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IMAGING OF CHRONIC CHILD OSTEOMYELITIS

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Chronic child osteomyelitis is a rare pathology, which is still poorly studied in terms of aetiology, diagnosis and management. It affects predominantly the long tubular bones, and is associated with a nonspecific clinical appearance and unclear instrumental findings. There was observed an estimated diagnostic delay of 18 months. Thus, imaging can be decisive for an early detection of all the lesions, including the asymptomatic ones.

Aim: To assess the distribution and the characteristics of the osteomyelitic lesions.

The most commonly affected sites are the long tubular bones, especially in the metaphyseal area, due to the presence of a high turbulence flow in the small vessels and a very low phagocytic cell activity. Some other frequently involved locations are the clavicle, the spine, the pelvis and the mandible. The main imaging findings are the lytic lesions, which are often round or column-shaped. They can lead to the formation of the Brodie abscesses. There is usually a fine surrounding sclerotic rim, especially in the small-diameter bones like metacarpal and metatarsal ones. When the process has a longer term, it affects the periosteum, leading to its elevation. A Codman’s triangle can be seen, with the ossification of the edge of the periosteum only, instead of a layered ossification with new bone shells. This is a sign of an aggressive evolution of the disease. The growth of an extra bone layer above the physiological one is known as involucrum. It can also form a cloaca, which is an opening from the involucrum. The necrotic tissue and the pus can be drained via sinus tracts to the skin surface. In some cases, a piece of devitalized bone can be trapped inside a normal one, forming a sequestrum.

Imaging provides multiple information about the size, location, number, characteristics and the extent of the lesions. It is of a great help for an early diagnosis, thus improving the outcome and extending to a minimun all potential complications. Further studies should be done to create appropriate criteria for classification of the disease.