Learning Objectives
1. Recall the typical presentation of Hodgkin lymphoma.
2. Discuss an atypical presentation of Hodgkin lymphoma.
3. Describe the diagnostic workup required for Hodgkin lymphoma.

Introduction
Hodgkin lymphoma (HL) is a B-cell lymphoma that typically presents with asymptomatic lymphadenopathy involving the cervical region. With advanced disease, constitutional symptoms including fever, night sweats, and weight loss may be present in up to 50% of cases. Atypical presentations of HL challenge physicians to establish the correct diagnosis.

Case
A 38 year-old female with a history of type 1 diabetes mellitus, chronic kidney disease, and secondary hyperparathyroidism presented to her internist with a 3-month history of mid-thoracic back pain. There were no associated constitutional symptoms.

Examination:
Pain on palpation of the paraspinal muscles in subscapular area. No lymphadenopathy, vertebral tenderness, or neurologic abnormalities.

Pertinent Studies:
CXR: unremarkable. MRI T-spine: Lesion occupying the entire T4 vertebra and right posterior T4 rib and lesions in the T3, T6, and T7 vertebrae (Fig 1). CT scan: Additional lytic lesions in the right and left iliac bones, cervical and mediastinal lymphadenopathy, bilateral pulmonary nodules. Left iliac bone biopsy: Chronic inflammation consistent with possible infection versus brown tumor without evidence of malignancy. T4 vertebrae biopsy: Marrow fibrosis without evidence of infection or malignancy. Negative biopsy cultures. PTH: 702.7

Hospital Course:
Admitted to the hospital with acute worsening of back pain. CT scan revealed a new compression fracture of the T4 vertebra. Leukocytosis with a neutrophilic predominance was noted. She acutely experienced paresthesias and weakness in her lower extremities. Subsequent MRI revealed retropulsion of osseous fragments from the T4 vertebra fracture with narrowing of the spinal canal.

Treatment with IV steroids was initiated. The patient underwent T4 corpectomy and partial T4 rib head excision. Pathology revealed large, atypical, bi-nucleate cells with large nucleoli in an inflammatory background (see Figure 2). The patient was diagnosed with stage IV-B classical HL, and a chemotherapy regimen consisting of prednisone, vinblastine, doxorubicin, and gemcitabine was initiated.

Discussion
Hodgkin lymphoma has a bimodal age distribution with peaks at the ages of 15-34 years and older than 55 years (Fig 3). Bone disease at occurs at some time in the course of the disease in up to 20 percent of patients. Bone lesions on radiographs are typically osteoblastic. Diagnosis is made by evaluation of a biopsy of the involved tissue and is defined by the presence of Reed-Sternberg cells in an inflammatory background. Excisional biopsy is required to obtain sufficient tissue to properly evaluate its composition and establish the correct diagnosis, although core-needle biopsy may suffice when excisional biopsy is not feasible. In this case, possible brown tumor was a red herring.

Take Home Points
- Hodgkin lymphoma typically presents with asymptomatic supradiaphragmatic lymphadenopathy.
- Bone disease at presentation is uncommon but may be present in up to 20 percent of patients at some time in the course of the disease.
- Typically has a bimodal age distribution, patients can present at any age.
- Diagnosis of Hodgkin lymphoma is made upon evaluation and presence of Reed-Sternberg cells in the involved tissue.
- Excisional biopsy of the involved tissue must be obtained, but core needle biopsy may suffice when not feasible. Fine needle aspiration is inadequate to properly evaluate the architecture of the tissue.