

Osteochondrosis of Primary Center of Patella: A Case Report

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Learning Point of the Article:

Osteochondrosis of the primary center of the patella should also be taken into account in a growing child with knee pain, which is a rare self-limiting disease and should not be over-treated.

Abstract

Introduction: Osteochondrosis of the primary ossification center of the patella (Kohler's Disease) is a rare and self-limiting condition of unknown etiology. Sometimes it may be found as normal variant.

Case Report: A 7-year-old boy presented with anterior right knee pain. On radiological examination, there was increased density, irregularity, and fragmentation of the patellar primary ossification center. Activity modification and exercise led to marked symptomatic improvement after 1 year.

Conclusion: It was concluded that the disease either physiological or pathological, diagnosis is usually difficult. However, the treatment is simple. There was improvement functionally as well as radiologically with activity modification.

Keywords: Osteochondrosis, primary center, patella.

Introduction

There are two different kinds of osteochondrosis described for patella. It is called Kohler's syndrome if it involves primary center of patella and Sinding-Larsen-Johansson if involves secondary center of patella [1]. Kohler's disease of patella a group of self-limited conditions due to unknown etiology in which endochondral ossification is disturbed. Very few cases have been reported in literature [2, 3, 4]. Pain in the patellar region of a growing child is a common occurrence. Although in osteochondrosis, majority of the patients become asymptomatic without any therapy. The prolonged patellar pain of an otherwise healthy child is often caused by chondromalacia. Osteochondrosis or aseptic bone necroses may also occur in the patella. On continued search of the literature, it is found that secondary osteochondrosis of patella is not so uncommon in adult and may be due to prolonged corticosteroid intake, systemic lupus erythematosus, etc. In such cases, lesion was found in superior pole of patella commonly [5, 6, 7, 8]. There is

possibility of lesion in lower pole of patella in case of Sinding-Larsen-Johansson syndrome [9]. Similar feature may also occur due to multicentric ossification of the patella [10]. Coelho suggested that characteristic images had an important role in defining the etiology and developing pathophysiological hypotheses of disabling knee pain [11]. Involvement of whole patella in osteochondrosis is seldom described in the literature. We present a case report of such a patient.

Case Report

A 7-year-old boy presented to the outpatient department of IGIMS, Patna (Bihar) due to pain in the right knee and difficulty in standing from a sitting position. The patient was asymptomatic 22 months ago. The pain usually appeared in the front of the right knee, during climbing stairs, long-distance walking, running, and athletic activities. The symptoms persisted occasionally for several hours, and the pain made it difficult to sleep in night. There was no history of trauma. The

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Author's Photo Gallery



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Figure 1: Swelling at anterior aspect of Rt. Knee in a 7-year-old male, having restriction of extreme flexion movement of the right knee due to pain.



Figure 2: Osteochondritis of patella – primary center. Irregularities, fragmentation, and sclerosis of patella in immature skeleton.

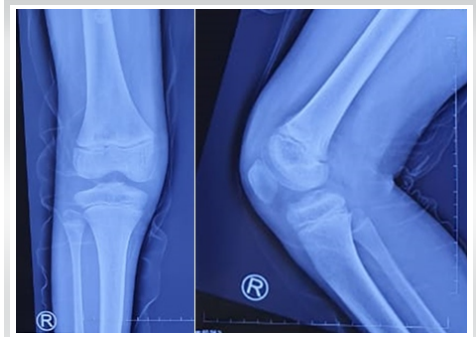


Figure 3: Follow-up after 2 years (resolved) – X-ray right knee – anteroposterior and lateral views.

child was healthy and his development was normal. The routine blood investigation was normal. Swelling was present over the right knee, which was slightly warmer than the other (Fig. 1). Extreme flexion of the right knee was restricted and painful. Patellar mobility was normal, without luxation on either side. Hip examination was normal. Radiologically, the irregularity, fragmentation, and sclerosis were seen in the right patella (Fig. 2). The clinico-radiological diagnosis of osteochondrosis of primary center of the right patella was made. The treatment consisted of, restriction of sports activities, limited physical activity (ascending stairs, long distance walking, and running) knee bracing, quadriceps-hamstring stretching exercises, and symptomatic treatment with non-steroidal anti-inflammatory medications for pain. Initially, ibuprofen tablet was given twice daily for 2 weeks then occasionally for interim pain. He gradually becomes asymptomatic in 1 year and remains asymptomatic when he came for follow-up after 2 years of treatment. Furthermore, on radiological assessment lesion was resolved at 2 years (Fig. 3).

Discussion

Kohler first described disturbed ossification of whole patella in 1908, which was later quoted by Moffatt [12] in 1929. He is also known for description of osteochondrosis of the navicular bone of the foot. Anders described aseptic osteonecrosis of the patella in one patient [10]. This condition is regarded as osteochondrosis of the primary center of ossification of the patella [13,14, 15]. On the other hand, Keats [16] believes that irregular ossification of the patella is a normal developmental variation, as demonstrated with several cases in his textbook. Franceschi et al. reported the first case of simultaneous location of osteochondroses of the two ossification centers of both patellae in 9-year-old boy [2]. Sakai et al. found osteonecrosis of the patella in nine patients (ten knees) while evaluating non-traumatic osteonecrosis of the femoral head in 60 patients [4]. Pinar et al. have been reported three similar cases and concluded that the process either physiological or pathological has a benign course and favorable prognosis [17]. A case of bilateral osteochondrosis of the primary patellar ossification

centers was reported in a 7-year-old child by Dharamsi and Carl [18]. Similar type of bilateral cases was reported by Corten et al. in 11-year-old child with growth retardation and suspected that growth retardation rather than growth spurt is an important etiological factor [19]. In contrast, Traverso et al considered rapid growth spurt as one of the possible causes which contribute to the development of osteochondritic lesions [20]. Sometimes the X-ray findings do not correlate with the clinical symptoms. The patient here described was otherwise completely healthy with normal growth and development. There was no history of trauma, steroid intake, inflammatory disease; he became symptomatic after sports and physical activity. Age, etiology, clinical feature, and radiological features are in accordance with the findings previously reported in the literature [3, 7, 8]. In the present case, radiological features of osteochondrosis were present in the entire patella.

Clinical Message

Osteochondrosis of the primary center of patella is a rare and may remain undetected due minor symptom and need high index of suspicion to diagnose. It should not be over treated as it is self-limiting condition with good prognosis.

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