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CASE REPORT

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Lateral cuneiform-navicular coalition – a rare coalition

Coalizão cuneiforme lateral-cuboide – uma coalizão rara

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Abstract

Introduction: *Tarsal coalitions represent abnormal bridging between tarsal bones and can be osseous, cartilaginous, or fibrous, developing secondary to failure of differentiation and segmentation of the primitive mesenchyme in the first stages of development, decreasing mobility and deforming the feet, when is congenital. When acquired it occurs due to inflammatory arthritis, infection, trauma, neoplasia and other causes.* ***Case report:*** *We report the case of a 37-year-old woman with a complaint a month ago, dismantling the importance of investigating the cause and the need for attention by the radiologist for the evaluation of tarsal coalitions since, a coalition, regardless of which bones involved, can lead to limiting symptoms.*

Keywords*: Tarsal bones, Tarsal coalition, Magnetic resonance imaging, Foot deformities*

Resumo

Introdução*: A coalizão tarsal representa uma comunicação anormal entre ossos do tarso e pode ser óssea, cartilaginosa ou fibrosa, se desenvolvendo de forma secundária a insuficiência da diferenciação e segmentação do mesênquima primitivo nas primeiras fases do desenvolvimento, diminuindo a mobilidade e deformando os pés, quando congênita. Quando adquirida ocorre devido à artrite inflamatória, infecção, trauma, neoplasia, entre outras causas.* ***Relato de Caso:*** *Relatamos o caso de uma mulher de 37 anos com queixa há um mês, desmontando a importância da investigação da causa e a necessidade de atenção por parte do radiologista para a avaliação das coalizões tarsais visto que, uma coalizão, independentemente de quais ossos envolvidos, pode levar a uma sintomatologia limitante.*

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Palavras chave*: Ossos do tarso, Coalizão tarsal, Imagem por ressonância magnética, Deformidades do pé*

Introduction

The tarsal coalition represents an abnormal communication between tarsal bones and can be bony, cartilaginous, or fibrous[1-2], developing secondarily to insufficiency of differentiation and segmentation of the primitive mesenchyme in the first stages of development, reducing mobility and deforming the feet, when congenital[1,3]. When acquired, it occurs due to inflammatory arthritis, infection, trauma, neoplasia, among other causes[1].

Tarsal coalition occurs in 1% of the population, but in 13% of corpses, speculating an underestimation in the population as examinations are only performed in case of symptoms[1-6]. The most common coalitions they are the calcaneal-navicular (53%) and talo-calcaneal (37%)[1]. We found only two reports of a coalition between the lateral cuneiform and the cuboid, an immobile joint, reported by Babu et al and Imai et al[1,6].

Clinically, coalitions can cause hindfoot pain, joint stiffness, decreased movement of the subtalar joint, valgus deformity, and ankle sprain[1]. Flatfoot can also occur with spasticity of the fibular muscles[1].

The diagnosis of the bone coalition can be performed, depending on the joint to be studied, by radiography[1]. Computed tomography and magnetic resonance (MRI) diagnose the bone coalition regardless of the affected joint, being diagnostic methods with greater sensitivity and accuracy than radiography[1]. MRI has the advantage of being more sensitive for detecting fluid, in addition to enabling the visualization of bone edema and cartilage-causing and fibrous coalitions[1].

Case report

A 37-year-old woman refers to pain in her left foot after a fall 01 month ago. She denies limitation of daily activities. Physical examination reports pain on palpation, without edema, and without limitation to passive and active dynamic assessment. She denies

previous surgeries and illnesses. MRI showed a bone coalition between the lateral cuneiform and cuboid bones (Figures 1 and 2). The patient was treated with non-steroidal anti-inflammatory drugs, with pain relief within a week.

Discussion

The two most common coalitions, calcaneal-navicular and talocalcaneal, present as foot pain in adolescence that can be aggravated by walking or any exercise[2].

Males are more likely to have tarsal coalitions, with a ratio of 4:1 to 12:5[3]. The symptomatology consists of progressive pain and stiffness with reduced mobility of the ankle and midfoot on physical examination.[2] Our case differs from the most common form of the coalition between the lateral cuneiform and cuboid bones, as it is a woman without any functional limitation, both in passive and active dynamic assessment.

It is constantly associated with symphalangism, clinodactyly, ball and socket ankle joint, and hallux

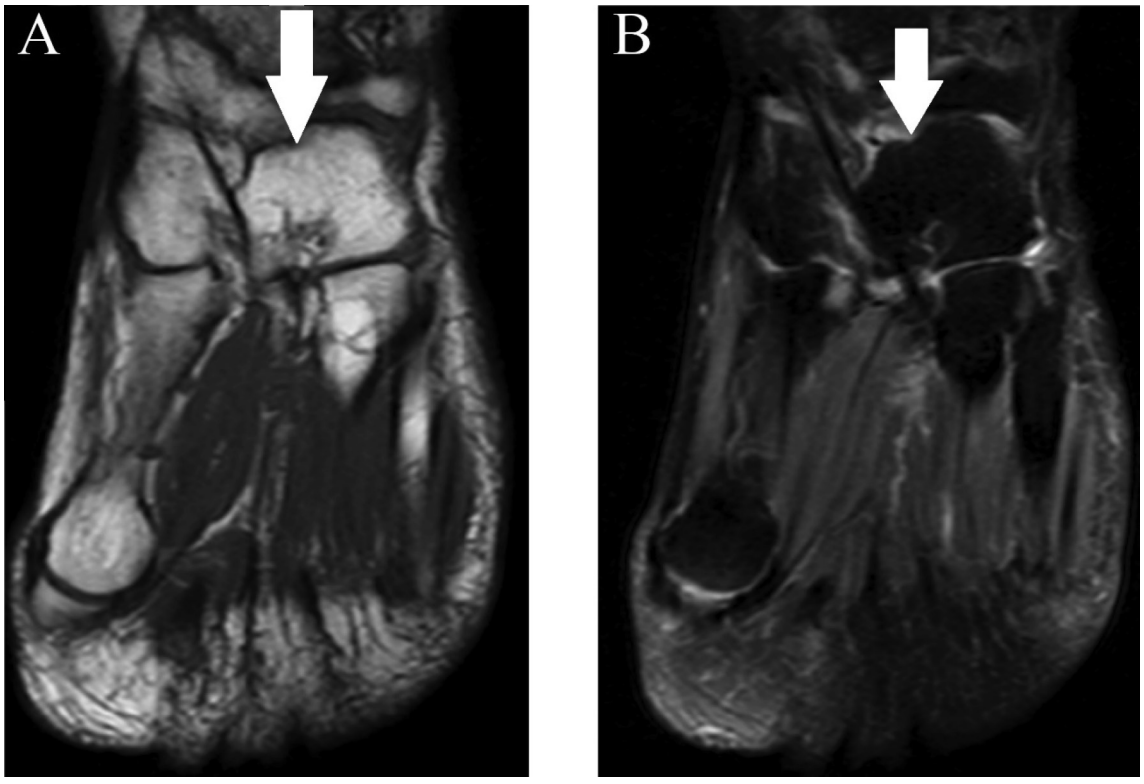

Figure 1 - MRI of the left foot in the axial section in the T1 sequence in A and T2 FAT SAT sequence in B demonstrating the lateral-cuboid cuneiform bone coalition (white arrow).

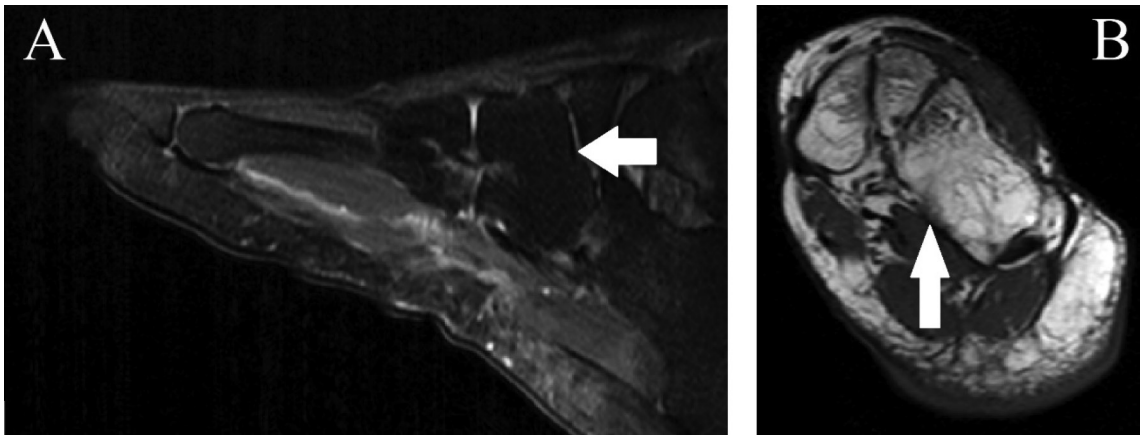

Figure 2 - In A, MRI in the sagittal section with T2 FAT SAT sequence, and the coronal section with T1-weighted-image in B showing the lateral-cuboid cuneiform bone coalition (white arrow).

shorter than the second toe, with a dominant hereditary pattern[3].

Treatment can be conservative or surgical, always with the aim of analgesia and improvement of mobility[1]. Symptomatic coalition can be treated with non-steroidal anti-inflammatory drugs, injection of steroids, and orthotics – when conservative treatment is recommended – or surgically with excision – in the failure of conservative treatment[2,6]. In the case described the patient presented pain, without functional limitation, and the conservative treatment was successfully performed with non-steroidal anti-inflammatory drugs.

Conclusion

The report we present demonstrates a case of a lateral cuneiform-cuboid coalition, which rarely causes symptoms.

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