

Osteoid osteoma

Definition

A benign lesion characterised by a richly innervated nidus less than 1.5cm in diameter that consists of primitive woven bone and osteoid.

History

First described in 1930.
Name coined by Jaffe in 1935

Epidemiology

11% of benign bone tumors
70% of pts less than 20
Rare under 5 or over 40
M>F 2:1
Usually solitary

Site

Bone involvement:

-femur	30%
-Tibia	27%
-Humerus	10%
-Spine	7%
-Talus	4%

In the spine the pedicles are most often involved
Tends to occur at the end of the diaphysis

Aetiology

Unknown

Clinical

Pain, which is worse at night, or after alcohol (due to vasodilatation)
The pain is mediated by prostaglandins and responds rapidly to aspirin
May be asymptomatic, particularly if located in the hand
Can be accompanied by muscle atrophy, a limp, painful scoliosis, synovitis, or abnormalities of bone growth including limb lengthening
Osteoid osteoma is the commonest cause of a painful scoliosis

May be associated with a mild leucocytosis

Radiology

A dense sclerotic area in a paracortical region with a central lytic nidus
Sharply round or ovoid
Usually less than 1cm; by definition less than 1.5 cm (McLeod in Dahlin's)
Curetted material on XR has a very fine trabecular pattern

Histology

Gross: Well demarcated nodule, often cherry red but occasionally very dense and white
Micro: -maze of small spicules of immature bone most often lined with prominent osteoblasts and osteoclasts
-No cartilage matrix formation
-i.e. the tumour is made up of a nidus of well vascularised osteoid

Differential diagnosis

Osteomyelitis
Bone island
Eosinophilic granuloma
Osteoblastoma
Osteosarcoma
Stress fracture

Treatment

Medical

Prostaglandin inhibitors have been shown to work but take a long time.

Surgical

The nidus is first localised (preferably with CT scan)
The present technique of choice is the burr down technique. This preserves the reactive bone around the lesion and reduces the risk of fracture.
Percutaneous methods using CT guided drills or percutaneous radiofrequency electrodes don't provide pathological material
Intraoperative nuclear scanning using a hand held Geiger counter can be used to confirm complete removal of the nidus.