



## **Bilateral Osgood-Schlatter Disease in an Adolescent Nigerian Male: A Case Report**

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### **Authors' contributions**

*This work was carried out in collaboration among all authors. Authors AE and FOA managed the case and wrote the first draft of the manuscript. Author ORA managed the literature searches. Author AJU edited and revised the manuscript. All authors read and approved the final manuscript.*

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**Case Report**

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### **ABSTRACT**

Osgood-Schlatter disease is a frequent but uncommon cause of knee pain in active adolescent children aged 10-15 years. The incidence is generally unknown. Affected children usually present with a history of pain below the patella at the insertion of the patellar tendon which is usually aggravated by sporting or other activity. Despite its frequent occurrence, late sequelae are rarely observed. We report a 13-year-old male adolescent who presented to the rheumatology clinic with a 1-year history of recurrent bilateral knee joint pain. There was no associated fever, swelling, or limitation of ambulation. The diagnosis was initially missed at first contact at the referring clinic. Plain radiograph of both knees revealed an irregularity of tibial tuberosity; patella tendon edema; osseous density anterior to the tuberosity which suggests Osgood-Schlatter disease. Clinicians need to have a high index of suspicion for prompt diagnosis of Osgood-Schlatter disease especially in adolescents with chronic knee pain.

**Keywords:** Adolescent; knee pain; Osgood-Schlatter disease.

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## 1. INTRODUCTION

Robert Bayley Osgood and Carl Schlatter first reported the disease independently in 1903 [1]. Osgood-Schlatter disease is a traction phenomenon that occurs following the repetitive contraction of the quadriceps muscles on the immature tibial tubercle via the patellar tendon [2,3]. It is prevalent in the physically active adolescents aged 10-15 years and associated with growth spurts[4]. Unilateral knee involvement is predominant, however, about a third of cases are bilateral [4]. It can cause a loss of time from athletics, and it's a rare cause of permanent impairment or disability [2,3]. Pain of gradual onset and swelling of the knee joint are the usual presentation in affected children. Tenderness can also be elicited at the tibial tuberosity, commonly aggravated by physical activities that involve resistance against the bent knee and relieved by rest [4]. It is generally benign and self-limiting, with 90% of patients treated with conservative care attain a complete resolution of symptoms a year after the onset of symptoms [4].

## 2. CASE REPORT

A 13-year-old male student who was referred to the Rheumatology Clinic of Irrua Specialist Teaching Hospital, Irrua, with 1-year history recurrent bilateral knee pain, with the index episode starting 3 days earlier. Episodes of pain

were brief and exacerbated during strenuous activities like running and relieved at rest. He is noted to be actively involved in sporting activity in school, mainly football. There was no obvious history of trauma, fever, weight loss, joint swelling, or limitation of ambulation. He initially presented to the referring clinic with similar complaints without a definitive diagnosis.

Examination revealed a calm male in no obvious painful distress. There was localised swelling and tenderness of both knees especially at the tibial tubercles with no effusion or overlying erythema. There was no limitation of movement around the knee joints. A tentative diagnosis of Osgood-Schlatter's disease was made. The initial laboratory workup was normal. Plain radiographs of both knees revealed an irregularity of the tibial tuberosity with adjacent soft tissue calcification. There was also an ongoing soft tissue swelling (Fig. 1). These findings confirmed Osgood-Schlatter disease as the diagnosis.

The patient was reassured and advised on rest, use of cold compress, and avoidance of sporting activity temporarily. He was also placed on oral nonsteroidal anti-inflammatory drugs. At follow up 4 weeks later, the patient reported less pain and reported resolution of the knee pain and localised swelling at 8 weeks. Further follow up could not be done as the patient never presented again.



**Fig. 1. An image showing irregularity and separation of the apophysis from the tibial tuberosity and soft tissue calcification (arrows)**

### 3. DISCUSSION

Osgood-Schlatter disease is a benign and self-limiting condition that occurs in persons involved in sports that require running and jumping, gymnastics, and figure skating. It is usually resolving by the time the patient is aged 18 years when the tibial tubercle apophysis ossifies. In approximately 10% of patients, however, the symptoms continue unabated into adulthood despite all conservative measures [4]. It occurs more frequently in males with a male to female ratio of 3:1 and knee pain is bilateral in 25-50% of cases [2,5]. It is common in adolescents in association with a high level of activity during a period of rapid growth [4,6].

Although the incidence of Osgood-Schlatter disease is unknown, some authors have reported an incidence of 13% in a Finnish study [7]. The exact nature of the lesion remains controversial but hypotheses include microfractures in the tibial apophysis due to patellar tendon traction [8].

The age of occurrence is between 13 – 14 years in boys and 10 – 11 years in girls [2]. The index patient was a male adolescent, aged 13, and presented with bilateral knee pain that is reproducible on squatting or running, with pain subsiding with rest. This is consistent with the previously reported observation [9–11]. About 50% of patients give a history of precipitating trauma. The examination may reveal proximal tibial swelling and tenderness, which is seen in this reported case.

The diagnosis of Osgood-Schlatter disease is largely clinical. However plain radiograph is helpful to rule out other etiologies such as acute tibial apophyseal fracture, neoplasm, and infection. Plain radiographs show irregularity of apophysis with separation from the tibial tuberosity in the early stages of Osgood-Schlatter disease and fragmentation in the later stages [4].

Conservative measures result in an excellent outcome in 90% of cases [4]. Treatment consist of rest, restraint from the pain-producing activity for a short period, application of ice, anti-inflammatory for pain relief, or local inflammation [12]. The use of knee pads/braces, infrapatellar strap during activity, and application of plaster cast are of benefit [12]. At the closure of the tibial growth plate, patients are expected to have

complete recovery [1] Surgical treatment is rarely indicated, however with mixed results [13,14]. Patients who suffer recurrent symptoms into adulthood may benefit from surgical intervention [15].

### 4. CONCLUSION

Osgood-Schlatter disease albeit an uncommon condition remains a frequent cause of chronic knee pain in active adolescents. Clinicians should have a high index of suspicion for prompt diagnosis and hence should be considered in any adolescents with chronic knee pain.

### CONSENT

As per international standard, informed consent was obtained for publication of this report.

### ETHICAL APPROVAL

As per international standard or university standard written ethical approval has been collected and preserved by the author(s).

### COMPETING INTERESTS

Authors have declared that no competing interests exist.

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