

Patient Reported Outcomes after Calcaneal Lengthening Osteotomy for Treatment of Pediatric Painful Flexible Flatfoot

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INTRODUCTION: Pediatric flexible flatfoot is common, and most children are asymptomatic. Calcaneal lengthening osteotomy (CLO) is commonly performed for the treatment of painful pediatric flexible flatfoot (FF) that has not responded to non-operative measures. The purpose of this retrospective study is to investigate the impact of CLO on patient reported pain and mobility as measured by Patient Reported Outcomes Measurement Information System (PROMIS) scores of pediatric patients treated for FF.

METHODS: Children aged 8-18 who underwent CLO to treat painful FF with minimum 6 months postoperative follow up were included in this analysis. PROMIS scores for pain and mobility were retrospectively collected from available electronic records. In patients who received a unilateral procedure, pain and mobility PROMIS scores from the final preoperative visit were compared to final postoperative PROMIS scores collected within 6-12 months after CLO. Among patients who received bilateral procedures, the first foot's final preoperative scores were compared to the second foot's final postoperative scores collected within 6-12 months after CLO. Five point change in PROMIS score was determined to be a minimal clinically significant difference, as this is half of the standard deviation of the PROMIS metric.

RESULTS: 21 patients with 31 feet were included in the study, with an average age of 12.2 years old (range 9 - 15) at the time of surgery. Mean preoperative pain and mobility PROMIS scores were 53.6 (range 32.2 - 69.6) and 42.5 (range 25.5 - 56.4), respectively. Mean postoperative pain and mobility PROMIS scores were 47.1 (range 32.0 - 59.0) and 48.3 (range 31.6 - 61.7), respectively. We found a statistically significant improvement in both pain ($p = 0.005$) and mobility ($p = 0.017$) following the procedure. A clinically significant improvement was also found with average pain decreasing by 6.5 points and average mobility increasing by 5.8 points after CLO was performed.

DISCUSSION AND CONCLUSION: Pediatric patients who have undergone calcaneal lengthening osteotomy for painful flatfoot deformity report significant improvement in their pain and mobility.