COMPARISON OF MID-TERM RESULTS OF PONSETI MANAGEMENT FOR IDIOPATHIC AND NONIDIOPATHIC CONGENITAL CLUBFEET

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INTRODUCTION

- High success of the Ponseti method for ICC >< neuromuscular conditions or other syndromes (nonidiopathic clubfeet) ?
- Vietnam: Ponseti method since 2004.

- 1st paper in 2013: evaluated the efficacy & the challenges of the Ponseti method, both idiopathic & pathological CC.
- 2nd paper in 2016: evaluated Ponseti method in idiopathic CC followed up at mid-term.

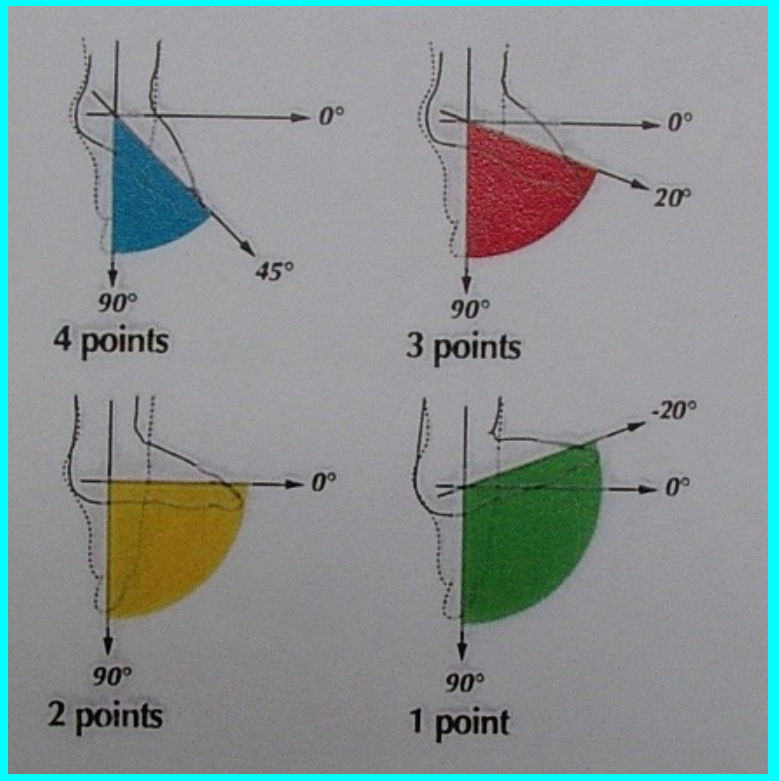
- This study: compares initial correction, relapses, latest follow-up mid-term results between idiopathic & nonidiopathic CC.

MATERIALS & METHODS

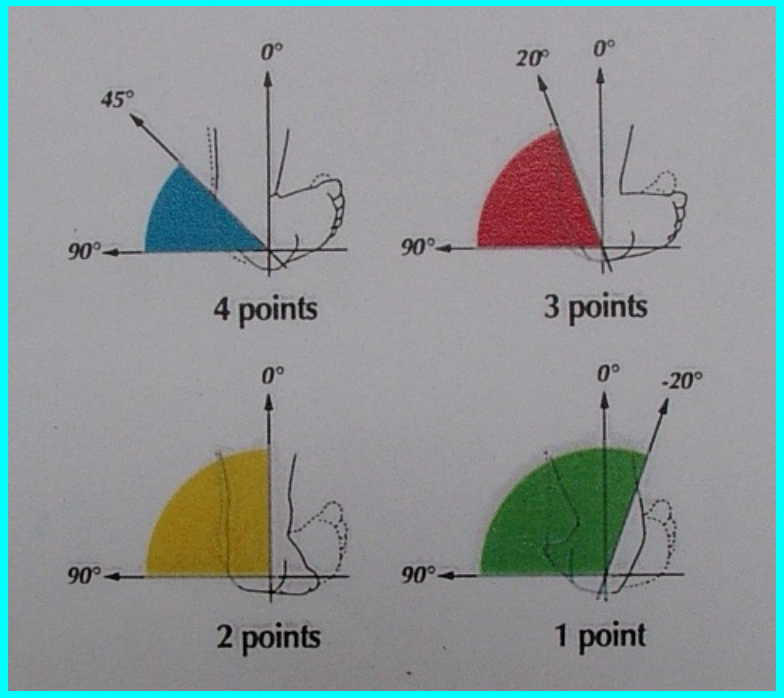
- 118 ICC (group 1) 82 pts & 32 NonICC (group 2) 21 pts: newborn to 12mos, 2004-2011.
- FU: 24-114 mos, avg. 44 mos (group 1) & 24-93 mos, avg. 38 mos (group 2).

Ponseti method

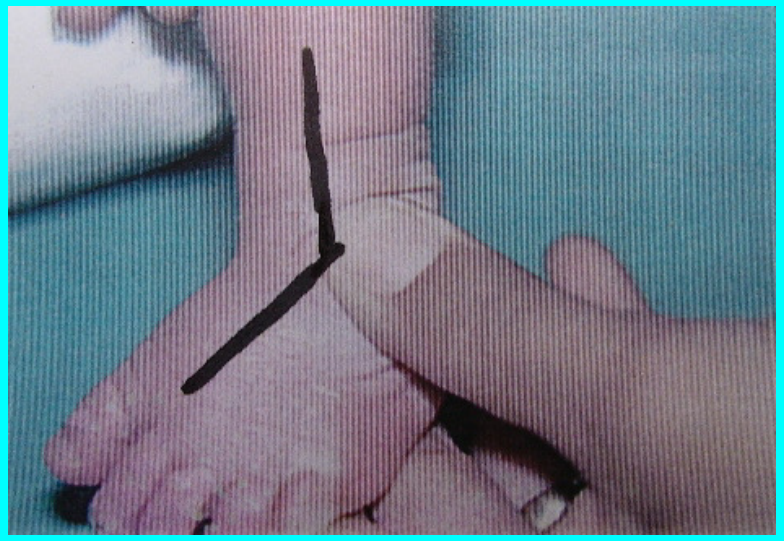
Classified and evaluated during casting according to Diméglio's scale.

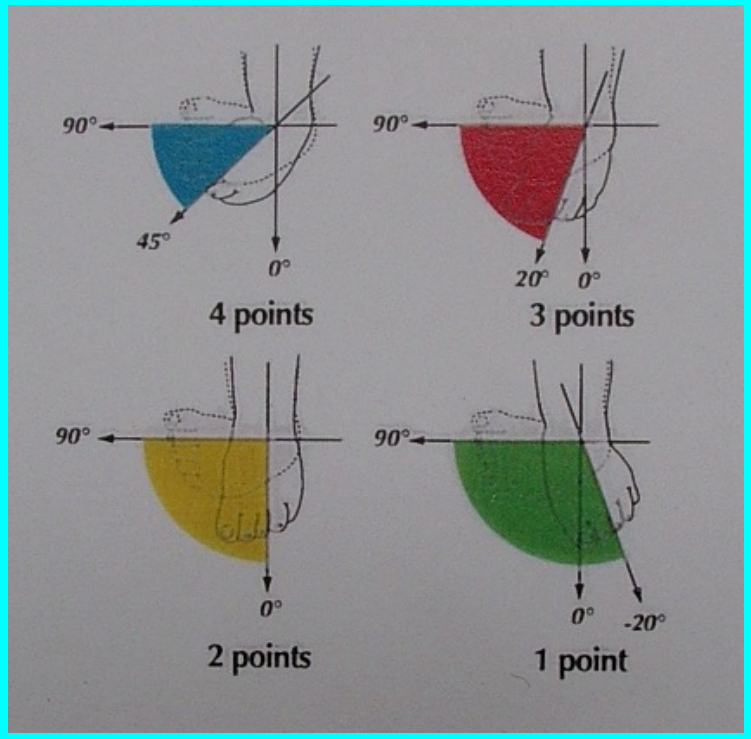


Equinus

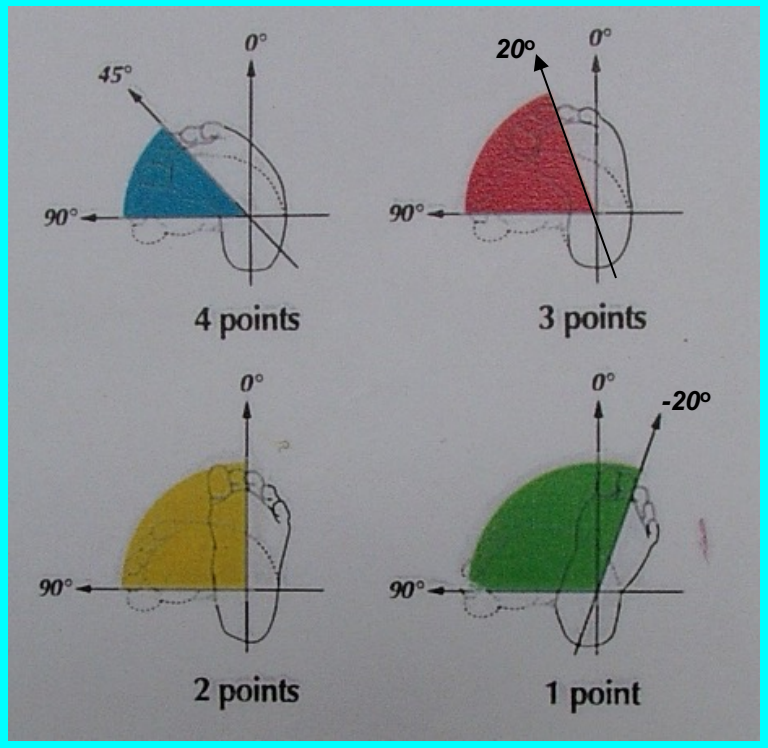


Varus





Int. rotation



Adductus

Post. crease

Med. crease

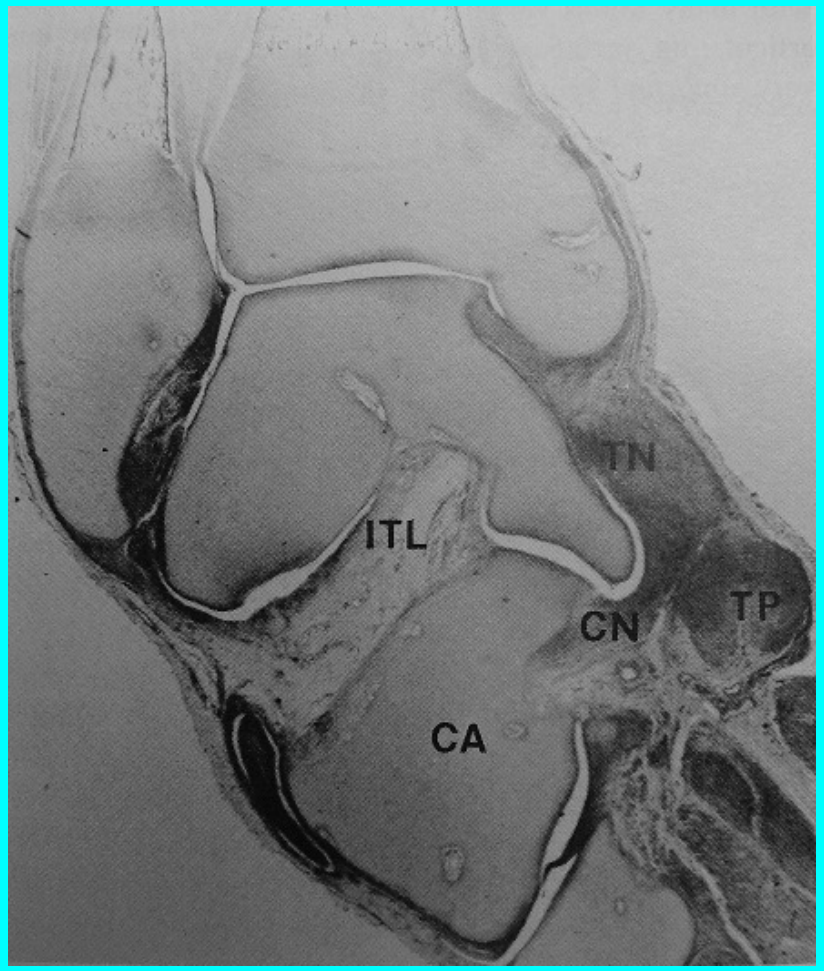
Cavus

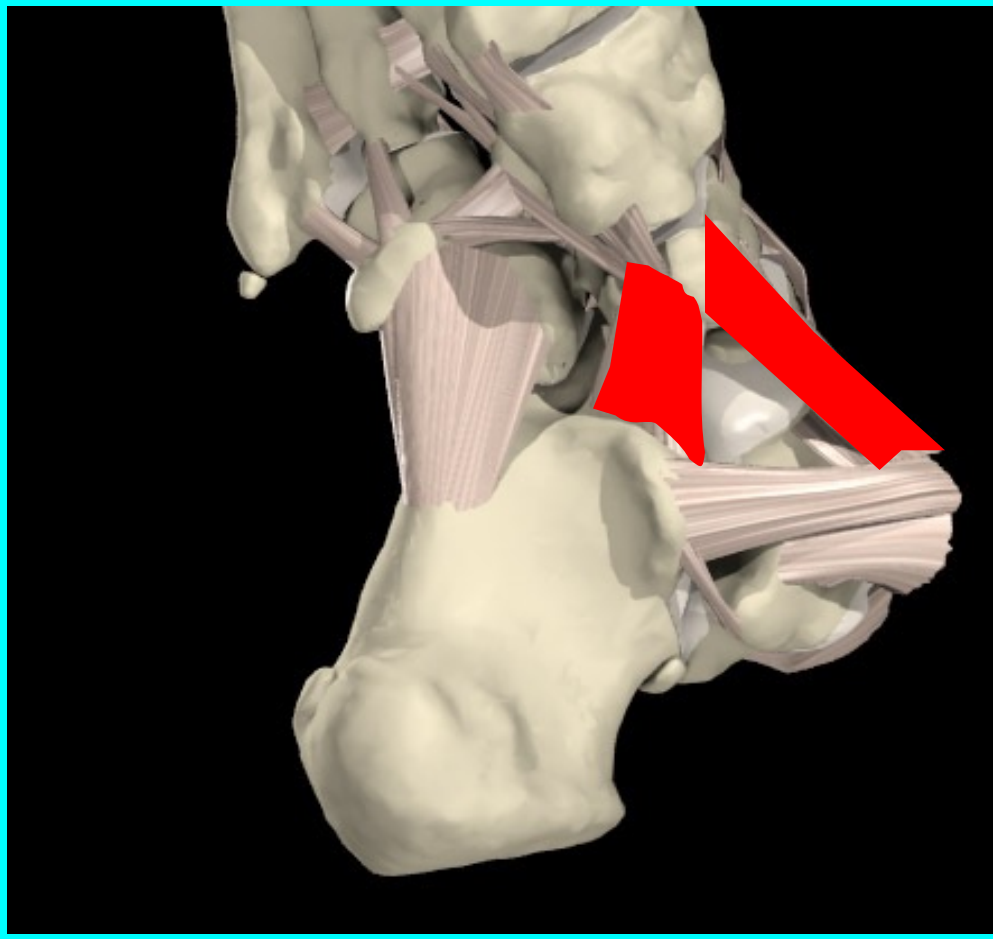
DEFORMITIES

Equinus	0-4 point	Post. crease	0-1 point
Varus	0-4 point	Med. crease	0-1 point
Int. rotation	0-4 point	Cavus	0-1 point
Adduction	0-4 point	Muscle	0-1 point

GRADES

GRADE I (mild)	< 5 point
GRADE II (moderate)	<10 point
GRADE III (severe)	<15 point
GRADE IV(very severe)	≥15 point


TN
ITL
CN
TP
CA



Protocol of evaluation

- **Initial correction:**

  ✓ **excellent: all of 5 deformities** (cavus, adductus, varus, internal rotation & equinus) corrected completely.

  ✓ **acceptable: 1 deformity ≤ 1pt.**

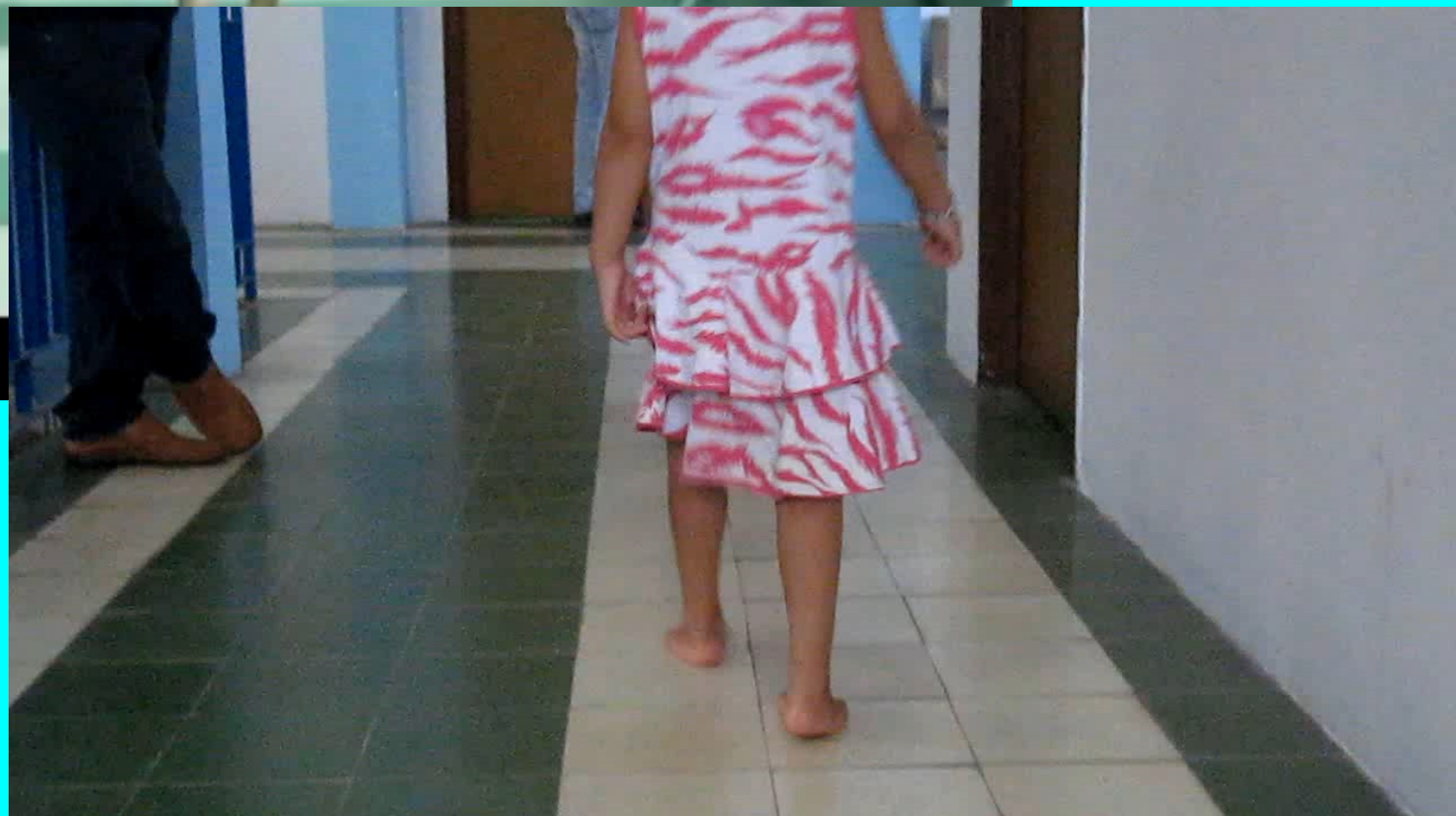
- **Relapse:**

  1 deformity ≥ 2pts.

- **Lastest follow-up result:**

Richards' classification on plantigrade foot:

- ✓ **Good:** with or without PTT.
- ✓ **Fair:** requiring, or scheduled for, limited posterior release, ATTT, &/or lateral column shortening.
- ✓ **Poor:** requiring, or scheduled for, complete posteromedial release.



RESULTS & DISCUSSION

	Idiopathic N=118feet (82pts)	Nonidiopathic N=32feet (21pts)	Difference (p)
Age at first presentation (newborn: 1-3mos: 4-6mos: 7-12mos)	43.2%: 37.3%: 16.9%: 2.5%	50.0%: 21.9%: 21.9%: 6.3%	0.335
Unilateral:bilateral	46:36 (pts)	10:11 (pts)	0.486
Noncompliant bracing	9/114*(7.9%)	5/26** (19.2%)	0.082
Follow-up (mos)	24-114 (avg. 44)	24-93 (avg. 38)	0.215

	Idiopathic N=118feet (82pts)	Nonidiopathic N=32feet (21pts)	Difference (p)
Severity (moderate: severe: very severe)	51.1%: 42.4%: 2.5%	25.0%: 59.4%: 15.6%	<0.001
Avg. No. of casts	4.6	5.3	0.056
PTT	97/118 (82.2%)	29/32 (90.6%)	0.249
Initial results (exellent: acceptable: failed)	72.9%: 23.7%: 3.4%	50.0%: 31.3%: 18.7%	0.003
No. of relapses	8/114* (7.0%)	7/26** (26.9%)	0.003
Management of relapse (cast: PTT: med-post. release)	25.0%: 75.0%: 0.0%	0%: 42.9%: 57.1%	<0.001
Latest follow-up results (good: fair: poor)	76.3%: 22.0%: 1.7%	21.9%: 46.9%: 31.3%	<0.001

	No. of clubfeet (I:N)	Avg. follow-up (mos)	Avg. No. of casts (p)	PTT (p)	Failures (p)	Relapses (p)	Poor latest results (p)
This study	118:32	44:38	4.6 : 5.3 (0.056)	82.2%: 90.6% (0.249)	1.7%: 31.3% (<0.001)	7.0% : 26.9% (0.003)	1.7%: 31.3% (<0.001)
Janicki et al.	249: 40	31: 32.6	4.8: 6.4 (<0.001)	75.0%: 68.0% (0.31)	2.8%: 10% (0.027)	13.0%: 44.0% (<0.001)	6.4%: 28.0% (<0.001)
Funk et al.	111:48	36 both	(<0.001)	NA	11% (0.8)	(0.014)	(0.331)
Gerlach et al.	35:28 (Spina bifida)	37:34	NA	NA	0%: 3.6% (0.16)	26%: 68% (0.001)	(0.16)

	No. of feet	Severity (moderate: severe: verysevere)	No. of casts (avg.)	Initial results (excellent: acceptable : failed)	Relapses	Management of relapse (cast: PTT: med-post. release)	Latest results (good: fair: poor)
Arthrogryposis	12	0:8:4	6.7	2:6:4	4/8 (50%)	0:2:2	2:4:6
Amniotic band syndrome	5	1:4:0	6.2	3:1:1	0/4 (0%)	0:0:0	0:4:1
Spina bifida	5	4:1:0	3.6	3:2:0	1/5 (20%)	0:0:1	0:4:1
Foot hypodysplasia	6	3:2:1	3.7	3:2:1	2/5 (20%)	0:1:1	1:3:2
Ehler-Danlos syndrome	4	0:4:0	4.5	4:0:0	0/4 (0%)	0:0:0	4:0:0

Arthrogryposis

Amniotic band syndrome

Ehler-Danlos syndrome

CONCLUSION

- Ponseti method: successfully both ICC & NonICC.
- Relapse of NonICC: high and most need medioposterior release or additional procedures.

CONCLUSION

- Continuous long-term follow-up for NonICC treated by Ponseti method to appropriately manage the sequelae: essential to obtain the latest results as expected.

THANK YOU