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Sever's Disease in Mandiana (North-East Guinea): A Case Report and Review of the Literature

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Abstract **Case Report**

Introduction: Sever's disease or calcaneal osteochondrosis of the posterior apophysis affects adolescent athletes between 8 and 15 years of age, boys are more affected in about 60% of cases and the involvement is uni or bilateral, described in 1912 by the surgeon James Warren Sever. ***Objective:*** To present the first case of Sever's disease in Mandiana, supported by a review of the literature. ***Clinical Case:*** This was an 11-year-old adolescent, living in Mandiana, a soccer player (right lateral), playing with his right foot, who consulted for a right posteroinferior talalgia, progressive, of mechanical appearance, triggered by walking and physical activity, calmed by rest or by taking non-steroidal anti-inflammatory drugs (NSAID). No notion of taking fluoroquinolone-based medication, no signs suggestive of an infectious focus, particularly auto-rhino-laryngology (ENT) and dental, or tumors. The painful swelling (VAS 9/10) on palpation of the medial and lateral heel cup with degree 2 flat foot, the densification and fragmentation of the posterior calcaneal process on the right foot profile radiograph allowed the diagnosis of Sever's disease. The treatment was based on oral ibuprofen 400 mg three times a day for three weeks, diclofenac gel to rub the ankle, and the cessation of physical and sports activity for three months which gave a favorable outcome by the regression of pain (VAS at 1/10) and the normal resumption of walking. ***Conclusion:*** Sever's disease is a common condition in growing children, its diagnosis is clinical, radiology is used for differential diagnosis, and rest is essential in its management.

Keywords: Sever's disease, Young athlete, Mandiana (South-East Guinea).

INTRODUCTION

Sever's disease is a growth osteochondrosis [1], localized at the calcaneus and affecting adolescent athletes between 8 and 15 years of age [2]. Boys are more affected in about 60% of cases, the involvement is uni or bilateral [3]. Described in 1912 by the surgeon James Warren Sever [4]. This is the first case diagnosed in this level 3 health facility and will be supported by the literature review.

CLINICAL CASE

This was an 11-year-old adolescent with the initials S A B, residing in Mandiana, a soccer player (right foot), who consulted for right posteroinferior talalgia, progressive, mechanical in appearance, triggered by walking and physical activity, which was soothed by rest or non-steroidal anti-inflammatory drugs (NSAID). No notion of taking fluoroquinolone-based medication, no signs suggestive of an infectious focus, particularly auto-rhino-laryngology (ENT) and dental, nor tumors.

The clinical examination revealed a limp when walking, and a painful swelling with a visual analog scale (VAS) of 9/10 on palpation of the internal and external heel cup with a degree 2 flat foot.

Imaging revealed densification and fragmentation of the posterior calcaneal process (Figure 1). Given this clinical symptomatology associated with radiological signs, the diagnosis of Sever's disease

(calcaneal osteochondrosis of the posterior process) was made, The treatment was based on oral ibuprofen 400 mg three times a day for three weeks, diclofenac gel to rub the ankle, and the cessation of physical and sports activities for three months, which resulted in a favorable outcome with regression of pain (VAS 1/10) and normal walking.

Figure 1: Profile X-ray of the right foot in an 11-year-old athletic adolescent showing densification and fragmentation of the posterior calcaneal process at the prefectural hospital of Mandiana (South-East Guinea)

DISCUSSION AND COMMENTS

Our observation is of Sever's disease (calcaneal osteochondrosis of the posterior process) which is of epidemiological, diagnostic, prognostic and therapeutic interest.

It's the most common cause of posterior heel pain in growing children and adolescents [5]. It is caused by repetitive strain injury resulting from increased traction impact on the calcaneal process by the calf muscles through the Achilles tendon [6-8]. The incidence of this condition ranges from 2 to 16% of musculoskeletal pathologies in athletic children [9]. It is the most common disease in adolescents after Osgood-Schlatter disease [10]. Osgood-Schlatter disease is a growth osteochondrosis of the knee that affects 9.8% of adolescents [11]. Athletes aged 8 to 15 years are the most affected in about 60% of cases [2, 3], which is consistent with our case (11-year-old adolescent).

He presented with a painful right posteroinferior swelling at the heel, with a limp when walking, which is consistent with the data in the literature, according to which a certain number of criteria must be present, in particular epidemiological (its occurrence in adolescents aged between 8 and 15 years) [12] and clinical (the strong pain felt on palpation of the insertion of the Achilles tendon, at the posterior edge of the calcaneus) [13].

Radiography is neither a diagnostic nor an evolutionary criterion of Sever's disease, it is involved in the differential diagnosis by excluding other pathologies such as the tarsal coalition, stress fracture, tumor, bone cyst or infection [14,15]. This is a comfort to our case (adolescent) which showed only densification and fragmentation of the posterior apophysis of the calcaneus.

The main objective of the treatment of Sever's disease (calcaneal osteochondrosis of the posterior process) is pain relief. In most cases, rest relieves the pain. Therefore, limit strenuous activities, especially jumping and running.

Our adolescent received oral ibuprofen 400 mg, diclofenac gel to rub the ankle, cessation of physical activity and sports which is consistent with the literature that treatment with NSAIDs is recommended, followed by a stretching program that focuses on the calf muscles and helps to improve the dorsiflexion of the ankle joint [5,16]. Orthotics such as heel lifts, heel cups, and heel pads reduce axial loads and tensile forces on the heel apophysis leading to a decrease in symptoms [17].

The evolution is generally favorable with sports rest combined with symptomatic treatment. The major problem lies in the compliance of this rest and treatment, hence the possibility of relapse with an undisciplined patient. In this context, it is important to bear in mind the exceptional but real possibility of avulsion fracture of the calcaneal process in cases of neglected Sever's disease [18]. Sports activity has been identified as a major risk factor for this condition [19, 20].

CONCLUSION

Sever's disease is a growth osteochondrosis most common in adolescents in sports and physical activities.

Its diagnosis is clinical, its management is based on NSAIDs and rest which improve the functional prognosis.

Think of the Sever disease before any talalgia in growing adolescents to correct the diagnostic erratic which is a factor of bad prognosis.

Sincere Thanks: to all those who participated in the care of this adolescent in one way or another with a special mention to the prefectural health directorate and all the staff of the prefectural hospital of Mandiana (South-East Guinea).

DECLARATION OF INTEREST

No interest.

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