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Biopsy alone for a symptomatic eosinophilic granuloma of the sternum

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Introduction: We present a boy with a painful solitary eosinophilic granuloma of the sternum treated successfully with biopsy alone and observation.

Methods: A 12-year-old boy was admitted with fever and a painful osteolytic lesion of the sternum. His pain progressively worsened over the previous 6 weeks. At presentation, he had constant and severe pain (8/10 points at VAS scale). On physical examination, the proximal sternum and left sterno-clavicular joint was prominent and painful on palpation. Chest radiograph was normal. Chest CT scan showed an osteolytic lesion at the malnubrium of the sternum with irregular margins, erosion of the anterior and posterior cortex, and periosteal reaction; the maximum diameter of the lesion was 4 cm. MR imaging showed a low signal lesion in T1 and a high signal lesion in T2 sequences. Bone scan was negative. Core needle biopsy was done.

Results: Histology showed eosinophilic granuloma. After the biopsy procedure, the patient experienced progressive resolution of his pain; 2 days after biopsy the patient experienced complete pain relief; fever was absent. Two weeks later, the swelling at the site of the lesion was significantly reduced. Six weeks later, chest CT scan showed reconstitution of the lesion. Because of the clinical and imaging improvement, no medical treatment was given; close follow-up including clinical examination and radiographs of the chest and sternum every 6 months was recommended. At 4-year follow-up, the patient is asymptomatic; radiographs show no evidence of local recurrence.

Conclusion: Eosinophilic granulomas, even if solitary often show aggressive imaging features. Their treatment is challenging, especially in children with symptomatic lesions. Although a biopsy is a diagnostic procedure, spontaneous resolution of clinical symptoms and healing of the lesion may occur after biopsy alone.