

(eP-48) VARIATIONS IN HALLUX SIZE DURING PONSETI MANAGEMENT OF IDIOPATHIC CLUBFEET

INTRODUCTION & AIM OF STUDY

- Short hallux (great toe shorter than 2nd toe) considered sinister sign due to association with complex clubfoot
- Persistence of short hallux after deformity correction has been associated with relapse
- Aim- To study hallux variants in clubfeet & change in their size during casting
- To ascertain whether short hallux indicated potential difficult treatment and whether persistence indicated relapses

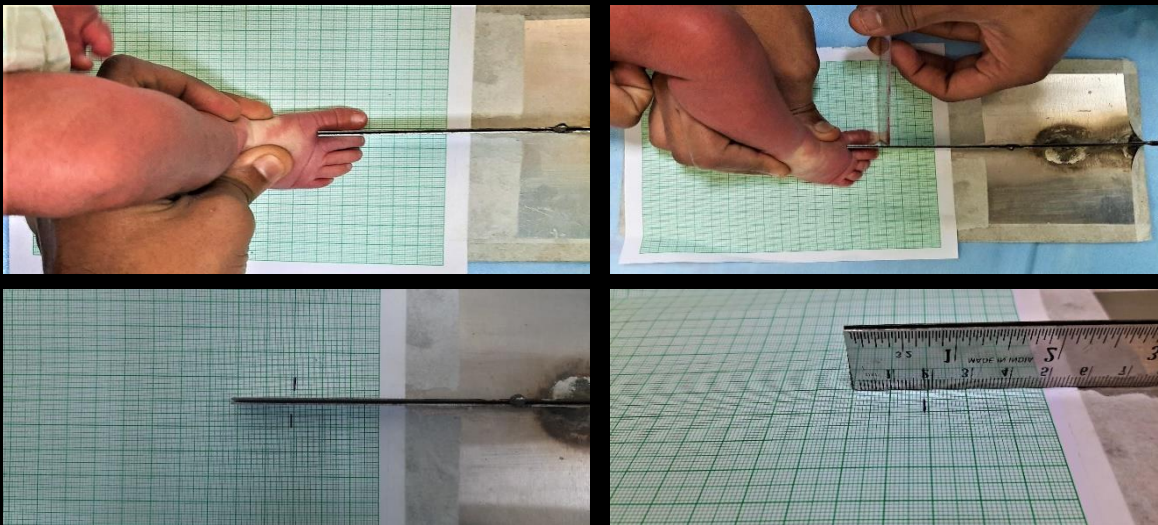


Fig. 1 - Measurement of hallux size

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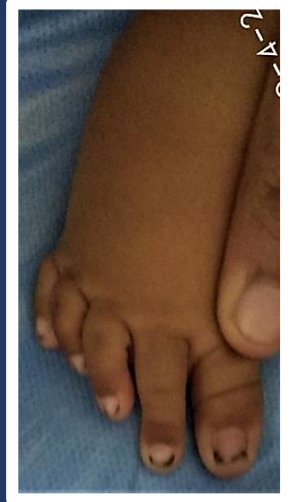
METHODS

- 38 infants with 62 idiopathic clubfeet included
- Syndromic, neurogenic, complex clubfeet (short hallux, deep planter crease, squashed heel) excluded
- Hallux length recorded at presentation, each casting session and at follow up by a customised instrument which used fixed metal rulers on a graph sheets (Fig. 1)
- Length graded long (0), equal (0.5), short (1) as compared to 2nd toe. Scores in similarity to Pirani score, considering short hallux as severe deformity
- Difference of more than 2mm was considered significant and was required to label hallux as short or long in comparison to 2nd toe
- Severity of clubfeet assessed in terms of initial Pirani Score (PS) and number of casts required for correction

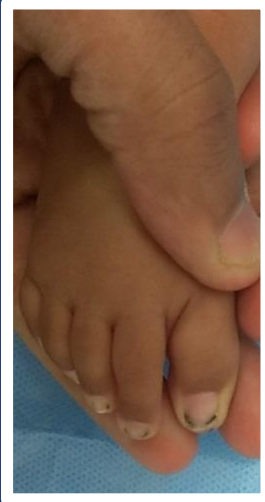
RESULTS

- Average age at presentation – 51 ± 74 days
- Average follow up – 15 months
- Average number of casts – 4 ± 1.2

- Short hallux – 19/62 (30%) → 5 (26%) remained short, 14 (74%) became equal or long at follow up (At presentation)
 - Equal Hallux – 36
 - Longer Hallux – 7
- 43/62 (70%) → Size shortened during treatment – 36/43 (84%) → Regained length - 32/36 (89%)
Remained short - 4/36 (11%)



Week - 1



Week - 2



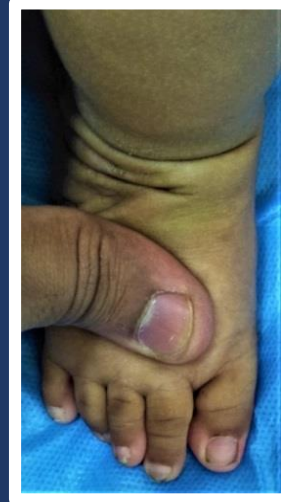
Week - 3



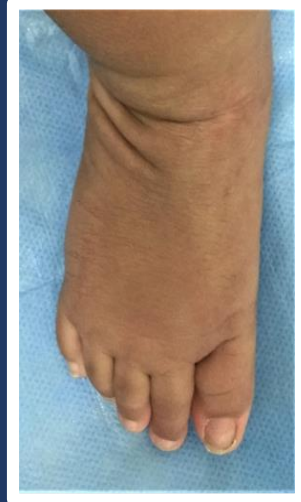
Week - 5



Week - 7



Week - 10



Week - 22



Week - 90

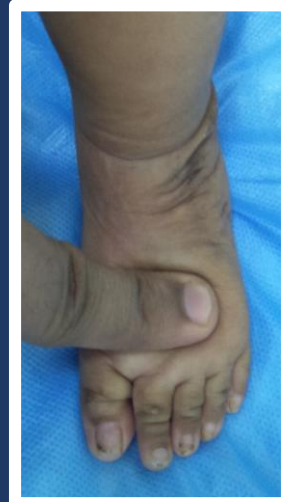
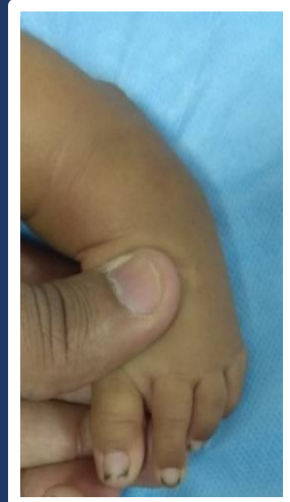


Fig. 2 - Clinical pictures of a 5 week old child undergoing Ponseti casts and at final follow up showing decrease in hallux size initially, regained later



Week - 1



Week - 2



Week - 3



Week - 4



Week - 7



Week - 30



Week - 75



Fig. 3 - Sequential clinical pictures of another infant having hallux equal to the size of 2nd toe at presentation. Child underwent serial Ponseti casts and decrease in the size of hallux can be clearly appreciated. The hallux length is recovered gradually in the following months and at final follow up at 75 weeks, it can be appreciated that hallux length is nearly equal to the length of the 2nd toe.

RESULTS AT A GLANCE

- 19 out of 62 (30%) feet had short hallux at initial presentation (10 had been partially treated elsewhere)
- In 43 out of 62 (70%) hallux was either equal (n=36) or longer (n=7) than 2nd toe
- Amongst these 43, 36 (84%) shortened during Ponseti casting. Maximum shortening was noticed after 1st & 2nd casts
- 89% (32/36) of these shortened hallux regained / recovered their lengths during follow up
- 74% (14/19) of the clubfeet with initial short hallux also regained their length at final follow up
- Difference between the average number of casts in short hallux group at presentation (n=19; 3.9 casts) as compared to others (n=43; 4.0 casts) was not significant (p=0.72)
- Difference in severity of clubfoot deformity as assessed by Pirani score was also not significant between short hallux group (PS=5.18) and others (PS=5.56; p=0.1)

HALLUX TREND CHART

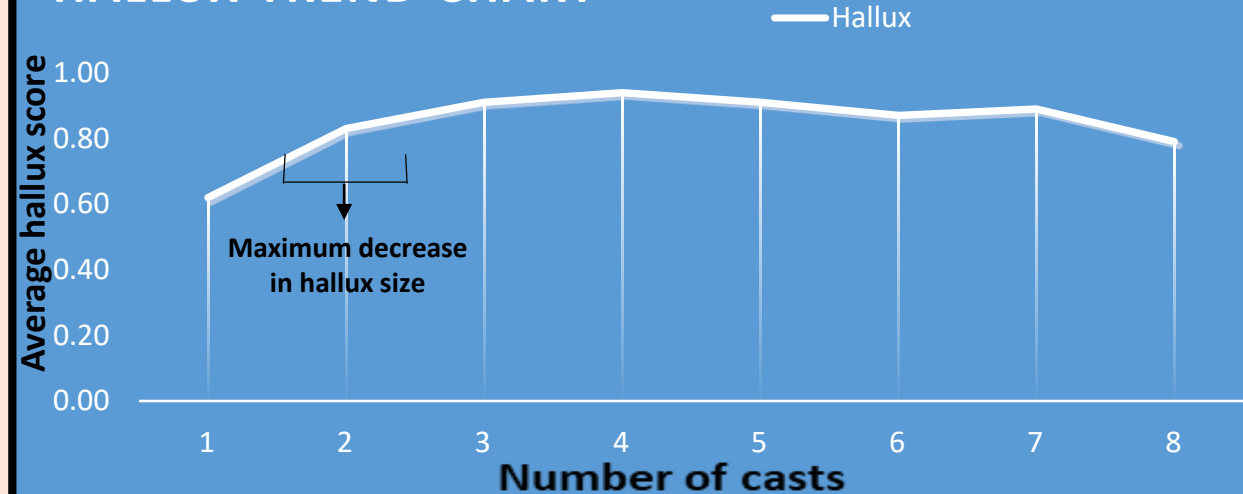


Fig. 4 - Trend of hallux size during the course of casting

CONCLUSIONS

- Hallux size decreases during Ponseti casting
- Length is regained within a year of initial correction
- Isolated short hallux without any other feature of atypical / complex clubfeet neither indicates resistant / difficult treatment nor predisposes to early relapse