Scholars Journal of Medical Case Reports
Abbreviated Key Title: Sch J Med Case Rep
ISSN 2347-9507 (Print) | ISSN 2347-6559 (Online)
Journal homepage: https://saspublishers.com

OPEN ACCESS

Medical & Surgical

Osgood-Schlatter Disease: A Case Report of 27 Patients

Diaby, L. M[1*], Sanogo, A[1], Berthe, B. B[1], Ndiaye M[1], Cisse, M. S[1], Sangare, A. S[3], Niass, M[2], Sangare, S[1], Magassouba, S. dit S[1], Diallo, H. B[1], Bouare, I[1], Guindo, I. S[1], Kassogué, A[4], Camara, Y[1], Berthé, M[1], Guindo, I. K[1], Sanou, M[1], Ouologuem, M[1]

[1]Army Medical and Surgical Centre, Bamako, Mali
[2]Cheikh Anta Diop University, Dakar 10700, Senegal
[3]Mali Hospital, Bamako, Mali
[4]Gabriel Touré University Hospital, Bamako, Mali

DOI: 10.36347/sjmcr.2023.v11i06.064 | **Received:** 16.05.2023 | **Accepted:** 20.06.2023 | **Published:** 24.06.2023

***Corresponding author:** Diaby, L. M
Army Medical and Surgical Centre, Bamako, Mali

Abstract **Original Research Article**

Osgood-Schlatter disease is a painful inflammation of the bone and cartilage of the tibial tuberosity. It is caused by excessive stress on the leg. We conducted a retrospective descriptive cross-sectional study at the rheumatology unit of the Army Medical and Surgical Centre of Bamako. The study population consisted of patients followed at the rheumatology unit from January 2021 to 31 December 2022. Patients with a confirmed diagnosis of Osgood-Schlatter disease were included. During our study period, we enrolled 27 patients, 25 of whom were male (92.60%). The mean age of our patients was 13.5 + 2.4 years. All cases in our series were unilateral (100%) and 85.2% of our patients had practised sport. Painful manifestations of the anterior face of the knee were noted in all patients (100%) and were associated with swelling in 55.55% of cases. Soft tissue tumefaction constituted 92.5% of radiographic abnormalities. This is the most common osteoarticular disease in adolescent males, with a generally favourable outcome.

Keywords: Osgood-Schlatter, Medical and Surgical Centre, Army, Bamako.

INTRODUCTION

Osgood-Schlatter disease is a painful inflammation of the bone and cartilage of the tibial tuberosity. It is caused by excessive stress on the leg and was first described by OSGOOD, an Anglo-Saxon, and SCHALTTER, a German, in 1903 [1].

It appears between the ages of 10 and 15 and generally affects only one leg. The disease is generally more common in boys, but the gender gap is decreasing because more girls are participating in sports programmes. However, there are many theories about this disease. None of them explains its origin with certitude. The hypothesis most often put forward is that the femur grows "too fast and unbalanced" during adolescence, compared with the muscles and tendons of the thigh.

Histological observations show micro-fractures of the tendon insertion zone during the enchondral phase of ossification of the tibial tuberosity. These micro-fractures result in a series of tears in the cartilage, followed by cicatrization. If this tissue repair fails, an ossicle separates from the tuberosity and cicatricial tissue is inserted between this separated ossicle and the tuberosity [2].

Diagnosis is based on clinical examination and sometimes radiographs.. Typical symptoms include mechanical pain aggravated by activity and reduced by rest, swelling and tenderness over the tibial tuberosity at the front of the knee, just below the patella. An X-ray of the knee is not essential for diagnosing this condition. However, if it is carried out, fragmentation of the tibial tuberosity and oedema of the soft tissues can be seen. X-rays carried out in late adolescence can be used to classify the final stage of patients into four categories [2].

Treatment involves stopping activities and resting. During acute crises, this is essential, as the pain increases with physical activity. The main difficulty in treatment is that some adolescents do not accept the temporary cessation of sport. Painkillers based on paracetamol or non-steroidal anti-inflammatories are useful and can be prescribed to calm the pain. Physiotherapy is not essential. It will be adapted if there are clinically observed muscle retractions.

Surgery is only appropriate in painful cases with a very large protrusion and a large ossicle [2].

The aim of our study was to determine the frequency of this pathology in the rheumatology unit of the Army Medical and Surgical Centre in Bamako.

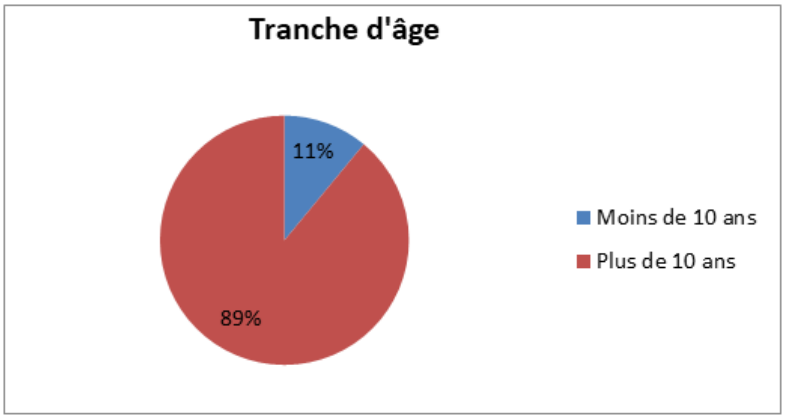
PATIENTS AND METHOD

Study context: This study was carried out in the rheumatology unit of the Army Medical and Surgical Centre in Bamako. It was a descriptive cross-sectional study with retrospective data collection, conducted on patients followed from January 2021 to December 2022. The study population consisted of patients in the rheumatology unit. All patients seen for pain and/or swelling of the anterior aspect of the knee with a confirmed diagnosis of Osgood's disease were included. Patients with incomplete records and those with another diagnosis were excluded.

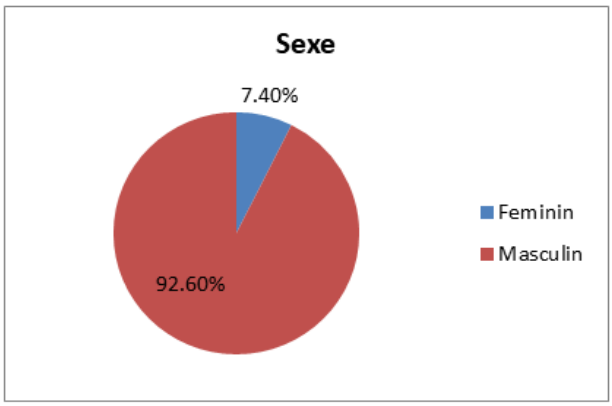
Ethical aspects: The collection and use of patients' sociodemographic and clinical data were carried out in compliance with the rules of medical ethics regarding patient anonymity and the confidentiality of their data.

RESULTS

We included 27 cases of Osgood's disease among 298 patients (adults and children) seen in consultation during the study period, representing a hospital frequency of 9.06%. The age of our patients varied between 9 and 16 years with a mean age of 13.5 years + 2.4 years. The over-10 age group was the most common, with 89% of cases, and males were in the majority in 92.60% of cases.



Graph 1: Distribution according to age group: over 10 years represented 89% of cases



Graph 2: Distribution according sex: Sex male represented 92.60%

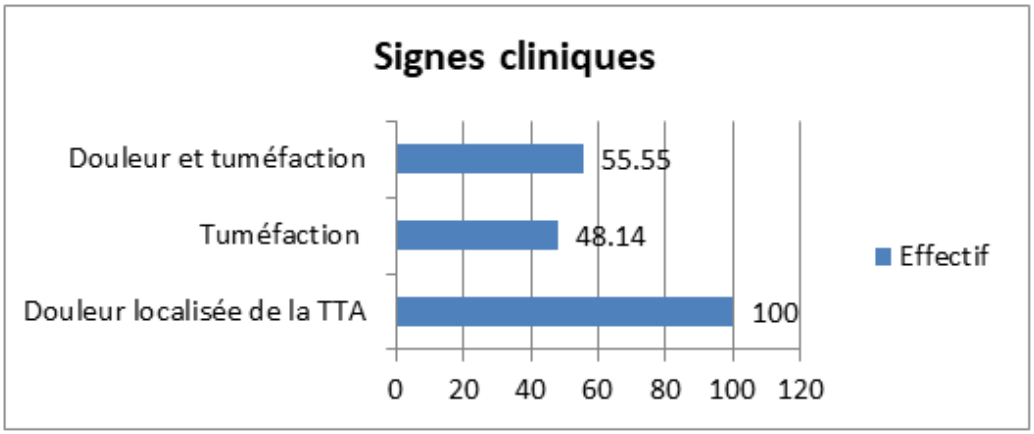
All cases were unilateral (100%) in our series, and 85.2% of our patients had practised sport.

Table 1: Distribution according to the practice of sport

Sport activity	Number	Percentage (%)
yes	23	85,2
no	4	14,8
Total	27	100 %

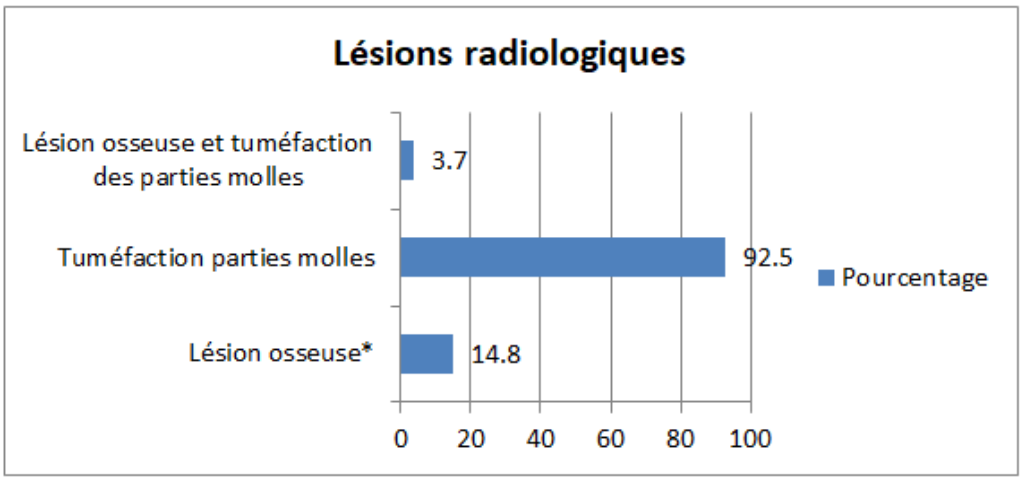
The practice of a sports activity was noted in 85.2% of cases

Clinically, painful manifestations of the anterior face of the knee were noted in all our patients (100%) and they were associated with swelling in 55.55% of cases. It was noted that 48.14% of our patients presented only swelling of the anterior part of the knee.



Graph 3: Distribution according to signs on examination: Localized pain in the anterior tibial tuberosity were noted in all patients

Radiologically, soft tissue swelling was the most common radiographic abnormality, with 92.5% of cases. In addition, 4 cases (14.8%) of bone lesions were noted.



Graph 4: Distribution according to radiological abnormalities: Soft tissue swelling accounted for 92.5% of abnormalities

DISCUSSION

The study's limitations: this was a retrospective study, which caused many files to be excluded because of missing data. The small number of patients also constituted a limitation of our study. Lastly, the study covered all children and adult patients coming for consultation.

The hospital frequency of Osgood-Schlatter disease was 9.06% in our study during the data collection period. The mean age of our patients was 13.5 +2.4 years, with extremes ranging from 9 to 16 years. The majority of our patients were male (92.60%).

Our results are similar to those of Vaishya *et al.*, who found that in boys the disease occurs on average between 12 and 15 years of age and between 8 and 12 years of age in girls, with a prevalence of 11.4% in boys, 8.3% in girl [3]; and of Dembélé B [1] who also found in his series that boys were the most represented with 75% of cases and that the 14-18 age group accounted for the majority in 87.5% of cases. The predominance of males is easily explained by the fact that boys are more active in sport than girls and at this age ossification is in the process of formation.

In our series, all our patients (100%) had unilateral involvement, and 85.2% of our patients were involved in sports. Our results differ from those reported by Dembélé B *et al.*, who found that in 37.5% of cases the lesion was bilateral [1]. Wandaogo *et al.*, also found that the lesion was bilateral in 75% of cases [9].

Sporting activity is known to be the causative factor in this disease, due to repeated and sub-maximal tensioning of the patellar ligament on an immature tibial tuberosity, with microavulsions, inflammation and reactive repair [9]. The pain is intermittent, particularly aggravated by physical activities involving jumping, squatting or kneeling [9].

Clinically, localised pain of the anterior tibial tuberosity was noted in all our patients (100%) and swelling was found in 48.14% of patients.

Wandaogo A *et al*., [9] reported that in their series of 24 patients, the right knee was painful in 20 patients compared with 22 for the left knee. Eighteen patients had a bilateral form; 11 of them felt that the intensity of the pain was the same in both knees. All the painful knees showed an increase in volume of the anterior tibial tuberosity; in 3 cases, however, the swelling was bilateral although the pain was unilateral.

Radiologically, all our patients had benefited from a knee X-ray. Soft-tissue swelling was the most common radiographic abnormality, occurring in 92.5% of cases. In addition, 4 cases (14.8%) of bone lesions were noted, such as irregular contours or osteocondensation of the anterior tibial tuberosity. Dembélé B [1] noted that irregularity of the TTA contour was the most common sign (50%). Wandaogo A *et al*., [9] reported that radiologically, the patients in their study had an irregular appearance of the anterior tibial tuberosity bilaterally, and that only the painful knees also showed discrete swelling of the soft tissue around the tuberosity, and a free ossicle located on the deep surface of the distal part of the patellar ligament was noted in 4 cases.

Treatment mainly involved rest and the use of analgesics, which enabled us to modulate the pain in our patients. Wandaogo A *et al*., also treated their patients exclusively conservatively, with reduced physical activity or complete rest during the painful phase [9]. Surgery is only used in painful cases with a very large protrusion and a large ossicle. The results of this surgery are inconsistent. The majority of patients remain completely asymptomatic at the end of growth.

Patients underwent regular follow-up at one month, 3 months and 6 months, with a follow-up radiograph at 6 months. The clinical evolution was favourable after 6 months, with disappearance of the lesions on the follow-up X-ray.

CONCLUSION

In our study, Osgood-Schlatter disease is a benign condition, common in adolescent males. Treatment includes rest and analgesics. The long-term prognosis was excellent.

REFERENCES

1. Dembélé, B. (2009). Maladie d'Osgood-Schlatter dans le service de chirurgie orthopédique et de traumatologie du CHU Gabriel Touré: a propos de 8 cas. Thèse: Médecine. Bamako: FMOS, P86.
2. Vargas, B., Lutz, N., Dutoit, M., & Zambelli, P. Y. (2008). Maladie d'Osgood-Schtatter. *Revue médicale suisse*, *4*(172), 2060-2063.
3. Vaishya, R., Azizi, A. T., Agarwal, A. K., & Vijay, V. (2016). Apophysitis of the tibial tuberosity (Osgood-Schlatter disease): a review. *Cureus*, *8*(9), e780.
4. Danneberg, D. J. (2017). Successful Treatment of Osgood–Schlatter Disease with Autologous-Conditioned Plasma in Two Patients. *Joints*, *5*(03), 191-194.
5. Beaubois, Y., Dessus, F., & Boudenot, A. (2016). Maladie d'Osgood-Schlatter: de l'arrêt sportif vers la gestion des troubles biomécaniques. *Kinésithérapie, la Revue*, *16*(175), 2-6.
6. Corbi, F., Matas, S., Álvarez-Herms, J., Sitko, S., Baiget, E., Reverter-Masia, J., & López-Laval, I. (2022, May). Osgood-Schlatter Disease: Appearance, Diagnosis and Treatment: A Narrative Review. In *Healthcare* (Vol. 10, No. 6, p. 1011). MDPI.
7. Mun, F., & Hennrikus, W. L. (2021). Surgical treatment outcomes of unresolved osgood-schlatter disease in adolescent athletes. *Case reports in orthopedics*, *2021*, 1-5.
8. Poboży, T., Konarski, W., Piotrowska-Lis, K., Domańska, J., Poboży, K., & Kielar, M. (2022, October). Basic Differences and Most Common Findings in Ultrasound Examinations of Musculoskeletal System in Children: A Narrative Literature Review. In *Healthcare* (Vol. 10, No. 10, p. 2010). MDPI.
9. Wandaogo, A., Compaore, T., Traore, O., Tapsoba, T. L., & Ouiminga, R. M. (1999). La maladie d'Osgood Schlatter: A propos de 24 cas observés au centre hospitalier national Yalgado Oueadraogo de Ouagadougou. *Médecine d'Afrique Noire*, *46*(3), 166-169.
10. Duperron, L., Haquin, A., Berthiller, J., Chotel, F., Pialat, J. B., & Luciani, J. F. (2016). Étude d'une cohorte de 30 patients immobilisés avec une résine cruro-malléolaire pour une maladie d'Osgood-Schlatter. *Science & Sports*, *31*(6), 323-335.