The use of “on-top plasty” for reconstruction of radial polydactyly

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Introduction

“On-top plasty” was first reported in trauma patients by Soiland in 1961 and translated to treatment of duplicated thumb by Dobyns in 1985. It was an innovative method to manage the challenging situations of duplicated thumb with one proximally hypoplastic and one distally hypoplastic. The present study is to report our case series who underwent “on-top plasty” in recent years.

Methods

20 thumbs in 20 patients underwent “on-top plasty” between 2009 and 2016 were included in the study. The average age at time of surgery was 1.2 years and the mean follow-up time was 4.5 years. Subjective patient evaluation, objective outcomes values, and validated patient-oriented outcome measures were attained.

Results

No soft tissue loss and union was achieved in all thumbs. Mean flexion-extension arc for the metacarpophalangeal joint was 62º and at the interphalangeal joint was 18º. Mean percentage of age-matched norms for lateral, tripod, and tip pinch were 51%, 45%, and 49%, respectively. Mean grip strength was 56% of age-matched norm. The mean Pediatric Quality of Life Inventory (PedsQL) score for parent questionnaires was 92 and for teen/child questionnaires was 85.

Conclusion

“On-top plasty” is a reliable approach for the reconstruction of duplicated thumb in which neither thumb possesses adequate distal and proximal components.

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