Introduction

Pott’s disease (PD), also known as tuberculosis spondylitis, is a rare disease of the spine which is typically caused by extraspinal infection. The basic lesion in Pott’s disease is a combination of osteomyelitis and arthritis, usually affecting more than one vertebra. The anterior aspect of the vertebral body adjacent to the subchondral plate is commonly involved. Spinal TB can include any of the following: progressive bone destruction leading to vertebral collapse and kyphosis, cold abscess formation (due to extension of infection into adjacent ligaments and soft tissues), spinal canal narrowing by abscesses, granulomatous tissue or direct dural invasion resulting in spinal cord compression and neurologic deficits. (1) Although the incidence of PD has recently increased in Europe and the United States, mainly due to immigration and an epidemic of acquired immune deficiency syndrome, it is still a rare disease. Here we present a patient who immigrated from India a few months ago who presented to the emergency room with mid back pain and was found to have Pott’s disease confirmed by biopsy and PCR testing.

Case Report

A 72 year old woman, originally from India, presented to the emergency department with a complaint of severe mid and upper back pain in April 2020. Her pain started 3 days ago and has progressively gotten worse which prompted her to seek medical attention. Further workup including MRI of thoracic spine reported severely compressed T3 with large paraspinal mass mostly in the anterior paraspinal soft tissues along with invasion of the spinal canal and compression of the spinal cord. Lytic lesion in the T12 region was also noted. C2-guided biopsy of the T12 lesion revealed poorly formed granulomas with giant cells, histiocytes and necrosis. Patient was initially evaluated by neurosurgery for cord compression, however she refused surgical intervention with the understanding of possible long term complication of paralysis. She was subsequently found to have cord compression. The patient chose to forego surgical intervention although risks were emphasized including permanent paralysis. Our patient was ultimately discharged on triple therapy for TB which included isoniazid/rifampin and ethambutol for 6-9 months.

Imaging & Pathology

A: Pathology: poorly formed granulomas with giant cells, histiocytes and necrosis.

B: Chest x-ray: negative for any pulmonary disease.

C. T2 Sagittal MRI T2 -Spine: Evidence of severe compression of the T3 vertebrae with T2 inferior and plate destruction. Large paraspinal mass throughout the T12 vertebra. Focal midline disc protrusion at L2-3 causing anterior extradural defect and moderate spinal stenosis.

D. T2 Axial MRI T2-3: Large paraspinal mass with invasion into spinal canal narrowed to 5 mm causing compression.

E. T1 Sagittal MRI L-Spine: Chronic abscess throughout the T12 vertebra. Focal midline disc protrusion at L2-3 causing anterior extradural defect and moderate spinal stenosis.

F. T2 Axial MRI L-Spine: S1 mass involving the posterior left vertebral and pedicle.

Discussion

In this case report we present a case of PD that initially mimicked metastatic disease. A comprehensive history with a focus on risk factors of TB such as exposure and immigration from areas with high TB incidence is important given the rarity of the disease in the US. Strong clinical suspicion should always be investigated. Pott’s disease should be considered when there are signs of spinal disease with risk factors. Diagnosis of PD should constitute a combination of histology, imaging, and importantly, clinical picture. Moreover, testing for active pulmonary TB should also be of primary concern. Histologic studies confirm the diagnosis of spinal tuberculosis in approximately 80% of patients. The most common cytological findings observed are epithelioid cell granulomas (90%), granular necrotic background (83%), and lymphocytic infiltration (76%). Scattered multinucleated and Langhans’ giant cells may be seen in up to 56% of cases. False-negative results of biopsy are common and, therefore, diagnosis of spinal tuberculosis must be made on ground of clinical manifestations and radiology when bacteriology proves negative.

More than 80% of these patients respond well to medical treatment alone and mortality rate is less than 10%. Surgical intervention in the presence of spine deformity or neurologic deficit is required in about 50% of the patients. Our patient initially presented with worsening right lower extremity weakness and paraparesis and subsequently found to have cord compression. The patient chose to forego surgical intervention although risks were emphasized including permanent paralysis. Our patient was ultimately discharged on triple therapy for TB which included isoniazid/ethambutol for 6-9 months.

Conclusion

In conclusion, although the incidence of tuberculosis spondylitis is low in the United States it is however a common disease in endemic areas. It is empiric to have PD as part of the differential in any patient that presents with back pain and imaging concerning for metastatic disease especially in someone from an endemic area. Given the relatively high percentage of culture negative specimens, it is reasonable to go ahead and treat PD if clinical suspicion is high.

Goals of spinal TB are to eradicate disease presence and prevent and/or correct any spinal deformity or neurological deficit. More than 80% of these patients respond well to medical treatment alone and mortality rate is less than 10%. Surgical intervention in the presence of spine deformity or neurologic deficit is required in about 50% of the patients. Our patient initially presented with worsening lower extremity weakness and paraparesis and subsequently found to have cord compression. The patient chose to forgo surgical intervention although risks were emphasized including permanent paralysis. Our patient was ultimately discharged on triple therapy for TB which included isoniazid/ethambutol for 6-9 months.

References