POSNA

The Core Curriculum

Osteoid osteoma

Objectives

1. Describe symptoms and physical findings suggestive of osteoid osteoma
2. Describe the natural history of osteoid osteoma
3. Discuss useful imaging studies for the diagnosis of osteoid osteoma
4. Discuss management of osteoid osteoma of the extremities and of the spine

Discussion points

1. What is the preferred treatment at present for osteoid osteoma?

Discussion

Osteoid osteoma is a relatively common tumor of children, in one series accounting for 11% of benign bone tumors. It is more common in boys. Osteoid osteoma characteristically causes pain, worse at night, and relief of pain with aspirin is one of the diagnostic features. About half of all osteoid osteomas occur in the tibia or femur, another favored site is the posterior elements of the spine. Osteoid osteomas have a radiolucent core surrounded by a dense reactive bone. They may be on the surface of the cortex, in the cortex, or on the endosteal surface, in which case they elicit less reactive bone. Grossly, the radiolucent nidus is generally less than 10 mm in diameter, and microscopically demonstrates vascular channels, osteoblasts, and some giant cells. When the lesion does not produce reactive bone obvious on plain radiographs, delay in diagnosis is common. Symptoms secondary to splinting the involved bone are common such as a painful scoliosis with osteoid osteoma of the spine or limited range of motion with osteoid osteomas about the elbow. Radionuclide scanning is diagnostic with increased uptake evident both on the initial bone pool and at 2 hours. CT scanning, with thin cuts, is the imaging method of choice. The natural history of the lesion is favorable, and resolution of symptoms with anti-inflammatory medications alone is not rare. If symptoms are not managed, excision of the lesion is curative. En bloc resection was the traditional method, but percutaneous radiofrequency ablation is gaining favor. Percutaneous CT guided excision is another option, but more complications have been reported following this method than with radiofrequency ablation. The favored method at present if open surgery is necessary is the "burr-down" technique, which does not usually create a cortical defect exposing the patient to risk of pathologic fracture. Osteoid osteomas of the spine must still be removed by open excision. Scoliosis associated with osteoid osteoma of < 15 months duration resolves after excision of the lesion.

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