

# Open Extended Carpal Tunnel Release In Ulnar Longitudinal Deficiency Limb: A Case Report

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## INTRODUCTION:

Ulnar longitudinal deficiency is rare, accounting for only 1 per 100,000 births worldwide. Most patients with this condition are highly functional until adulthood. To the best of our knowledge, there were only 3 case reports discussing carpal tunnel syndrome in adult with congenital hand deformities<sup>1,2,3</sup>. We present a rare case of carpal tunnel syndrome in an adult with pre-existing ulnar longitudinal deficiency of upper limb.

## CASE PRESENTATION

A 50-year-old lady presented to Hand & Microsurgery Clinic with paraesthesia over right hand for one year. Clinical examination revealed complete absence of right ulnar two rays and digits, with duplicated right thumb. She had phocomelia over left upper limb, with only arm and rudimentary digits. She had decreased sensation over all three digits of right hand, with thenar muscle wasting. Tinel's sign and Durkan's compression test were positive. Nerve conduction study was consistent with severe carpal tunnel syndrome. She subsequently underwent open carpal tunnel release of right hand under general anesthesia. Extended volar incision was made over carpal tunnel in line with ulnar border of right index finger. Transverse carpal ligament was found thickened and carefully divided. The median nerve was identified more radial than initially anticipated. The nerve had been compressed within the tunnel resulting in an hour-glass constriction of the nerve. Postoperatively, patient reported improvement in her symptom and was satisfied with the outcome of the surgery.



Figure 1: Hand antero-posterior and oblique radiographs showed distal ulna hypoplasia, absence of ulnar 2 digital rays, duplicated distal phalanx right thumb (Wassel 1), and hypoplastic trapezium and scaphoid, with extensive carpal coalition

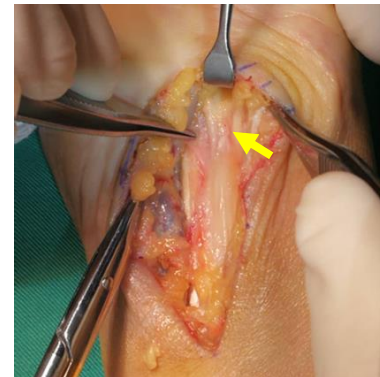


Figure 2: Median nerve was found to be radial to the incision, and had an hour-glass constriction (yellow arrow) from chronic compression in the carpal tunnel

## DISCUSSIONS

Carpal tunnel syndrome is not a recognized complication from ulnar longitudinal deficiency limb, albeit possibility of reduced volume and size of carpal tunnel causing the high likelihood of the syndrome to occur<sup>3</sup>. Our patient solely depended on her right hand to function, which may have contributed to worsening of her symptoms. In addition, the patient had associated hypoplastic carpal bones with extensive carpal coalition, which possibly resulted in a smaller cross-sectional area of the tunnel<sup>2,3</sup>. General anesthesia was strongly considered over local anesthesia in view of anticipated extended incision to visualize anomalous anatomy.

## CONCLUSION:

Assessment of carpal tunnel syndrome in patients with congenital hand deformities requires vigilant evaluation of the likely anatomical abnormalities of the carpal tunnel and median nerve. We advocate general anaesthesia, extended exposure of the surgical incision and a heightened vigil in the identification of the median nerve and other relevant anatomical structures.

## REFERENCES:

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