

Osgood Schlatter Disease: Study of 2 Observations in Conakry, Guinea

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Abstract

Introduction: OSD is a growth osteochondrosis affecting the apophyseal cartilage of the anterior tibial tuberosity of the knee, 20 to 30% of young growing athletes suffer from this pathology, described by Osgood and Schlatter in 1903. **Objective:** To report 2 observations and review the literature. **Observation 1:** This was a 14-year-old Guinean teenager, Halpoular, living in Conakry, a right-handed footballer who presented with a painful swelling of the right knee that looked mechanical, whose father had HLA B27 positive ankylosing spondylitis. X-ray of the right knee showed fragmentation of the anterior tibial tuberosities, and ossicle with edema of the patellar tendons at stage 4 according to Ehrenbord and Lagergren (1961). Thus, the disease of OSD is retained, He received 120 mg of diclofenac, 20 mg omeprazole for 1 month and the cessation of sports activity, the evolution was favorably marked by the regression of pain. **Observation 2:** A 16-year-old girl, initials M.L.T, Guinean, residing in Coyah (Republic of Guinea), a handball player, consulted for intense pain (VAS: 8/10) in her knees after a violent shock received when she hit the post. The physical examination found a painful, soft swelling at the anterior tibial tuberosity of the right knee, the rest of the examination was normal. The X-ray of the right knee shows fragmentation of the anterior tibial tuberosity, and ossicle with edema of the patellar tendon at stage 4 according to Ehrenbord and Lagergren 1961, thus the OSD disease is retained, the treatment instituted was 120 mg of diclofenac, the cessation of sports activity which gives a good evolution (EVA at 2/10). **Conclusion:** OSD is a growth osteochondrosis affecting the apophyseal cartilage of the anterior tibial tuberosity of the knee in young growing athletes, resolving at rest.

Keywords

Osgood Shlatter Disease, Young Athlete

1. Introduction

Osgood and Schlatter disease (OSD) is a growth osteochondrosis primarily affecting the apophyseal cartilage of the anterior tibial tuberosity (ATT) in the knee. It was first described by Osgood in 1903 and six months later by Schlatter [1]. This disease mainly affects young athletes during growth. It affects 10% of children and adolescents [2]. Twenty to thirty percent of young athletes suffer from this pathology; in our department, the cases are less frequent, so we report two (2) observations with a review of the literature.

2. Observations

Observations 1:

This was an adolescent with the initials C.H.D, 14 years old, Guinean, Halpoular, living in Conakry, a right-handed footballer in training at a soccer academy, admitted to the rheumatology department for oligoarthralgia involving the right knee and left ankle of progressive onset, mechanical in appearance, evolving for 19 months, whose father has HLA B27 positive ankylosing spondylitis. Physical examination revealed a bony swelling of the anterior tibial tuberosity (**Figure 1**), without any skin changes, with a firm consistency, painful (VAS = 6/10) on pressure, fixed in the deep plane and mobile in the superficial plane.

The radiograph of the right knee showed fragmentation of the anterior tibial tuberosity and ossicle with edema of the patellar tendon (**Figure 2**) at stage 4 of the Ehrenbord and Lagergren 1961 Classification of OSD. Thus, anterior tibial osteochondrosis was retained because of these clinical and radiological signs. The treatment instituted was oral ibuprofen 400 mg three times a day for 4 weeks, diclofenac gel to rub the knee, 20mg of omeprazole per day and the cessation of physical and sports activity. The evolution was favorably marked by the regression of pain (VAS = 1/10).

Observation 2:

This was a 16-year-old girl, initials MLT, Guinean, residing in Grand Conakry (Coyah), a handball player who consulted for intense pain (VAS 8/10) in her knees after a violent shock received while hitting the post. The physical examination found a painful, soft swelling at the anterior tibial tuberosity of the right knee, the rest of the physical examination was normal.

The profile radiograph of the right knee found a fragmentation of the tibial tuberosity with separated ossicle (**Figure 3**) at stage 4 of the classification of OSD according to Ehrenbord and Lagergren 1961 (**Table 1**) which allowed us to make the diagnosis of Anterior Tibial Osteochondrosis (OSD).

The treatment was based on oral ibuprofen 400 mg three times a day for three



Figure 1. Painful bony swelling of the anterior tibial tuberosities of the left knee in a 14-year-old adolescent athlete.



Figure 2. X-ray of the left knee of the 14-year-old adolescent showing fragmentation of the anterior tibial tuberosity with ossicle and edema of the patellar tendons in stage 4 of the Ehrenbord and Lagergren (1961) OSD Classification in the same adolescent.



Figure 3. X-ray of the right knee of the 16-year-old handball player showing fragmentation of the anterior tibial tuberosity with ossicle and edema of the patellar tendons at stage 4 of the Ehrenbord and Lagergren (1961) OSD Classification in the same adolescent.

Table 1. Classification of Osgood-Schlatter disease according to Ehrenberg and Lagergren [17]:

Stage 1	Normal radiographs
Stage 2	Minor deformities of the anterior tibial tuberosity
Stage 3	Prominent tibial tuberosity
Stage 4	Tibial tuberosity with separated ossicle

weeks, diclofenac gel to rub the knee and the cessation of physical and sports activity which gave a good clinical evolution (VAS 2/10).

3. Discussion

Our observations are those of an Osgood and Schlatter disease which is of epidemiological, diagnostic, prognostic and therapeutic interest.

OSD is a growth osteochondrosis mainly affecting the apophyseal cartilage of the anterior tibial tuberosity in the knee [1].

It affects 10% of children between 7 and 21 years of age and adolescents, mainly 20 to 30% of young growing athletes, and the involvement is uni or bilateral [2]. The knee is the most commonly affected joint with 54% of injuries [3]. According to the study by Lucena and colleagues, the prevalence of OSD is 9.8% in adolescents [4].

In Europe, it affects about 20% of adolescent athletes in Finland [5], 20% - 30%

in Switzerland [5], only 1 of 168 children presented the disease in Greece [6] [7], nearly 20% of athletic children and 5% - 10% non-sportsmen in France [8].

In Latin America, in Brazil, its prevalence is 9.8% according to Lucena and colleagues [4]. In Asia, in Singapore, it affects girls around 11.5 years and boys around 12.7 years on average [9].

In Africa, 10 cases were collected in Morocco by Malak BOUKHZAR [10], 24 observations in Burkina Faso by A. WANDAOGO and colleagues [11], 2 observations commented on in Cameroon by Marcelin N. NGOWE [12].

Our observations concern adolescents aged 14 and 16 years respectively, which is consistent with the literature according to which the pathology affects boys between the ages of 10 and 15 years and girls between the ages of 8 and 13 years, this being explained by early bone maturation in girls [13]. Our two adolescent athletes presented knee pain during their physical activities, this symptomatology is by the data of the literature according to which, the diagnosis is mainly clinical and is based on localized pain at the level of the TTA, triggered by the physical activity, and which can persist at rest. They are reproduced on palpation of the TTA and when resistance is exerted to knee extension [14].

X-rays of the knee are not essential, but are necessary in case of doubt and reveal fragmentation of the bony core with densification and irregularity of the bony boundaries [15].

Those of our adolescents also showed damage to the tibial tuberosities with separated ossicles at stage 4 of the Ehrenberg and Lagergren classification of Osgood-Schlatter disease.

The current literature shows that it is fundamental to carry out a complete assessment of possible biomechanical disorders to be able to carry out an adapted treatment [2].

Our adolescents were subjected to non-steroidal anti-inflammatory drugs (NSAIDs) and physical rest, which is by the literature according to which the keyword for this disease is rest associated with the taking of analgesics and anti-inflammatory drugs to decrease the painful component [16].

4. Conclusions

OSD is a growth osteochondrosis mainly affecting the apophyseal cartilage of the anterior tibial tuberosity in the knee. 20% to 30% of young growing athletes are interested, less diagnosed in our department.

The diagnosis is clinical based on pain in the anterior tibial tuberosity, assisted by X-rays in case of doubt.

Treatment is based on NSAIDs, analgesics, sports and physical rest, which improves the functional prognosis.

Always think of the diagnosis of OGD in front of any knee pain in young growing athletes.

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Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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