Distal calcaneal apophyseal fracture in young athletes: two cases report

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My disclosure is in the Final AOFAS Mobile App.

I have no potential conflicts with this presentation.
Introduction

• Sever apophysitis is a major cause of foot pain in children.
• Typically affects young athletes who perform activities related to running and jumping, such as football and gymnastics.
Introduction

• Benign course, in general
• Treatment: stretching, rest and modification of physical activities
• Resolution of the symptoms in a period of two weeks to two months
Introduction

• Nowadays, the young athletes practices vigorous physical exercises leading to appearance of complications

• We will report 2 cases of gymnasts with Sever disease that developed avulsion of the distal epiphysis through the plantar fascia
Case 1

• Female, 15 years old, heel pain for months
• Worsening of symptoms after intensifying exercises
• She was diagnosed with Sever, used immobilizing brace for 6 weeks, 4 of them non weight bearing
• Gradually returned to training without symptoms.
Case 1

• 11 months later, when starting to jump she felt pain at the site of her previous injury.
• Avulsion of the distal portion of the epiphysis was diagnosed.
• She was treated surgically, with resection of the fragment.
• 4 weeks later, returned to full activities.
• 6 weeks after surgery, she was competing on the uneven bars.
Case 2

• 15 years old boy, which presented severe pain in the plantar region of the right foot after jump.
• Three months earlier, he was already presenting pain, which had been worsening after workouts.
• No treatment or change in their physical activity was instituted until the worsening of symptoms
• The X ray showed avulsion of the distal portion of the calcaneal apophysis with plantar and medial deviation.
• The treatment consisted on resection of the fragment.
• He returned to training in 12 weeks.
Discussion

- Sever's disease was first described in 1912 and used to affect overweight and physically active children and adolescents.
- With the increasing frequency and intensity of exercises, the apophysitis is now also reaching athletes and non-obese children.
- Sports that involve running and jumping have increased incidence of the disease, soccer in particular.
- Recently, some authors described avulsion injuries of the epiphysis in patients with Sever.
- Almost all injuries described occurred in the proximal portion of the epiphysis (avulsion through the Achilles tendon).

Discussion

• Studies using magnetic resonance imaging showed the presence of bone edema and hemorrhage in the metaphyseal bone, near the epiphysis in children suffering from Sever.
• After treatment, these changes disappeared.
• The author concludes that a stress fracture occurs near the epiphysis, and the treatment should be more careful, including non-weight bearing immobilization.
Discussion

• The 2 cases described here, as well as others in the literature, demonstrate that patients with Sever can develop more serious injuries.

• This risk group is formed by individuals who do intense physical activities, in particular in 2 sports: soccer and gymnastics.

• We suggest that, in patients who are at higher risk of complications, a more careful treatment must be instituted, avoiding early return to sports.
References

• www.aofas.org
• www.cob.org.br