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SEVER'S DISEASE INCIDENTALLY DIAGNOSED BY MAGNETIC RESONANCE IMAGING IN A PATIENT WITH ANKLE SPRAIN: CASE REPORT AND REVIEW OF IMAGING FINDINGS

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ABSTRACT

Sever's Disease is a self-limiting apophysitis of the calcaneus, common in physically active children and adolescents. This article presents the case of an 11-year-old female patient who underwent magnetic resonance imaging (MRI) for an ankle sprain, in which the findings were compatible with Sever's disease. We discuss the typical MRI findings and their relevance in the differential diagnosis of pain in the infant hindfoot.

Keywords: Sever's disease. Apophysitis of the calcaneus. Sprain. Mri. Paediatrics.

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INTRODUCTION

Sever's disease, or apophysitis of the calcaneus, is one of the most common causes of heel pain in children and adolescents in a phase of accelerated growth, especially between 8 and 15 years old. It most frequently affects physically active individuals, resulting from repeated microtraumas on the growth plate of the posterior apophysis of the calcaneus, usually related to the traction exerted by the calcaneus tendon (Achilles).

Although the diagnosis is predominantly clinical, magnetic resonance imaging (MRI) can play a fundamental role in atypical cases, in which there is diagnostic doubt or the need to exclude other causes of hindfoot pain. In addition, MRI can reveal early findings, even before radiographic changes.

CASE REPORT

An 11-year-old female patient with no relevant morbid history was referred for magnetic resonance imaging of the right ankle after a sprain during a school sports activity. The patient reported pain in the lateral region of the ankle, with mild claudication. There was no previous report of heel pain.

MRI showed mild ligament injury of the anterior talofibular ligament and, incidentally, alterations in the posterior apophysis of the calcaneus, suggestive of Sever's disease. The findings included:

- Edema of the bone marrow of the posterior apophysis of the calcaneus (hypersignal on T2-weighted sequences with fat suppression);
- Mild edema of adjacent soft tissues;
- Open phase, symmetrical and without significant irregularities;
- There is an absence of fractures or signs of infection.

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Figure 1 – Sagittal PE-weighted section with fat suppression, showing hypersignal in the posterior apophysis of the calcaneus (bone edema).

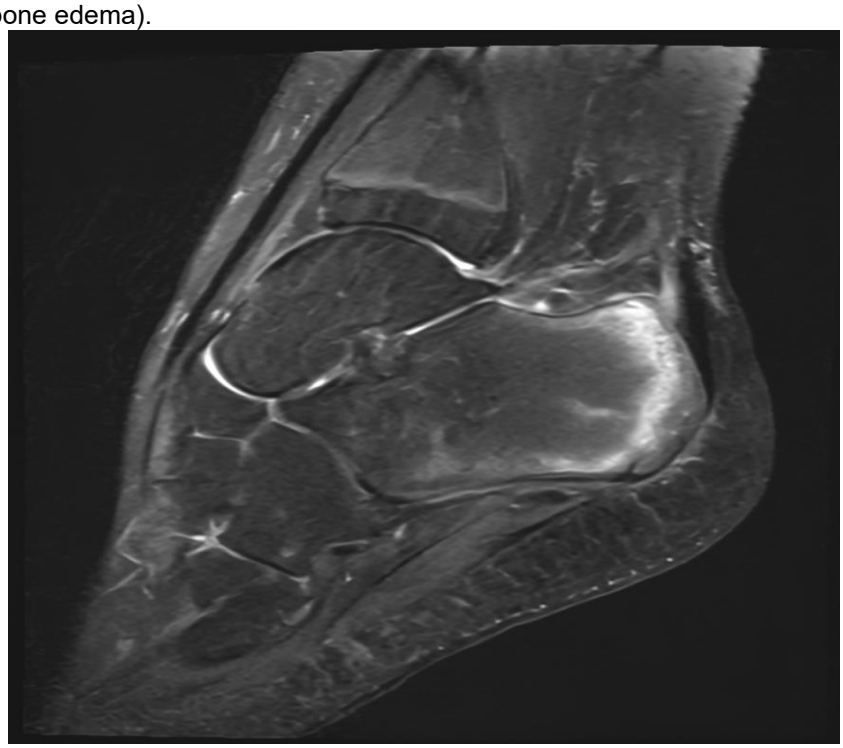
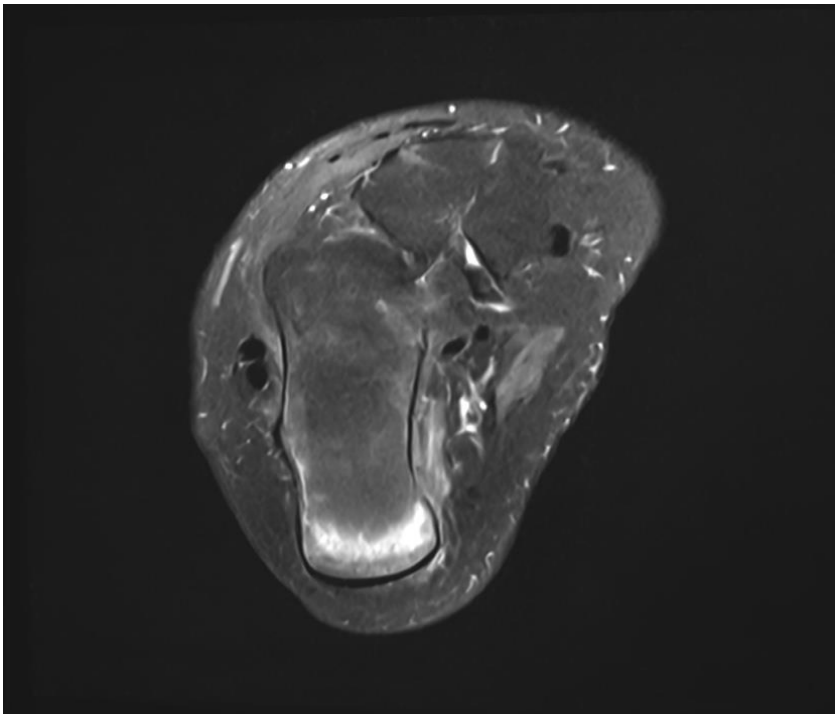


Figure 2 – Axial DP FAT SAT section showing posterior apophysis edema and discrete alterations in adjacent soft tissues.



Revista ARACÊ
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Figure 3 – T1-weighted sagittal slice showing open, symmetrical physis with no significant irregularities

The patient was advised about the benign and self-limited nature of the condition, and a conservative approach was adopted with relative rest and outpatient clinical reassessment.

DISCUSSION

Sever's disease is a traction osteochondrosis caused by mechanical overload on the apophysis of the calcaneus in the secondary ossification phase. The pathophysiology involves repetitive traction exerted by the calcaneus tendon during intense physical activity.

The most frequent MRI findings, as described in the literature, include:

- Edema of the posterior apophyseal bone marrow (hypersignal on T2-weighted and STIR sequences);
- Edema of adjacent soft tissues;
- Preservation of physis (open growth cartilage);
- Possible sclerosis or apophyseal irregularity.

It is essential to correlate the findings with the clinical findings, as studies have shown that alterations such as mild edema may also be present in asymptomatic patients. The main differential diagnoses include:

- Avulsion fracture;

Revista ARACÊ
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- Osteomyelitis;
- Bone tumours (e.g., eosinophilic granuloma);
- Other osteochondrosis (e.g., Köhler's disease, Freiberg).

Treatment is conservative, with rest, change of shoes, physiotherapy, and, eventually, use of insoles. The evolution is usually favorable, with complete resolution in weeks or months.

FINAL CONSIDERATIONS

This case reinforces the importance of magnetic resonance imaging as a complementary tool in the diagnosis of bone changes in children, even though Sever's Disease is, in most cases, a clinically recognizable and self-limiting condition. Incidental detection in the context of trauma, as presented, illustrates the need to interpret the image in conjunction with the clinical history and physical examination.

Revista ARACÊ
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