SHORT ABSTRACT

Spectrum of Chronic Recurrent Multifocal Osteomyelitis in a Belgian Cohort of Twenty-Five Children: Clinical Presentation, Imaging, Treatment and Outcome

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Keywords: Chronic recurrent multifocal osteomyelitis; CRMO; imaging

Objective
To document clinical characteristics of paediatric patients diagnosed with Chronic Recurrent Multifocal Osteomyelitis (CRMO). To collect data on the disease's imaging, outcome and management.

Methods
We retrospectively reviewed clinical characteristics, radiological data and treatment in paediatric CRMO patients, followed at our institution paediatric rheumatology department.

Results
Of the twenty-five patients enrolled, bone pain was the leading symptom (24/25 patients). On imaging, 148 lesions were identified with an average of 5.9 lesions per patient. The most common sites involved were the vertebrae (37%) and lower limbs (31%), followed by the pelvis (10%) and clavicles (9%). Our data confirm the known propensity for clavicle involvement, reaching 40% (10/25) of our patients on imaging, and 9/25 based on the pain symptoms. In our cohort, conventional radiographs showed characteristic lesions of

Figure 1: CRMO in a 9-year-old girl with pain at the left clavicle (medial). a) Coronal computed tomographic image shows expansion of the medial clavicle with osteolysis. b) T2-weighted MRI shows edema of surrounded soft tissues and sternoclavicular hyperostosis.
osteolysis, sclerosis or mixed patterns. CRMO lesions are described in early stages as osteolytic, and the sclerosis and periosteal reaction mostly occurred afterwards due to the healing process. In most cases CRMO showed a typical pattern of bone involvement on Magnetic Resonance Imaging (MRI): multifocal, T2-weighted hyperintense geographic lesions at the metaphysis and epiphysis adjacent to the growth plates of tubular bones. In general, lesions present as areas of bone marrow edema, which additionally implicates low signal intensity on T1-weighted images and contrast enhancement.

**Conclusion**

We present a paediatric cohort of twenty-five CRMO patients. The distribution of the bone lesions on imaging was consistent with published data. A phase-specific typical pattern of involvement could be found on imaging.

**Competing Interests**

The authors have no competing interests to declare.