Setting the Standard of Care – Ponseti Casting for Club Feet

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Congenital talipes equinovarus (CTEV) is one of the most common congenital deformities affecting the lower extremity. The components of a true idiopathic clubfoot include forefoot adductus and cavus, calcaneal varus, and ankle equinus. Treatment for clubfoot aims to achieve a plantigrade, functional, and mobile foot. Although many treatment modalities have been used in the past, the Ponseti method is the most commonly used treatment method in the management of idiopathic clubfeet. Dr. Ignacio Ponseti described this treatment in his ground breaking paper in 1948 that is separated into a casting phase and a bracing phase and has been adopted around the world due to its reliability, minimal invasiveness, and high success rate.[1,2]

As this technique is not one-time activity, the importance of parental education regarding this treatment including average time required, need of regular follow-ups, complications, and importance of compliance with bracing for prolonged time after achieving correction cannot be overemphasized.[3]

Certain points to remember while performing every manipulation and casting are:

• It is an outpatient department procedure without anesthesia.

• Parents are advised to feed the child just before the casting procedure.

Preferably, this procedure should be carried out in a quiet room with the child on mother's lap, and while the child is distracted, for example, by breastfeeding the baby/by playing soothing music/by giving sugar water solution.[4]

• The manipulation and casting steps are repeated every 7 days until complete correction is achieved.

Pirani scoring is done at initial visit and with subsequent visits before casting. Every time two people are needed, one to hold the foot and other person to wrap the cast.

• Steps in Ponseti manipulation and casting technique are as follows:

1. The first step in the manipulation is to correct the cavus, by elevating the first metatarsal to align the forefoot with the hindfoot.
2. Subsequently, manipulation followed by casting is done. During manipulation, two-hand position or one-hand method can be used.
3. During manipulation, using the two-hand method, the forefoot remains in neutral position and pronation is avoided. Thumb of the same sided hand is placed on the lateral side of the talar head and the index finger of the same hand is placed behind lateral malleolus. The forefoot is abducted with the opposite hand.
4. Manipulation using one-hand method involves using the same hand index finger placed on the lateral side of the talar head and the thumb underneath the forefoot achieving abduction.
5. Minimal padding is used while applying the cast.
6. With subsequent steps, the foot is gradually abducted while maintaining the supination and by maintaining counter pressure on the talar head. The hind foot varus and forefoot adduction gets corrected. This step is achieved in 3–4 serial casts.
7. After correcting the midfoot deformity completely, the equinus is corrected by percutaneous tendo achilles tenotomy. After tenotomy, the final cast is applied and worn for 3 weeks.

The pre-requisite for correction of equinus is more than 60° of abduction of the foot in relation to the thigh and that the heel is either in neutral or valgus before dorsiflexing the talar head. Furthermore, there should be full correction of the midfoot deformity.

Ponseti manipulation casting technique allows complete correction of almost all idiopathic clubfeet in 4–7 sessions.

Once all the components of CTEV are corrected bracing should be initiated without gap in treatment.

• Bracing after CTEV correction:

It is recommended to use foot abduction brace full time for the first 3 months and part time (night and nap time) for 4–5 years to maintain the correction and

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Submitted Date: 20 Feb 2023, Review Date: 16 Mar 2023, Accepted Date: 19 Apr 2023 & Published Date: 30 Jun 2023

prevent relapse.

More than 90% of recurrences happen before the age of 5 years, which is why currently, the recommendation is to continue wearing the brace until that age, even if the parents believe that the deformity appears corrected.

Declaration of patient consent: The authors certify that they have obtained all appropriate patient consent forms. In the form, the patient has given his/her consent for his/her images and other clinical information to be reported in the Journal. The patient understands that his/her name and initials will not be published, and due efforts will be made to conceal his identity, but anonymity cannot be guaranteed.

Conflict of Interest: NIL; **Source of Support:** NIL

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Conflict of Interest: NIL
Source of Support: NIL

How to Cite this Article

Ranade AS, Sharma BD. Setting the Standard of Care – Ponseti Casting for Club Feet. Journal of Clinical Orthopaedics Jan-June 2021;6(2):51-52.