

S25 Medical Imaging to Diagnose and Treat Clubfoot

Objectives

1. Define clubfoot
2. How clubfoot is diagnosed and treated

What is Clubfoot?

- Congenital talipes equinovarus, also known as clubfoot, is a condition present at birth. Clubfoot is described when a baby's foot is pointed down and in with a raised arch and inward turned heel. Calf muscles on the clubfoot leg are usually smaller and the foot or great toe may be slightly shorter. The tendons on the foot are shorter than usual, pulling the foot out of position.
- It is a common condition, affecting 1 in 1,000 babies, with boys 2x's more likely to be affected. The cause of clubfoot is unknown, but genetics and environmental factors could be a cause.
- Clubfoot can range from mild to severe. Over half of babies born with clubfoot will be affected in both feet. If clubfoot is left untreated, it can lead to children walking on the side or top of feet. This can develop into a limp, skin sore or calluses, and complications wearing shoes.



How is Clubfoot diagnosed?

Typically, clubfoot is diagnosed after birth with a physical examination. Sometimes X-rays are taken to understand the severity of the clubfoot. Clubfoot can be seen invitro during the 20-week pregnancy exam with ultrasound. Clubfoot can not be treated before birth but can give parents time to learn about the condition. Assessment of clubfoot, using X-rays, requires weight-bearing dorsoplantar foot views (when possible) and lateral X-ray views.



Treatment for Clubfoot

- Due to newborns joints, tendons, and bones being flexible, treatment for clubfoot begins within the first week or two of birth and can be completed within a couple months.
- The most common treatment is casting and stretching, known as the Ponseti method. This method is done to improve position of the foot and casted. Repositions and recasts are done weekly over the course of a few months. Once clubfoot is improved, the baby wears special shoes and braces as long as possible for a 3-6 months and then nightly up to the age of 4 years old. When treated early enough, the child will live a normal life.
- If casting doesn't work or complete correction is not achieved, surgery may be needed around 3-5 years in age. The orthopedic surgeon will reposition the tendons to keep the foot in improved position. This is called a tibialis anterior tendon transfer and has very good results.

Series of Casts



Conclusion

In conclusion, clubfoot is a condition at birth causing the foot to point down and inward. It is typically diagnosed with a physical examination after birth, with x-ray being used to determine the severity of the condition. Treatment for clubfoot is managed with stretching and casting over the course of several months and with good results.