

## **RIB AND STERNAL LESIONS IN PEDIATRIC LANGERHANS CELL HISTIOCYTOSIS: TREATMENT AND OUTCOMES**

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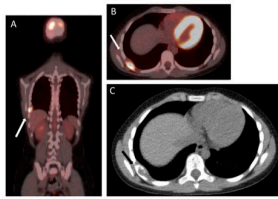
**Background:** Langerhans Cell Histiocytosis (LCH) is a rare disorder most commonly presenting as neoplastic accumulation of dendritic cells. Because few studies have reviewed the eventual outcomes after treatment at rib and sternum sites, this study aimed to (1) characterize a series of unifocal and multifocal LCH lesions in the rib and sternum clinically and radiographically and (2) determine the success and recurrence rates with different treatment modalities.

**Materials/Methods:** We conducted a retrospective analysis of patients younger than 18 years old with a diagnosis of LCH before June 1, 2021 at Texas Children's Hospital. Diagnosis was confirmed by biopsy and histology. Other clinical information was collected from patient medical record. Descriptive statistics were estimated and reported as means with range values or counts with percentages.

**Results:** Out of 686 patients queried for LCH diagnosis, 4 were isolated rib lesions and 7 were multifocal rib/sternum lesions. The most common radiographic finding was a lytic bone lesion (100% of cases, Figure 1). The most common clinical presentation was pain, with bone pain or deformity occurring in all patients with unifocal lesions. All unifocal lesions were treated locally via surgical resection plus intraoperative steroid injection or steroid injection alone. All other cases were multifocal and treated with chemotherapy. There were two cases of recurrence, with both occurring in the multifocal group. Median length of follow-up was 3.4 years. There was no mortality recorded.

**Conclusions:** Surgical resection with intra-lesional corticosteroid injection is an appropriate option for unifocal rib and sternal LCH lesions. Rib lesions as part of a multifocal presentation may be managed adequately with chemotherapy. Resection and steroid therapy alone may be reasonable for pediatric single-system multifocal skeletal lesions that are anatomically accessible and small in number and size, in contrast with a full chemotherapy regimen and associated ill effects.

**Images / Graph / Table**



**Figure 1.** 37-year-old female presenting with right-sided rib pain (case 8). (A) AP PET demonstrating hypermetabolism at the rib lesion. (B) Axial view of PET scan. (C) Axial CT demonstrating consolidation lesion at the 8<sup>th</sup> rib.