

A COMPARISON STUDY ON HINDFOOT CORRECTION BETWEEN CLUBFOOT PATIENTS TREATED WITH PERCUTANEOUS ACHILLES TENDON TENOTOMY VERSUS CASTING ALONE USING PONSETI METHOD.

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Introduction: Clinical severity of hindfoot deformity is an established predictive factor of relapse in clubfoot and incomplete correction results in dire consequences. This pioneer study compares the hindfoot correction using clinical and ultrasonography assessment in clubfoot patients undergoing Achilles tendon tenotomy versus casting alone.

Methodology: Prospective observational study was conducted on idiopathic clubfoot patients less than 3 months old in University Malaya Medical Centre (UMMC) clubfoot clinic from January 2017 to May 2018. Serial casting with Ponseti method was done for all the patients. After successful midfoot correction, patients were divided into two groups, patients with ankle dorsiflexion $<15^\circ$ underwent percutaneous Achilles tendon tenotomy (Group A), patients with ankle dorsiflexion $\geq 15^\circ$ corrected via casting alone (Group B). Clinical assessment of hindfoot correction was done using hindfoot Pirani score and measurement of ankle dorsiflexion using goniometer. Same paediatric-orthopaedic surgeon performed all the casting and bedside Achilles tendon tenotomy. Ultrasonography assessment was done by radiologist blinded to the procedures. The difference between values during 6 weeks post-correction and pre-hindfoot correction was used to assess the improvement in Achilles tendon length and thickness.

Discussion: 23 bilateral and 4 unilateral clubfoot patients were recruited with total of 50 clubfeet. Each group consists of 25 feet with a mean age of 2 months. Marked improvement in hindfoot correction was noted in Group A compared to Group B as evidenced by significant increase in Achilles tendon length, ankle dorsiflexion and improvement of hindfoot Pirani score. Pearson correlation test showed positive linear relationship between Achilles tendon length, ankle dorsiflexion and improvement in hindfoot Pirani score. The difference in Achilles tendon thickness between the two groups was not significant.

Conclusion: We would like to propose Achilles tendon tenotomy in all clubfoot patients after midfoot correction as it is concretely evident that superior hindfoot correction was achieved via tenotomy compared to casting alone.