CASE REPORT

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Received: 03.11.2024
Acceptance: 13.05.2025
DOI: 10.18521/ktd.1578620

Knee Pain in the Growth Period in Primary Care: Osgood-Schlatter Disease

ABSTRACT

Osgood-Schlatter Disease (OSD) is one of the common causes of knee pain in children and adolescents during the growth period and is more prevalent among those involved in sports. OSD typically develops due to repeated knee extension and the rapid growth process, leading to microtrauma and apophyseal avulsions at the secondary ossification center of the tibial tubercle. This case report examines a 12-year-old girl engaged in gymnastics who presented with complaints of left knee pain. Although physical examination revealed no pathological findings in either knee, radiographic evaluations showed irregularities and micro avulsion findings in the tibial tubercle. Initial treatment included activity restriction, NSAID usage, and supportive bandaging. After a two-month follow-up, a significant reduction in pain was observed, though pain recurred during periods of intense exercise. Treatment for OSD is generally conservative, focusing on pain control and exercises that enhance muscle flexibility. While the disease often resolves spontaneously, symptoms may persist into adulthood in some cases. This case highlights the importance of early diagnosis and conservative treatment approaches for OSD in primary healthcare settings. Family physicians should consider OSD in the differential diagnosis of knee pain in children and adolescents, and refer patients for multidisciplinary evaluation when necessary.

Keywords: Primary Health Care, Osgood- Schlatter Disease, General Practice.

Birinci Basamakta Büyüme Döneminde Diz Ağrısı: Osgood-Schlatter Hastalığı

ÖZET

Osgood-Schlatter Hastalığı (OSH), büyüme döneminde çocuklarda ve ergenlerde diz ağrısının yaygın nedenlerinden biri olup, özellikle sporla uğraşan bireylerde daha sık görülmektedir. Osgood-Schlatter tipik olarak tekrarlayan diz ekstansiyonu ve hızlı büyüme sürecine bağlı olarak gelişmekte ve tibial tüberkülün sekonder ossifikasyon merkezinde mikrotravma ve apofizyal avülsiyonlara yol açmaktadır. Bu olgu sunumu, jimnastikle ilgilenen ve sol diz ağrısı şikayeti ile başvuran 12 yaşındaki bir kız çocuğunu ele almaktadır. Fizik muayenede her iki dizde de patolojik bulgu saptanmamış olsa da radyografik değerlendirmede tibial tüberkülde düzensizlikler ve mikroavülsiyon bulguları tespit edilmiştir. Başlangıç tedavisi olarak aktivite kısıtlaması, non-steroid antiinflamatuvar ilaç (NSAİİ) kullanımı ve destekleyici bandaj uygulaması önerilmiştir. İki aylık takip sürecinde ağrıda belirgin azalma gözlenmiş, ancak yoğun egzersiz dönemlerinde ağrının tekrar ettiği bildirilmiştir. Osgood-Schlatter tedavisi genellikle konservatif olup, ağrı kontrolü ve kas esnekliğini artırmaya yönelik egzersizleri içermektedir. Hastalık çoğu zaman kendiliğinden düzelmekle birlikte, bazı olgularda semptomlar yetişkinliğe kadar sürebilmektedir. Bu olgu, birinci basamak sağlık hizmetlerinde OSH'nin erken tanısının ve konservatif tedavi yaklaşımlarının önemini vurgulamaktadır. Aile hekimleri, çocuk ve ergenlerde görülen diz ağrısının ayırıcı tanısında OSH'yi göz önünde bulundurmalı ve gerektiğinde hastaları multidisipliner değerlendirme için yönlendirmelidir.

Anahtar Kelimeler: Primary Health Care, Osgood- Schlatter Disease, General Practice

Konuralp Medical Journal
e-ISSN1309–3878
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INTRODUCTION

Osgood-Schlatter Disease (OSD), also known as patellar tendon apophysitis or tibial tubercle traction apophysitis, is recognized as a common benign cause of knee pain in children and adolescents during the growth period (1). The condition was first described independently by Robert B. Osgood and Carl Schlatter in 1903 (2). OSD predominantly occurs in children and adolescents who have not yet achieved skeletal maturity, developing due to repeated stress on the extensor mechanism (3). It commonly affects males aged 10-15 years and females aged 8-13 years and is more frequently seen in those participating in sports involving intensive knee movements, such as running and jumping, particularly in basketball, volleyball, gymnastics, and football (1).

The prevalence of OSD in the 12-15 age group is reported as 9.8%, with a rate of 11.4% in males and 8.3% in females (4). Symptoms are observed in both knees in 20-30% of cases (5). Some studies in the literature report a prevalence of 21% in adolescents participating in sports at the same age and 4.5% among non-athletes (2). Pathophysiologically, OSD is related to tensile stress on the tibial tubercle during the period when it serves as a secondary ossification center and attachment site for the patellar tendon. The strain arises when bone growth outpaces the capacity of the muscle-tendon unit to maintain flexibility (6). Repeated contractions of the quadriceps muscle and intensive knee extensions lead to microtrauma and partial avulsions at the apophyseal ossification center, resulting in swelling, tenderness, and pain (6).

Diagnosis of Osgood-Schlatter Disease is typically clinical, but radiographic examination is recommended in severe or atypical cases to rule out other pathologies such as fractures, infections, or tumors (7). The treatment approach varies according to symptoms. Although the disease is self-limiting, the recovery process can be prolonged and painful. Treatment options include ice application, nonsteroidal anti-inflammatory drugs (NSAIDs), and activity restriction based on the pain level. Stretching and strengthening exercises, particularly targeting the quadriceps and hamstring muscles to enhance lower extremity flexibility, are also recommended (1). Most cases resolve spontaneously with the fusion of the apophysis, but symptoms may persist into adulthood in approximately 10% of cases (7).

CASE PRESENTATION

A 12-year-old girl presented to the family medicine clinic with complaints of increasing pain, especially in her left knee. The patient had no history of trauma, but her family, concerned about the worsening pain, had previously taken her to the pediatric emergency department on several occasions, suspecting potential injury from falls or impacts. However, radiographs taken during these visits did not reveal any acute pathology. As the pain persisted, the family decided, in consultation with the patient, to temporarily discontinue her gymnastics training.

Physical examination revealed normal joint range of motion, with no swelling, redness, or warmth observed in either knee. The patient's vital signs were a normal, and she had no signs of fever or infection. Laboratory results indicated a WBC of 8,500 × 10^6/L and CRP of 0.2 mg/L, both within normal limits. Radiographic examination showed irregularities and micro avulsions in the tibial tuberosity of both knees, more pronounced on the left side (Figures 1 and 2). Based on the history and physical examination findings, the patient was diagnosed with Osgood-Schlatter Disease (OSD), with radiographic findings supporting the diagnosis.

Figure 1. Lateral View of the Left Knee

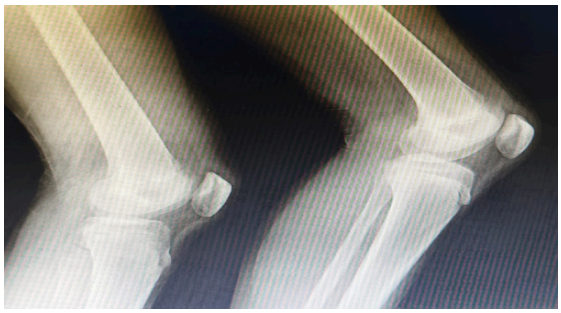

Figure 2. Lateral View of the Left and Right Knee

Treatment during the acute phase included activity restriction, application of a supportive knee bandage, and the administration of nonsteroidal anti-inflammatory drugs (NSAIDs) for pain control. At the two-month follow-up, a significant reduction in pain was reported, although pain recurred following intense exercise. The patient was advised to avoid high-impact exercises and limit intensive physical activities during the growth period, and the family received comprehensive guidance on managing the condition.

DISCUSSION

Osgood-Schlatter Disease is a common cause of knee pain in physically active children and adolescents, particularly those involved in sports, with risk factors including rapid growth, intensive physical activity, and poor muscle flexibility (8). In this case, the absence of trauma, the patient's

growth phase, and her participation in a sport that involves substantial physical effort, such as gymnastics, strengthened the diagnosis.

Although Osgood-Schlatter Disease is more common in boys and usually presents at older ages in males, the early presentation in this female patient could be attributed to the earlier maturation of the tibial apophysis in girls (5).

While the diagnosis of Osgood-Schlatter Disease is mainly clinical, malignancy, infection, and other inflammatory pathologies must be ruled out in the differential diagnosis (7). For instance, conditions such as septic arthritis, osteochondritis dissecans, patellar tendinitis, and meniscus injuries are potential causes of knee pain and should be evaluated (9). In this case, the absence of systemic symptoms and laboratory results suggestive of infection supported the diagnosis of Osgood-Schlatter Disease. Additionally, the irregularity and micro avulsion seen in the radiographs of the tibial tuberosity reinforced the diagnosis.

Studies indicate that the prevalence of Osgood-Schlatter Disease is higher among athletes than in the general population (1). The patient's involvement in gymnastics, a sport that involves repeated knee extensions, likely contributed to the condition. Knee pain exacerbated by exercise is a primary symptom of the disease, aligning with the patient's complaints (10). However, it is worth noting that some cases are entirely asymptomatic and are diagnosed incidentally.

Conservative treatment is the mainstay in managing Osgood-Schlatter Disease. Activity restriction, NSAID use, and exercises to enhance muscle flexibility, particularly stretching and strengthening exercises for the quadriceps and hamstring muscles, are typically sufficient (11). In this case, activity restriction and NSAID treatment were initiated, and at the two-month follow-up, symptoms had significantly decreased, although pain recurred following intense exercise. This finding suggests that the healing process may extend over several years, and repetitive physical activities can trigger symptoms.

Osgood-Schlatter Disease usually follows a self-limited and benign course. However, surgical intervention may rarely be required in treatment-resistant cases (12). Although surgical treatment has been reported to yield positive results in the literature, conservative treatment led to significant improvement in this case. Through regular follow-ups and appropriate treatment approaches, symptom control was achieved, and the patient was advised to avoid intense physical activities during the growth period.

CONCLUSION

Osgood-Schlatter Disease holds a significant place in primary healthcare as a common cause of knee pain in children and adolescents (10). Recurrent knee pain, particularly in young individuals involved in sports, is a frequent reason for pediatric and adolescent patients to visit family physicians (13). This case highlights the importance of early diagnosis and case management in primary healthcare settings; accurate diagnosis and appropriate referrals reduce the need for unnecessary imaging or advanced tests and allow patients to promptly begin treatment.

Family physicians are well-positioned to quickly differentiate between other pathologies that may cause pain in children and adolescents and to provide conservative treatment options. This role underscores the importance of primary care and family medicine in monitoring the disease's natural course and referring patients for multidisciplinary evaluation when necessary.

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