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(CASE REPORT)

Scaphocunean tarsal coalition: Case report

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Abstract

Tarsal coalition is a developmental alteration that consists of the fusion of 2 or more bones of the middle or hindfoot, which can be congenital or acquired. It occurs in 5% of the population, the most common is the calcaneus-navicular, followed by the astragalus-calcaneum and the most uncommon is the scaphoid-cuneiform, which is described as "rare". To make this diagnosis, it is essential to perform imaging studies such as CT and/or MRI. In this article we present a case of scaphocunean tarsal bar of the synostosis type in an adolescent athlete patient who was treated non-surgically with satisfactory results and return to sports activity.

Keywords: Tarsal coalition; Diagnosis; Midfoot; Hindfoot

1. Introduction

Tarsal coalition consists of the fusion of 2 or more bones of the middle or rearfoot, which can be congenital or acquired. Among these, the most frequent are: navicular calcaneus and calcaneal astragalus, being the scapho-cuneus or navicular-cuneiform a rare and unusual form of presentation. This was described for the first time in 1979 in which it is catalogued as a "rare" condition.

Considering the above, the aim of this manuscript is to present an unusual case of scapho-cuneate tarsal coalition in a young adolescent in the city of Barranquilla - Colombia.

2. Case description

A 14-year-old male patient, athlete, with no pathological or traumatic history at the time of questioning, who comes with his mother to the specialized foot and ankle consultation. He manifests clinical symptoms of approximately 2 months of evolution consisting of pain in the inner side of the left foot. Sports activity (soccer) which he sometimes relates to the pain.

Physical examination revealed collapse of the medial longitudinal arch, pain on palpation of the scaphoid pole and pain on inversion of the foot. Therefore, an X-ray of the left foot was ordered, showing irregularity at the level of the scaphoid, and extension imaging studies were ordered (MRI, CT).

After two weeks the patient attended a consultation with control images, which showed medullary edema in the scaphoid and medial cuneiform bones, as well as scapho-cuneiform synostosis, the latter being the diagnosis of this patient. Management with NSAID, physical therapy and use of custom-made insoles and rest from sports activities was ordered. In the next control, improvement of the clinical picture was evidenced, so a gradual return to sports activity

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was indicated. Outpatient follow-up was performed, observing satisfactory evolution and performing sports activities without problems.

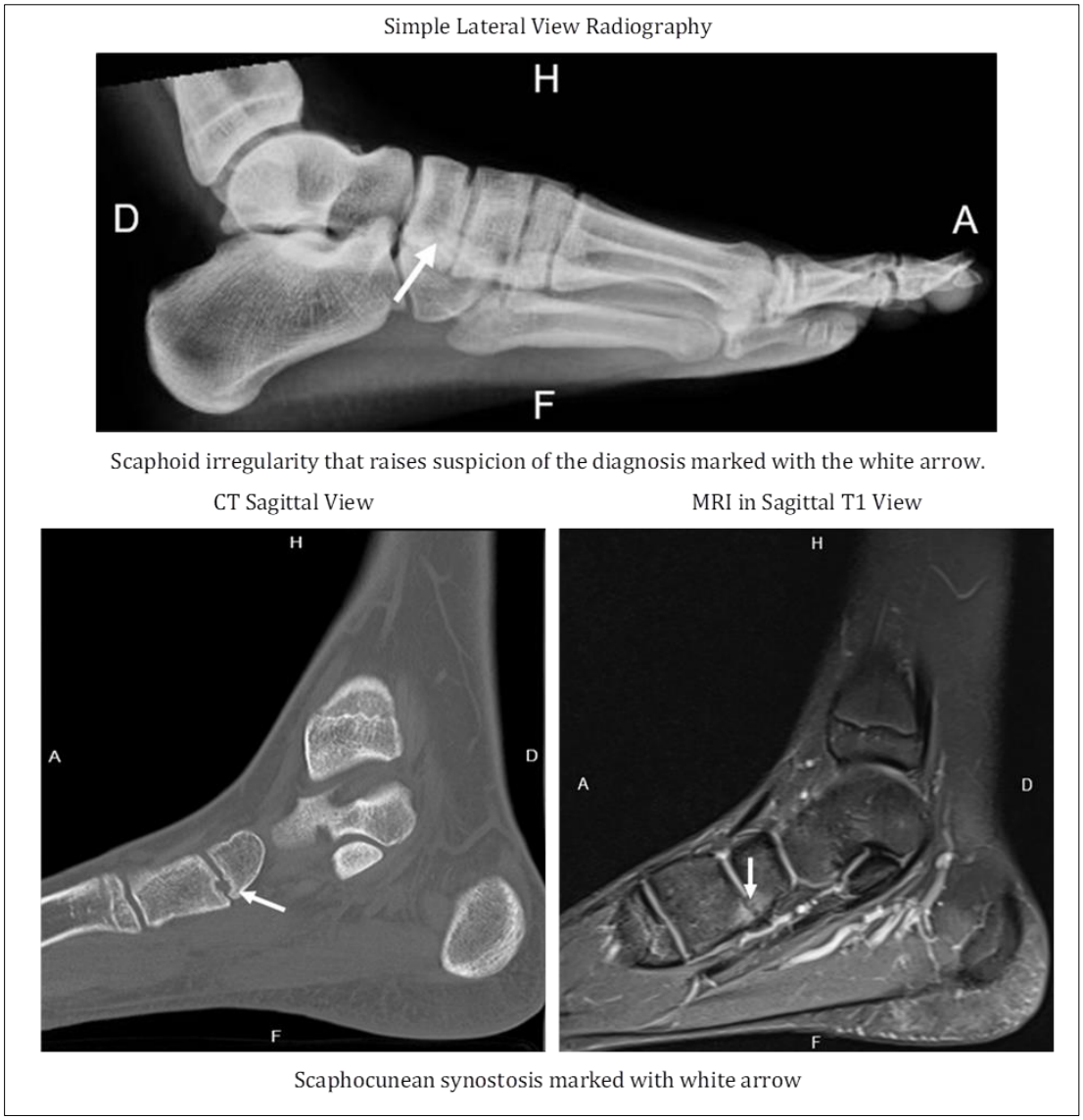

Figure 1 Our patient's case with scaphocuneiform coalition. Lateral view on radiograph, CT, and MRI

3. Discussion

Tarsal coalition is a developmental disorder consisting of a complete or partial union between two or more bones of the midfoot or rearfoot. It affects approximately 5% of the population, being more frequent in males than in females and bilateral in 50% of the cases. It may be associated with other foot conditions such as flat feet (as in the present case).

Pathophysiologically, this condition consists of a failure in the segmentation of the development of the bones involved, divided into three types:

- Synostosis (osseous) (as in the case described previously).
- Synchondrosis (cartilaginous)
- Syndesmosis (fibrous)

Another way to classify tarsal coalition is according to the bones of the foot that are involved:

- Talus - calcaneus (45%).

- Calcaneus - navicular (45%).
- Others (calcaneuscuboid, talusnavicular, scaphocunean, cuboid-navicular) (10%).

Although clinically many patients are asymptomatic, they may begin to develop symptoms during adolescence (as in the present case); some of the most frequent symptoms are ankle pain, stiffness and instability with frequent sprains. In addition, there are associated conditions such as flat feet, tarsal tunnel syndrome, or secondary osteoarthritis.

In order to make this diagnosis, plain radiographs and extension studies (tomography, magnetic resonance imaging) are essential, in which subchondral changes and medullary edema can be observed, as well as unusual articular orientations or loss of articular space. Magnetic resonance imaging is of great help in cases of diagnostic doubt, especially in cases of syndesmosis or synchondrosis in which a decrease in joint space and/or continuity of the bone marrows can be evidenced.

The treatment of this entity can be divided into non-surgical and surgical.

Non-surgical treatment

- Immobilization (in order to reduce edema).
- Analgesia.
- Change of habits and footwear.

Surgical treatment:

- Osteotomies and interposition.
- Arthrodesis and subtalar fusion.

In our case, surgical management was not necessary because the patient improved after a short course of aids, physical therapy, rest from sports activities and the daily use of custom-made insoles.

4. Conclusion

Scapholunate coalition is a rare type of tarsal coalition, which should be suspected by the treating orthopedist based on the patient's clinical presentation as well as imaging features such as irregularity of the articular surface of the navicular associated with secondary degenerative changes. Early recognition of the cuboid-navicular coalition is essential to prevent early degenerative joint disease.

Compliance with ethical standards

Disclosure of conflict of interest

No conflict of interest to be disclosed.

Statement of informed consent

Informed consent was obtained from all individual participants included in the study.

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