

CASE REPORT

UNUSUAL LOCALIZATION OF OSTEIOD OSTEOMA IN PATELLA

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ABSTRACT: Osteoid Osteoma is rarely located in patella. The case report of 16 years boy with Osteoid Osteoma in patella is presented hereunder. The typical symptom is pain worsening at night and relieved by administration of aspirin. Complete surgical excision is the classical treatment of choice with complete relief and low recurrence.

CASE REPORT: A 16 years young boy presented in orthopaedics outpatient department with 6 months history of intense pain in right knee. Pain was more at night, and well localized to patella. There was no history of trauma. Pain was relieved by Ibuprofen.

On examination there was no redness or local rise of temperature. Knee movements were restricted terminally. Blood investigations were unremarkable, and plane radiographs of knee did not show any abnormality [Fig.1]. MRI showed a well defined circumscribed lesion at the junction of upper third and middle third of patella with nidus in center [Fig.2]. This lesion was 3 mm. deep to the anterior surface of patella.

Considering clinical and MRI findings a provisional diagnosis of Osteoid Osteoma was considered. A local excisional biopsy was planned to confirm diagnosis and to provide a chance of immediate relief. Under regional anaesthesia a longitudinal incision was taken on anterior aspect of patella. Skin flaps were elevated on both sides. According to the method suggested by Johnston reactive bone on anterior aspect of patella was shaved by sharp osteotome until the red nidus exposed. Then the nidus was removed with curette and sent for histopathological examination. Haemostasis was achieved, and skin layers were sutured with nonabsorbable interrupted sutures. Histological examination was performed. Microscopic examination of curetted material showed exuberant new Osteoid and bone formation by plump osteoblast with vascular and cellular stroma [Fig.3]. The pain was gradually relieved and particularly night pain disappeared. Patient was followed up for four years. He remained asymptomatic and there was no recurrence of pain.

DISCUSSION: Osteoid Osteoma is benign bone lesion consisting of well demarcated osteoblastic mass called nidus of less than two centimeter size surrounded by a distinct zone of reactive bone sclerosis [2].

Osteoid Osteoma account for 5% of all bone tumours and 11% of benign bone tumours [3]. It is commonly located in long tubular bones of lower extremity, posterior element of spine, proximal humerus and small bones of hand and foot. Patellar Osteoid Osteoma is very rare, reported incidence is 3% of all patellar tumors [4]. Chalazonitis et al reported that Localization of Osteoid Osteoma in patella is unusual [5]. Cohen I et al also reported unusual location of Osteoid Osteoma in flat bone and cancellous bone [6]. Osteoid Osteoma occurs most frequently in second decade and is rare before 5 years and after 30 years. It affects males twice or more than females.

Osteoid Osteoma is classified as cortical, cancellous and subperiosteal. Cortical Lesions are most common and found in 80% cases.

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The classical presentation includes focal skeletal bone pain, which worsens at night and is frequently relieved with small dose of aspirin. Pain is often exacerbated by alcoholic beverages due to vasodilatation [2]. Mak et al described that patellar Osteoid Osteoma often present with knee pain with significant diagnostic challenge resulting in delay in treatment [1]. Panagoitis G. et al also reported Osteoid Osteoma of patella presenting with atypical pain with difficulty in diagnosis [7]. Previously pain associated with Osteoid Osteoma was thought to be caused by the numerous nonmyelinated axons that are present in nidus. More recently high levels prostaglandin (especially PGE2 and PG12) and prostacyclin found in nidus are presumed to be the cause for intense pain [8, 3], reactive sclerosis and nonspecific inflammatory changes of soft tissue.

In most cases, the plain radiographs, combined with the characteristic clinical history, are all that required to establish correct diagnosis. Plain radiographs have low diagnostic value in detection of the lesion especially in the case of spinal or intra-articular lesion where CT, isotope bone scan and MRI are reliable imaging techniques. CT remains the best imaging modality for the diagnosis of Osteoid Osteoma [9]. Classical radiological presentation of an Osteoid Osteoma is radiolucent nidus surrounded by a dramatic reactive sclerosis in the cortex of bone. The center can range from osteolytic, partially mineralized to entirely calcified region. Technetium-99 bone scan demonstrate an intense focal increase in uptake in the nidus resembling a headlight in fog and double density sign. CT scan demonstrates Osteoid Osteoma as bull's eye, while MRI shows well circumscribed lesion.

Osteoid Osteoma is self limiting lesions that may mature spontaneously over the course of several years. The nidus will gradually calcify, then ossify and finally blend with the surrounding bone. During maturation period local pain gradually diminishes. There are reports of Osteoid Osteoma transforming into osteoblastoma but there is no reports of malignant transformation.

Patellar tumour represents special management problem because of its subcutaneous location, relationship to extensor mechanism and difficulties in interpretation of radiograph [10]. Various treatment options are available for the treatment of Osteoid Osteoma. Conservative treatment with NSAID or aspirin is an option in the management of Osteoid Osteoma as the lesion usually heals over the course of several years. Complete surgical excision is the classical treatment of choice. Percutaneous radiofrequency ablation is safe quick, minimally invasive and extremely effective method for management of Osteoid Osteoma [11]. Another less invasive technique is arthroscopic, CT guided enbloc retrograde resection [12]. Altinel et al described simple non invasive and most effective method of percutaneous resection using skin punch biopsy needle [13]. Interstitial laser photocoagulation and intralesional injection of ethanol are other less invasive techniques [14].

Though many less invasive treatment options are available for Osteoid Osteoma, open surgical excision was performed in our rural set up.

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FIGURE 1 : Radiograph of right knee shows no abnormality.

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FIGURE 2: MRI of right knee show well defined circumscribed lesion in patella.

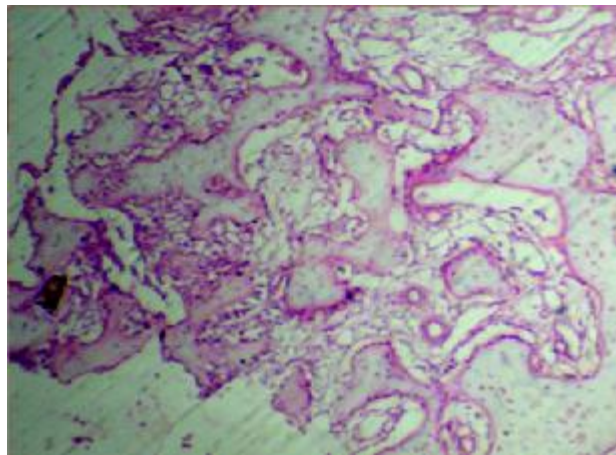


FIGURE 3: Microphotograph showing exuberant new Osteoid and bone formation by plump osteoblast with cellular and vascular stroma (H&E 10 X)

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