

## New Concept for Five Digit Hand Reconstruction for Congenital Thumb Hypoplasia

*Dzintars Ozols<sup>1</sup>, Jānis Zariņš<sup>1</sup>, Aigars Pētersons<sup>2,3</sup>*

<sup>1</sup>*Rīga East Clinical University Hospital, Microsurgery Centre of Latvia,  
Department of Hand and Plastic Surgery, Latvia*

<sup>2</sup>*Children's Clinical University Hospital, Latvia*

<sup>3</sup>*Rīga Stradiņš University, Latvia*

**Introduction.** The congenital thumb hypoplasia manifests itself as patient's disability with lack of functions, poor cosmetics and significantly impacted quality of life in the future. Pollicization is a method of choice for Tonkins type IIIa, IIIb, IV and V. Though, in some cases to preserve a five digit hand and maintain function, toe to hand transplantation is preferred. Main problem is stability of carpometacarpal (CMC) joint, there are no surgical techniques for toe to hand transplantation with CMC reconstruction.

**Aim, Material and Methods.** A total of 3 patients were operated in the Microsurgery Centre of Latvia with thumb hypoplasia type IIIB and hand aplasia. New technique – metasophalangeal joint chondrodesis (arthrodesis) were used for toe to hand transplantation for thumb hypoplasia grade IIIB-V.

**Results.** The functionality for both evaluated thumbs were good – DASH 42 and 45. Grasp and pinch possible with stable CMC joint. Patients are very satisfied for the thumb VAS 15 and 20 points. Less satisfied results were for the deformity after radial club hand reconstruction.

**Conclusions.** There are no doubts for CMC (carpometacarpal) stability without ligament reconstruction, it looks like paediatric patients can make stable pseudo joints. Stable thumb can be achieved even without trapezium bone. The results for 5 digit hand reconstruction in radial club hand patients is very difficult to predict, but in our case the results are satisfactory.