Evaluation of Idiopathic Clubfoot Deformity in Infants by Pirani or Dimeglio Score: Attempting to Clear the Confusion!

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Background

The advent of Ponseti's technique has made the management of idiopathic clubfoot simple and effective. Though a number of scoring systems have been used in the past Pirani and Dimeglio scoring systems have stood the test of time for classification of clubfoot deformity in daily practice. Still superiority of any one scoring system over another has not been validated yet.

Aims & Objectives

To evaluate idiopathic clubfoot deformity in infants by Pirani or Dimeglio score

Material & Methods

Total 70 feet of idiopathic clubfoot deformity below 1 year age were evaluated and managed by classical Ponseti's two hands technique. Pirani 6 point scoring system and Dimeglio 20 point scoring system were used to score the deformity pretreatment and prior to casting every week till deformity was completely corrected. Percutaneous tendoachillis was done in accordance with principles of Ponseti's method and when midfoot Pirani score was less than 1, hindfoot score was more than 1 and talar head was not palpable. Post correction the patients were followed regularly for minimum of one year.

Results

Mean age of presentation was 115.5 days (approximately 17 weeks), youngest child being 7 days and oldest being 332 days (47 weeks) old. Bilateral involvement was found to be 35%. Right limb was more involved (68%). Evaluating a single foot took an average of 60 seconds in Pirani system and almost double the time in Dimeglio system. At presentation the mean Pirani score was 4.6 and mean Dimeglio score was 14.3. Complete correction was achieved in all 70 cases. Post correction mean Pirani score was 0.2 and Dimeglio score was 3.1. Positive correlation was found between pre and post correction Pirani and Dimeglio score and also between pretreatment Pirani and Dimeglio score and number of casts required for complete correction. Pirani score fell by average of 0.6 (10%) and Dimeglio score by 1.5 (7.5%) with each cast. Mean Dimeglio score at tenotomy was 6.4±1.1.

Conclusions

With each casts the fall in score was more in Dimeglio score but Pirani being a 6 point scoring system the percentage fall is more in Pirani score. Pre and post treatment Pirani and Dimeglio score correspond with each other, although they do not accurately predict the number of casts required for correction. Pirani score plateaus just prior to tenotomy unlike in Dimeglio system in which there is a gradual fall. However the Dimeglio method took longer time as compared to Pirani but once mastered the time taken to score gradually declined. It was observed that tenotomy can be done with Dimeglio score of 5 or less which corresponds to the Pirani score for tenotomy. We conclude that both Pirani and Dimeglio scoring methods can be used for club foot evaluation with ease and do not show superiority over another. Hence both can be used effectively in daily practice depending on the surgeon's choice.