Chronic Recurrent Multifocal Osteomyelitis: A Case Report of Adolescent Foot Involvement

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Introduction:

Chronic recurrent multifocal osteomyelitis (CRMO), is an auto inflammatory bone disorder occurring primarily in children and adolescents. It is not well recognized and often misdiagnosed as infection or tumor. Its diagnosis is usually one of exclusion and most commonly requires a bone biopsy. The reports in the literature are rare and no reports have been published in the foot and ankle literature to our knowledge.

Case Presentation:

In November 2008 an 8 year old Asian female presented to the hospital for an unusual appearing left foot xray following an inversion injury while twisting her foot playing outside. She was treated with fracture shoe and supportive care but continued to have pain, swelling and lower extremity redness 3 weeks after injury. She was referred to podiatry where follow up radiographs over a course of 2 months revealed 5th metatarsal shaft fracture, subperiosteal lifting and new bone formation.

She denied having any open wounds, constitutional symptoms or viral infection at time of injury. A third set of films at three months demonstrated bone resorption and lucency of the metatarsal, however CBC, ESR,CRP, and liver panel were unremarkable. An MRI was ordered which was suspicious for aggressive bony lesion and bone biopsy of the 5th metatarsal was obtained. Cultures of bone specimen did not yield any organisms. Pathologic evaluation of the samples revealed fracture healing. A second opinion was recommended and the patient was evaluated by Orthopedic oncology. Results were inconclusive and she was diagnosed with chronic osteomyelitis. She no longer had clinical symptoms and resumed normal activity.

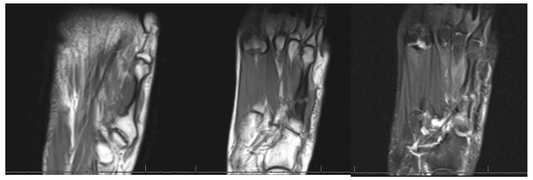
There were two episodes of recurrent foot pain in 2010 which were improved with NSAIDs and supportive care. She was followed peripherally but was eventually lost to follow up. 6 years later she re-presented at 14 years old for left foot stress fracture after running 2 miles at school. New radiographs at this time revealed new involvement of the 3rd and 4th metatarsals. Rheumatology was consulted and recommended whole body MRI. Multifocal involvement of her cuboid and sternum were observed and she was started on Enbrel and Pamidronate which completely resolved her symptoms.

Discussion:

Chronic recurrent multifocal osteomyelitis (CRMO) usually presents in adolescents and children. The consistent feature of CRMO is the insidious onset of pain with swelling and tenderness localized over the affected bones. CRMO has been described in SAPHO but reports in children usually do not have the consistent skin findings that SAPHO have. Diagnosis can usually be made without a bone biopsy, but will usually be sterile when cultured. Fortunately, It is usually treated with NSAIDs, but refractory cases may require corticosteroids, bisphosphonates, MTX, sulfasalazine, or TNF-alpha inhibitors.

Conclusion:

CRMO is a rare inflammatory bone disease that is still not fully understood. Reports in the literature are scarce and to our knowledge there have been no published reports in the foot and ankle literature. Our patient presented with primary foot involvement who initially responded well to NSAIDS but subsequently was placed on Enbrel and Pamidronate with good response. With our case report we hope to provide awareness of the disease to the foot and ankle community in hopes for quicker diagnosis, as well as unnecessary IV antibiotics, surgical biopsies, and hospital admissions.



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