Torticollis Revealing Brown Tumor of Cervical Spine: Case Report


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ABSTRACT
Brown tumor also known as osteitis fibrosa cystica is a focal bony lesion due to bone remodeling from either primary or secondary hyperparathyroidism. Torticollis is an unusual clinical presentation of the tumor. We report a 65-year-old female patient who had been on hemodialysis for chronic renal failure, admitted with severe cervical pain and torticollis due to a minor cervical trauma. The imaging revealed multiple bony lesions that turned out to be brown tumors.

Introduction
Brown tumor (BT) is a focal osteolytic lesion secondary to hyperparathyroidism. These lesions are termed ‘brown tumors’ because of their brownish coloring due in part to the presence of hemosiderin deposits. These tumors are commonly seen in patients with chronic kidney disease on dialysis who have repressed ability to convert 25 hydroxycholecalciferol to 1,25 dihydroxy-cholecalciferol, resulting in prolonged hyperparathyroidism[1]. BT is found in 3 and 1.5% of patients with primary and secondary hyperparathyroidism, respectively [2]. BT can be multiple or solitary. Radiographically, when multiple, brown tumors present similar findings as bone metastasis [3]. Multiple BT rarely locates in vertebra [4]. In this report, a case of multiple BT located in maxilla and cervical vertebra is presented.

Case report
A 65-year-old female patient admitted to the emergency for severe neck pain and torticollis following a fall while walking. The patient was on hemodialysis for chronic renal failure. His hemodynamic status was stable and the physical examination showed no neurological abnormality.

Computed tomography of the cervical spine showed a displaced fracture of the odontoid process, a fracture through left pedicle of C2 secondary to an expansile lytic lesion of C2 vertebral body with blown-out, thinned cortex. Other incidental findings were lytic bone lesion involving the hard palate and the scapulae. Because of the clinical manifestations and the radiological aspects a biological assessment is required. Laboratory investigations revealed elevated serum parathyroid hormone (PTH) level of 304 pg/mL (normal range 15–70 pg/mL). We concluded that the lytic lesions were in fact brown tumors.

The patient was referred to the neurosurgery department and was transferred to nephrology clinic for medical treatment.
Histologically, BT don’t have a specific appearance. They appear as multinucleated giant cells in a spindle cell matrix containing hemosiderin deposits [11]. There are no histological criteria to differentiate giant cell tumors [12]. In our case a biopsy wasn’t performed. The coexistence of multiple osteolytic lesions and hyperparathyroidism lead us to the diagnostic.

Conclusion

BTs represent a rare manifestation of prolonged hyperparathyroidism. They can be solitary or multiple, rarely located in spine. The diagnosis should be considered specially in the context of chronic renal failure to avoid invasive and unnecessary investigations.

Figure 1. Sagittal (a,b) and axial (c) CT demonstrating an expansile lytic lesion of C2 vertebral body causing a displaced fracture of the odontoid process and a fracture through left pedicle of C2.

Figure 2. Axial CT scan showing lytic bone lesion of the hard palate and the scapulae.

References


8. Hu, Jinbo MD; He, Shaoqun MD; Yang, Jian MD; Ye, Chen MD; Yang, Xinghai MD*; Xiao, Jianru MD Management of brown tumor of spine with primary hyperparathyroidism, Medicine: April 2019 - Volume 98 - Issue 14 - p e15007 doi: 10.1097/MD.0000000000015007


