The Ponseti Method of Clubfoot Treatment

Dr. Norgrove Penny, CM, MD, FRCS(C)

Clinical Assistant Professor
Faculty of Medicine
University of British Columbia

Senior Advisor for Physical Impairments
CBM International
The Ponseti Method for Treatment of Congenital Clubfeet - What is it?

Manipulation & Casting ≠ Ponseti Method
The Ponseti Treatment for Congenital Clubfeet - What is it?

- A specific method of manipulation
- A specific method of casting
- Percutaneous Tenotomy of the tendo-achilles
- A specific method of bracing
- Long term follow up for recurrence
- A specific method of treating recurrence
The Ponseti Method of clubfoot treatment

It’s where you put your fingers!
The Art of Ponseti

Michelangelo at work!

The more we do it like Dr. Ponseti, the better our results
The Congenital Clubfoot

- Cavus
- Adductus (midfoot)
- Varus (hindfoot)
- Equinus (hindfoot)
Ponseti Casting Technique
3 Important Steps

1. *Cavus* corrected by elevating the forefoot in proper alignment with the hindfoot

2. *Adduction* corrected by abducting the entire foot under the talus with the foot in slight supination

3. *Ankle equinus* is corrected by percutaneous tenotomy of the Tendo Achilles, dorsiflexing the foot
General Principles.

1. *Cavus* corrected by elevating the forefoot in proper alignment with the hindfoot.
Newborn Clubfoot: First Cast

- Forefoot Pronated on Rearfoot Cavus
- Elevate first Ray
General Principles.

2. *Adduction* corrected by abducting the entire foot under the talus with the foot in slight supination

- Heel *varus* will be automatically corrected when the entire foot is fully abducted
The Ponseti Method:
*Correction of adductus and heel varus*

What needs to be done

Position of hands
The Ponseti Method of treating the congenital clubfoot deformity
Localizing the Talus

Reference point is lateral malleolus and distal fibula

Head of talus is anterior to lateral malleolus
Where to put the fingers

Thumb or finger pressure on head of Talus

Forefoot abducted around talus
Use a thin layer of padding
Apply cast snuggly

First apply below knee portion and mould before applying above knee portion
• Always apply an above knee cast - Toes to groin
• Knee at 90° flexion
General Principles.

3. Finally, *ankle equinus* is corrected by percutaneous tenotomy of the Tendo Achilles, dorsiflexing the foot.
Indications for tenotomy:
Last Corrective Cast
50°+ abduction
Percutaneous complete tenotomy under Local Anaesthetic
Final Cast After Tenotomy

- 70° Abduction
- Cast for 3 weeks
The Ponseti Method

Ponseti Casting & Tenotomy *Obtains* Correction

The Foot Abduction Brace *Maintains* Correction
Foot Abduction Brace Protocol

• 3 months full-time
• 3+ years night time

The most difficult phase of the treatment!
Foot Abduction Brace (FAB)

Boots and Bar

45 degrees

70 degrees

width shoulders
Not enough abduction
Brace too narrow
Ponseti Technique
Scientific Validation

• Clinical studies
• Long term follow-up
• Pirani scoring method
• MRI studies
Two Hand Position
Useful for cast application

Move thumb upward to head of fibula once position achieved
Two Hand position

Obtain correction

Move thumb up for cast wrapping

Then switch to one-hand hold. Thumb moves up
Newborn Clubfoot: Subsequent casts

Hand position #1

Thumb on head of talus

Fingers abducting forefoot

R foot R hand

L foot L hand
Newborn Clubfoot

Hand position #2

Index on head of talus

Thumb supinating and abducting first metatarsal

R foot L hand

L foot R hand
Learn to use both hands
Index to thumb, thumb to index
Use the free hand to mould carefully around the malleoli and over the calcaneus
Learn to switch hands so as to mould all around the foot.
Ponseti treatment

What are the Age limits?

Dr. M. Noguiera
6 year-old - no treatment before

Dr. M. Noguiera, Brazil
12 cases, average starting age 4.7

Follow-up averaging 3.3 years

8 of 12 cases fully corrected by the Ponseti technique alone

4 cases required a posterior release to complete the correction.

RDS 4y 3m

3m Ponseti Treatment

3 yr. Follow-up

Dr. A. de Lourenco, Brazil
Clubfeet & Clubfeet!
Hospital and Rehabilitation Centre for Disabled Children

Nepal

Dr. David Spiegel
171 patients (260 feet)
Treatment starting between 1 and 6 years of age
Mean number of casts was 7
   79% percutaneous tendoachilles release alone
   3% open TAL
   8% posterior release
   6% PMR
All feet achieved a plantigrade position initially
94% maintained correction in short-term follow-up
5 yr old child

Courtesy: Dr. S. Piran
Keeping the older child in the brace

Difficult

Impossible!
Tibialis Anterior Transfer

Cast for 6 weeks

No bracing required after tendon transfer
Pre-requisites for Ponseti Treatment in the Older Child

- Longer treatment period
- Committed parents
- Committed practitioners
- Transport logistics
- Housing – rehabilitation hostels
Bottom Line:

Try the Ponseti technique in all cases of neglected clubfoot where possible

• Might completely correct

• Might partially correct and require lesser subsequent surgery (posterior release vs complete subtalar release)

• Stretches medial skin

• Allows skin sores & callouses to heal
Uganda Clubfoot Project

Reported to ASEA/COSECSA
Dr. Shafique Pirani
Uganda & Malawi Clubfoot Projects 1998-2005
National Programs

• Forming partnerships with Ministries of Health (MOH), community based rehabilitation networks and local NGOs.
20 Country Clubfoot Projects
Awareness raising

Bangladesh Clubfoot project 2010 - 2011

Feet under treatment
Sample year 2011: 11,524 children treated

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VISION
A world without disability caused by clubfoot

USE OUR RESOURCES
Access our resource library here

MAKE GLOBAL CONNECTIONS
Click here for our map of global information

PARTNER WITH US
See who we already partner with

80%
80% of the 200,000 children born each year with clubfoot around the world are born in low and middle income countries.

NEWSLETTER
Email address:
Your email address
Click on the map below for information from all low and middle income countries around the world

**(Number of clubfoot cases estimated using the latest CIA World Factbook population data and an incidence rate of 1.2/1000 births)**
Clubfoot: Ponseti Management

Lynn Staheli, Ignacio Ponseti, & Others

*Complete list of translators.*
32 pages, 8.5” x 11”, Four-Color, English, 2009.
Available in PDF and Printed formats.

**Details**
News: Now updated to a completely new 3rd Edition in a variety of languages. Thank you to everyone involved with the production of this new edition, especially those, like Dr. Jose Morcuende at Ponseti International, who edited and proof-read the book for up-to-date medical accuracy.

Translations of this new 3rd Edition are also underway. Please let us know if you would like to help.

This book provides information on all aspects of Ponseti management of Clubfoot.

The book was authored by Dr. Lynn Staheli, Dr. Ignacio Ponseti, and others, who have all mastered this casting technique. We recommend that Dr. Ponseti’s technique be learned in a course using this book as a reference.
Get knowledgeable