

Pediatric Hook Nail Deformity Correction with Homodigital Island Flap

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INTRODUCTION:

Hook nail deformity is usually a complication of fingertip injury due to loss of soft tissue or bony support underneath the nail bed, causing the nail bed to curve volarly to assume a hooked appearance. In many instances, hook nail deformity causes loss of function, aesthetic concern, and pain.

REPORT:

A 7 years old girl, with no medical illness, presented to our outpatient clinic complaining of chronic right middle finger deformity after a burn injury when she was one years old. Mother was concerned about the appearance of the finger and the child not being able to fully extend her right middle finger. On examination, the child's right middle finger is shortened, hook nail deformity noted, range of movement of PIPJ restricted due to palmar scar tissues. X-ray of the right middle finger showed distal phalanx though present appears shortened.

The child underwent contracture release and surgical correction of hook nail deformity. Intraoperatively, the nail bed was released completely from the underlying distal phalanx, excess nail plate and nail bed trimmed and nail bed was repositioned to an upright position. An axial K-wire was inserted to splint the nail bed in the correct position. Volar scar tissues was removed and an island flap of the same digit was used to cover the defect as well as to provide soft tissue coverage and support to the newly reconstructed nail bed. At post op 2 weeks, flap survival was good.

DISCUSSION:

Hook nail deformity correction surgery was first described in 1983 by Atosoy et. al.¹ and was called the "Antenna" procedure. In the original procedure, a cross finger flap is used but over the years there have been literatures describing the use of free flaps, reverse island flaps and even neurovascular osteocutaneous flaps. Some

even use bone grafts for additional bony support. Peker et. al.² conducted a study of hook nail deformity correction using homodigital reverse flow island flap in 11 patients. All patients showed good flap survival and functional outcome at 6 months follow up. Literature on surgical correction of hook nail deformity among pediatric group is still lacking.

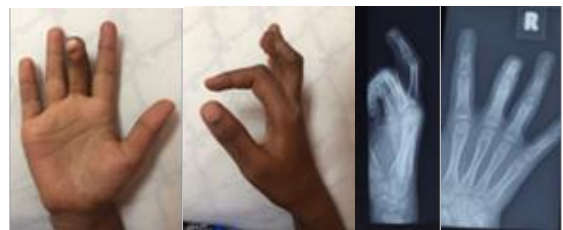


Figure 1: Pre-operative clinical photos and radiographs of right middle finger



Figure 2: Post-operative correction of hook nail deformity with homodigital island flap

CONCLUSION:

Hook nail deformity can be debilitating. Correction of hook nail with homodigital island flap is a feasible and effective alternative option to cross finger flap, however longer term follow up and more studies especially among the paediatric group is needed.

REFERENCES:

1. Atosoy et. al., *The "Antenna" Procedure for "Hook-Nail" Deformity*, J Hand Surg Am. 1983 Jan;8(1):55-8.
2. Peker et. al., *Correction of Hooked-Nail Deformity by Homodigital Reverse Flow Island Flap*, Marmara Medical Journal 2001;14(1):27-30.