

Enostosis

An enostosis (pl. enostoses, also known as a “bone island”) is a common benign bone lesion, usually seen as an incidental finding. They constitute a small focus of compact bone within cancellous bone. Enostoses can be seen on radiographs, CT, and MRI, and are considered one of the skeletal “don’t touch” lesions. Pathology

Enostoses are likely congenital or developmental, and are thought to represent either hamartomatous lesions or failure of osteoclastic activity during bone remodelling.

Location

Bone islands may occur anywhere in the skeleton, although there is some predilection for pelvis, long bones, spine and ribs.

Associations

osteopoikilosis: multiple bone islands

Radiology

Plain radiograph / CT

Enostoses are commonly seen as small round or oval foci of dense bone within the medullary space. The appearance of radiating spicules - “thorny radiation” or “fingers” - at the margins that blend with the surrounding trabeculae is classic.

In diaphyseal bone, the long axis of a bone island typically parallels the long axis of the involved bone. In the metaphysis, and other regions where trabeculation is not as linearly organized, the bone islands are typically more spherical.

The size of a bone island is typically <1 cm, although large bone islands may occur, particularly in the pelvis, and have been termed “giant bone islands” . Sometimes a slow increase in size is seen in bone islands over time.

MRI

Low signal intensity on all sequences (compatible with compact bone).



Nuclear medicine

There is usually no Tc99-MDP uptake, and a normal bone scan can exclude an osteoblastic metastasis or osteosarcoma. However, low grade scintigraphic activity has sometimes been reported in histologically proven enostoses.

Differential diagnosis

In the vast majority of cases, bone islands have a pathognomonic appearance. Larger lesions may sometimes pose a diagnostic dilemma, particularly in the setting of known malignancy.

Imaging differential considerations include:

Osteoblastic metastasis.

Osteoma.

Osteoid osteoma.

Low grade osteosarcoma.

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