

Pathological Fracture of the Spine in a Child

Sophia Trinh^{1*} and Anna Suessman²

¹University of Queensland – Ochsner Clinical School, New Orleans, LA, 70121, USA

²Pediatric Emergency Department, Ochsner Health, New Orleans, LA, 70121, USA

*Corresponding author: Sophia Trinh, University of Queensland – Ochsner Clinical School, New Orleans, LA, 70121, USA.

E-mail: v-strinh@ochsner.org

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Figure 1: X-ray cervical spine AP and lateral.



Figure 2: CT cervical spine without contrast.



Figure 3: MRI spine cervical-thoracic-lumbar (post contrast sagittal T1).

Clinical Image

A previously healthy and immunized 11-year-old-male is transferred from a satellite facility to the pediatric emergency department. He presents with worsening lower cervical and upper thoracic back pain ongoing for a month. The patient had been in a motor vehicle accident four months prior but denied any traumatic injury. Two months later, he began experiencing intermittent upper back pain unrelieved with NSAIDs or lidocaine patches. Recent cervical spine x-rays showed no abnormalities (Figure 1).

The child's pain worsened acutely after neck manipulation by a chiropractor. He presented to a satellite facility where CT imaging revealed a pathologic anterior wedge compression fracture of the C7 vertebral body (Figure 2).

On examination, the child is nontoxic but appears uncomfortable in a cervical spine collar. He has midline cervical tenderness to palpation with no obvious step offs, overt deformities, or overlying skin changes. Vital signs are within normal limits. He and his family deny recent fevers, night sweats, and weight loss. Initial laboratory workup is unremarkable.

A whole spine MRI with and without contrast (Figure 3) reveals a significant loss in the height of the C7 vertebral body, along with an enhancing soft tissue mass anterior to this vertebra. This soft tissue extends into the right lateral recess causing a mass effect on the ventral sac. There is no cord compression. A pathological fracture secondary to a malignancy is suspected and the child undergoes CT chest/abdomen/pelvis for further evaluation of the origin and extent of the disease.

Discussion

Pathological fractures in children often result from benign bone tumors, metabolic disorders, and bone infections [1,2]. A malignancy should always be considered as a potential cause [2]. Spinal cord injury without radiographic abnormality (SCIWORA) can occur following direct trauma and is more common in the pediatric population because of increased ligamentous laxity and head-to-body ratio [3].

REFERENCES

1. De Mattos CBR, Binitie O, Dormans JP. Pathological fractures in children. *Bone Joint Res.* 2012; 1: 272-280.
2. Canavese F, Samba A, Rousset M. Pathological fractures in children: Diagnosis and treatment options. *Orthop Traumatol Surg Res.* 2016; 102: S149-S159.
3. Pang D. Spinal cord injury without radiographic abnormality in children, 2 decades later. *Neurosurgery.* 2004; 55: 1325-1343.