



MEDIUM TERM RESULTS OF LATERAL COLUMN SHORTENING ALONG WITH PMSTR IN CLUBFEET PRESENTING LATE UP-TO 8 YEARS

Orthopaedics

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ABSTRACT

Purpose: To evaluate the results of postero-medial soft tissue (PMSTR) release along with lateral column shortening in children having clubfoot presenting late for treatment i.e after age of 4 years.

Methods: Results of lateral column shortening with PMSTR were reviewed in retrospectively in 24 feet of 16 children who were treated in our institution between December 2013 and January 2015. International clubfoot scoring system was used to evaluate the result.

Results: All patients were available for final follow up. The mean pre-operative score was 35. On final follow up 12 feet had excellent, 8 had good and 4 had good scores. There were 2 superficial infections in post-operative period all of which responded well to treatment.

Conclusion: PMSTR along with lateral column shortening procedure for children with CTEV presenting late is a reliable procedure. Though the follow up is brief i.e upto 2 years, there were no relapses, so far. Besides less frequent follow ups are required which is a problem for children presenting in third world countries and especially from remote and inaccessible areas.

KEYWORDS:

Clubfoot, feet, recurrence

Main Manuscript

Brief Introduction: Primary treatment of children who present early with congenital clubfoot remains with Ponseti's technique¹. Casting followed by maintenance braces provides lasting cure for this condition. Around 80% of children with clubfoot world-over are born in low and middle income countries.^{2,3} Most of the patients which present to us after 4 year of age are neglected, or having relapsed or resistant clubfeet. Further due to hilly terrain of our state and bad condition of roads and health infrastructure in our state, follow up is a real problem. Postero-medial soft tissue release (PMSTR) along with lateral column shortening remains a good method for patients presenting late or with very rigid feet. This study assesses the results of PMSTR along with lateral column shortening in these patients.

Material & Methods: This was a retrospective study. Patients who were treated for clubfoot between Dec. 2013 and July 2015 were included in this study. Patients who presented late either with neglected clubfeet with age more than 4 years were included in this study after getting approval of ethics committee of our institution. International clubfoot society group scoring system¹ was used to assess the feet pre-operatively and upto 2 years post operatively. It is an objective method to assess the results of treatment of clubfoot. The foot alignment, function and radiological assessment are undertaken. The most deformed feet have a score of 60 while normal feet have a score of 0.

Patients were operated in supine position under tourniquet control. Using standard posteromedial incision, a posteromedial soft tissue release was performed first. Using a lateral incision, the calcaneo-cuboid joint was exposed sufficiently. The distal portion of calcaneus was excised till cancellous bone to bring it to same horizontal level as the talo-navicular joint. Wound was closed in routine fashion. Long leg cast was given post-operatively and close watch was kept on the distal circulation of toes. Cast was routinely changed after suture removal. Long cast was given till 6 weeks and afterwards it was changed to below knee cast, again for a period of 6 weeks. After that, children were given ankle foot orthosis which was continued for another 3 months. All children were followed up for next 1^{1/2} years with clinical examination and x rays.

Results: 24 feet, 8 unilateral and 8 bilateral were included in this study. 12 males and 4 females between ages of 4 to 8 were included. Feet were scored using international clubfoot society group score. All patients were followed at monthly intervals for first 3 months and then at 2 months. All patients were available for last follow up i.e at 2 years interval. All feet scored poor (mean score 35) pre-operatively. Post

operatively 12 feet had excellent, 8 had good and 4 had fair score. 2 feet had superficial infections which responded to wound dressing and oral antibiotics.

Discussion: Clubfoot is one of the most common congenital abnormalities. Most of the clubfeet could be very well managed conservatively, using ponseti's technique². It is not still unusual to find an untreated or a partially treated clubfoot in the scenario of the developing countries³. Most of the studies current focus on the treatment of relapsed and resistant clubfeet^{4,6}. Limitation of conservative treatment are seen in older children when the deformities become rigid and secondary changes start of occur in skeleton of the foot. Postero-medial soft-tissue release is used in treating these older children upto age of 4⁷. After 4 years of age, the bony deformities do not yield even after soft tissue correction. Evan gave the principle of elongated lateral column and a shortened medial column as a cause of persistent forefoot adduction⁷. So bony procedures like cuboid de-cancellation, Evan's procedure⁸ and Litchblau procedure⁹ can be performed. There is obliquity of the calcaneo-cuboid joint or partial subluxation which needs to be corrected, which is not possible in older children with more stiff feet without a bony procedure.

Most of the patients which present to us were having very stiff feet. After doing a complete medial and posterior release, we were not able to correct adductus. Most of the adductus is seen at the midfoot level. The lateral column is longer than the medial column in older children. The primary pathology is obliquity of calcaneo-cuboid joint and relative lengthening of anterior portion of calcaneus. This obliquity of calcaneocuboid joint is because of the long lateral column and for making foot more plantigrade, we need to shorten the long lateral column.

Other methods of treatment have been advocated in older children with stiffer feet including ilizarov fixators^{10,11}, Jess fixators¹², triple fusion and talectomy¹³.

There are limitations of this study. The sample size is small. Though the follow up is short, and we are expecting a longer follow up to determine the final result, yet we were able to correct the deformity in this brief follow up without the requirement of frequent visits by patients.

Conclusion: PMSTR along with lateral column shortening remains a well accepted procedure for management of CTEV in patients presenting late or with resistant deformities. Wound complications may pose some problems which should be kept in mind.

Figure 1: Preoperative AP X rays a 5 year old with neglected CTEV



Figure2: Pre-operative Lateral view of Bilateral feet with ankles



Figure 3: Post op Lateral views of patient at 3 months



Figure4: Post operative APX-rays of patient at 3 months

Figure5: Clinical picture of child at 3 months post operative:



Figure 6: Clinical Picture at 3 months postoperatively

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