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## Calcaneal lengthening for the pes planovalgus foot deformity in children with cerebral palsy

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The objective of this study was to evaluate the operative management of pes planovalgus deformity in ambulatory Cerebral Palsy (CP) children by calcaneal lengthening osteotomy described by Evans. Fifteen children (10 girls and 5 boys) with average age 11 years 6 months (range, 8 years 4 months to 14 years 6 months) with 22 feet with Pes Planovalgus (PPV) deformity were included in this study. Clinical evaluation was made according to Dogan's scale and graded as perfect, good, fair and poor. Preoperative and postoperative radiological assessment of anteroposterior Talo-first metatarsal angle (AP-T1MT), anteroposterior Talo-calcaneal angle (AP-TC), lateral Talo-first metatarsal angle (Lat. T1MT), lateral Talo-calcaneal angle (Lat. TC) and lateral Calcaneal pitch angle (Lat. CP) had been done for all feet. All feet were corrected with modification of the calcaneal lengthening osteotomy described by Evans. Clinical results were perfect in 18 feet (82%), good in 2 feet (9%) and fair in 2 feet (9%). Radiological results showed improvement in 20 feet, while 2 feet showed no improvement. The improvement was significant in Lat. T1MT ( $P<0.001$ ), AP-T1MT ( $P<0.05$ ), AP-TC and Lat. CP ( $P<0.001$ ,  $P<0.001$ , respectively) whereas it was insignificant in Lat. TC ( $P>0.05$ ). The results of the present study showed that the procedure reliably relieves pain in PPV foot in CP children and proved effective in addressing all components of the deformity in both hindfoot and forefoot clinically and radiographically.

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