Osteoid osteoma: a case for conservative management

Sir, Osteoid osteoma is a benign bone tumour with a predilection for long bones, occurring predominantly in children and young adults. The conventional paradigm holds that, once suspected on clinical and radiological grounds, surgical excision is necessary, both for its cure and to exclude other, more sinister pathologies. We report the case of a 17-yr-old male with a classical clinical picture of osteoid osteoma, managed conservatively, and review evidence that contemporary radiological studies frequently allow confident identification without biopsy. This case adds to a poorly appreciated but enlarging body of evidence demonstrating the benign long-term outcome of this condition, which can be successfully managed with expectant therapy, employing non-steroidal anti-inflammatory drugs (NSAIDs) to suppress symptoms pending spontaneous healing, typically over 3–8 yr [1–6].

A 17-yr-old male presented with 3 months of symptoms referable to the right hip. Nocturnal pain was the predominant symptom and was promptly relieved with diclofenac therapy. On examination, the right hip showed moderate global restriction in range of motion. The erythrocyte sedimentation rate, rheumatoid factor status and full blood examination were normal. An X-ray revealed a 1-cm lucency in the right femoral neck. The clinical impression was that of osteoid osteoma. A bone scan revealed increased uptake in the right femoral neck, with no uptake elsewhere. A computed tomography (CT) scan showed a 7-mm lytic lesion anteriorly in the right femoral neck (Fig. 1A, B). This represented a radiolucent nidus with surrounding sclerosis, which is the typical appearance of an osteoid osteoma.

The management options of excision or conservative management with long-term anti-inflammatory therapy and monitoring were discussed. The patient elected to take the latter option.

At 12 months, non-steroidal analgesics continued to provide adequate pain relief. A CT scan revealed minimal change compared with the initial scan. At 2 yr, the patient ceased anti-inflammatory treatment and remained pain-free. At 7 yr, when the patient was symptom-free, a scan revealed radiological resolution of the lesion (Fig. 2).

Classically, osteoid osteoma has a male preponderance, with approximately 50% of all lesions found in the femur and tibia, usually no more than 2 cm in size [7, 8]. It is rarely seen in older people, with the great majority (86%) reported under the age of 30 yr. This epidemiological pattern prompts speculation that spontaneous resolution occurs over time [7].

Surgical intervention, both diagnostic and therapeutic, has been conventionally considered in this condition,
and newer percutaneous means of excision have also been tried. Once the tumour has been excised, recurrence is unusual unless the nidus has been incompletely removed. However, these invasive procedures necessitate periods of immobility and significant morbidity [9]. Kneisl and Simon reported 24 cases of osteoma, comparing the course of half the patients treated operatively with those managed without surgery [10]. The average hospital stay in the former group was 7 days and recovery time till normal activities resumed averaged a lengthy 6 months. Notably, all 12 patients managed with NSAIDs alone had a good analgesic response. Therapy was required for an average of 33 months (range 30–40 months). Three of these went on to surgery. Two requested an operation after more than a year of successful treatment. One patient suffered mild upper gastrointestinal bleeding.

Somewhat surprisingly, pain related to such a small lesion is quite severe. It characteristically occurs nocturnally and responds dramatically to NSAID therapy. High levels of the prostaglandin (PG)E2 and prostacyclin (PGI2) have been found to be produced within the nidus, explaining the excellent response to aspirin-like drugs [11, 12]. The surrounding sclerotic bone produces prostaglandins at the same rate as normal bone.

Advanced radiological techniques now allow us to evaluate pathology more confidently, sometimes eliminating the need for histological confirmation. Investigation of lesions with plain X-ray alone may be insufficient to make the diagnosis, particularly if a radiolucent nidus, typically no more than 1 cm in diameter, is not well seen. CT scanning with 2–3-mm fine cuts offers higher definition in this instance. Experience with magnetic resonance imaging (MRI) in osteoid osteomas is accumulating. Recently, serial MRI of two conservatively treated lesions has been described [13]. Peri-lesion soft tissue inflammation with the use of MRI may also be appreciated [14].

This report adds to the accruing evidence that osteoid osteoma has an often underappreciated tendency to regression over time. We propose that surgery be reserved for the rare case where symptoms cannot be effectively controlled with medication, or where diagnostic uncertainty genuinely exists.

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