pelvis failed to demonstrate evidence of soft tissue, or retroperitoneal lymph nodes involvement. CT of the chest was normal. A magnetic resonance imaging (MRI) of the spine confirmed a pathologic fracture of T12. A sub-clinical compression of the spinal canal was noted, Figure 1. Bone scan showed increased tracer uptake of T12.

He underwent a left radical orchidectomy. Pathologic examination revealed a malignant germ cell tumor, with elements of embryonal carcinoma, yolk sac tumor, and teratoma mature and immature elements. The tumor was localized to the testis without involvement of the spermatic cord. A CT scan directed bone biopsy of T12 confirmed the presence of an infiltrative neoplasm with morphologic and immunohistochemic elements compatible with embryonal cell carcinoma and teratoma of testicular origin. He underwent four cycles of BEP (bleomycin, etoposide, and cisplatin) to which he responded well, clinically, and radiologically. His AFP became negative after two cycles. However, a spine instability remained and the patient was directed to an orthopedic surgeon for an anterior fixation of the spine. At 15 months follow-up, he had no evidence of recurrence, clinically radiologically or biochemically.

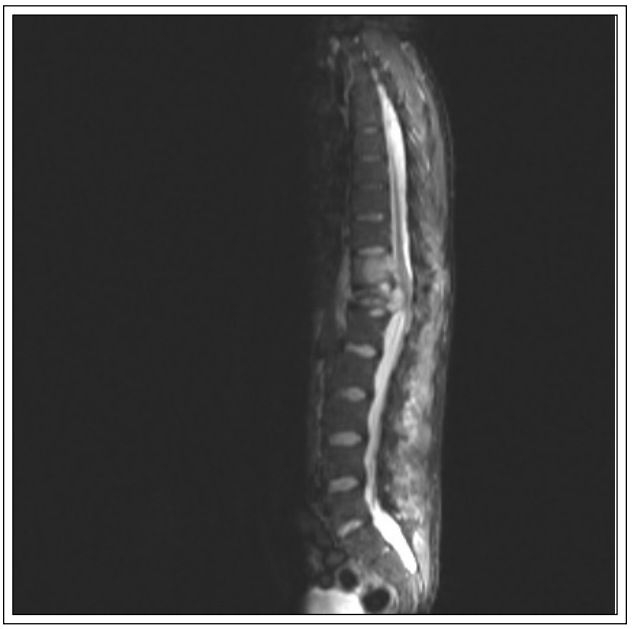

Figure 1. Magnetic resonance image (MRI) of the spine illustrating a pathologic fracture of T12, and compression of the spinal canal.

Discussion

The most common neoplasms involving the spine are metastatic in nature, originating from primaries of the breast, prostate, lung, or hematolocal malignancies. Bone and spine metastasis from testicular cancer is a rare occurrence, accounting for less than 1%.[1-3] Bone primaries must be part of the differential diagnosis, especially in young patients. The occurrence of a single bone metastasis site, even in presence of a testicular cancer, warrants a confirmation by biopsy to exclude a diagnosis of Ewing's sarcoma, osteosarcoma or a large cell tumor,

The most common sites of testicular cancer distant metastasis are lung, liver, brain and bones. Thoracic and lumbar spine are involved more than ribs, sternum, and long bones as reported by Bredael and associate.[4] In general it is very rare to have bone metastasis in nonseminomatous germ cell tumor, without retroperitoneal lymph nodes involvement or other visceral involvement. Bone metastases do not occur early in the evolution of the disease in patients with testicular cancer. Moreover, it was detected in 1% of cases of metastatic NSGT, and 5% of metastatic seminoma.[5]

Bone scintigraphy is used largely for early detection of skeletal metastasis for most carcinoma used to have a propensity for bone metastasis. However, this diagnostic modality is only sporadically used to screen for metastasis in patients with testicular cancer. Metastases are generally detected by conventional radiographies done for other reasons or because of specific symptoms. Data based on sensitive technology is therefore not available for testicular cancer.[6,7]

Usually the most common presenting symptoms of spinal involvement are, back pain as well as motor and sensory disturbances of the lower limbs. The persistence of back pain in a patient with cancer should initiate an investigation to eliminate spinal cord compression. In order to avoid permanent neurological damage, urgent treatment is required. The usual management strategies employed for treatment of these patients include steroids (to reduce inflammation and swelling), along with radiotherapy and/or laminectomy. Utilization of chemotherapy alone, or in combination with the aforementioned treatment modalities, is restricted to very chemo-sensitive tumor types with high response rates and rapid tumor reduction, resulting in improved patient response.[8,9]

Conclusion

Chemotherapy is the standard treatment for patients with metastatic nonseminoma and the more extensive forms of metastatic seminoma.[10]

In general it is very rare to have bone metastasis in nonseminomatous germ cell tumor, without retroperitoneal lymph nodes involvement or other visceral involvement. □

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