

Clubfoot Deformity

Idiopathic Clubfoot or Congenital Talipes Equinovarus describes a foot deformity seen in approximately in one to two out of 1000 newborns.(fig1) Children with an idiopathic Clubfoot deformity will have no other malformations present. At times a clubfoot deformity can be part of an underlying syndrome in which case further assessment must be performed in order to make the right diagnosis. Most children with clubfoot deformity, however, will not fall under this category. In ultrasound a clubfoot is not detected in the developing fetus up to the 16th gestational week, suggesting that the deformity is developmental, rather than embryonic in nature. We also know that there is a genetic component to clubfoot deformity not entirely understood. This is supported by the fact that boys are more often affected than girls. Also, does one child in the family present with a clubfoot, the probability of another child to have the same type of deformity is slightly increased.

Treatment consists of early manipulation and casting, continuously correcting the deformity. In the past, the applied methods of casting were only able to correct about 50% of all idiopathic clubfeet. Extensive surgery was required to obtain a functional foot in many cases. Unfortunately recent long-term studies do not support this protocol. Many of these patients have shown early onset osteoarthritis and severe limitations in their daily activities. Many patients required further surgery during adolescence. This called for a change in clubfoot management.

At the University of Iowa in Iowa City, USA Professor Ignacio Ponseti has been practicing an alternative method resulting in excellent functional results in almost all of his patients. In 1986 a 35 year follow-up study was published in a peer reviewed journal that surprised the entire Orthopaedic world. Other Orthopaedic surgeons started using the method not only in the US, but also in developing countries such as Malawi and Uganda. The results were very encouraging, resulting in good results in over 90% of patients.

So what is the Ponseti method for Idiopathic clubfoot deformity?

Treatment comprises manipulation and casting in a specific manner, considering the joint architecture of the hindfoot. Casts are changed on a weekly basis starting in the first three weeks of life. After only two casts a significant improvement can be seen. After six casts most of the clubfeet will be corrected. In most cases the foot will still be mildly extended. This situation, the medical term being Equinus deformity, is treated by a lengthening procedure of the Achilles tendon. This can safely be performed at the outpatient clinic under local anesthesia. This will result in full correction of the deformity in almost all cases. Only very few feet, termed atypical clubfeet, might need a minor change in the treatment protocol. After the tendon release the leg is immobilized for three weeks in a long leg cast. In order to maintain correction and avoid a recurrence it is crucial to comply with an extended brace protocol. (fig.2) A foot Abduction Brace (e.g. Dennis-Browne Brace, Alfa-Flex Brace) is used full time for 3 months and at night time for the following three and a half years. Using the brace only at night ensures normal motor development. The ability to crawl, sit and stand is not delayed by the brace regimen. Compliance with the brace will avoid relapse in 90 % of patients. After the age of four, relapses are very uncommon.

The Ponseti Method has proven to be superior to the traditional treatment plans. Even other conservative protocols such as the French method, with a more physiotherapeutic approach to treatment, do not yield an as favorable outcome as the Ponseti method.

Dr Sinclair was able to introduce the Ponseti method as an instructor in Germany, Lithuania and China by regularly organizing courses and work-shops for Orthopaedic surgeons.



Fig 1. Initial presentation of clubfeet

