Congenital hypoplasia of the extensor tendons of thumb and fingers: A case report

Introduction

Congenital hypoplasia of extensor tendons of thumb and fingers was rarely reported in clinical fields. It is very difficult to treat congenital hypoplasia of extensor tendons because of difficulty in reconstruction of very attenuated extensor tendons. To achieve successful results with surgery, careful preoperative examination or evaluation must be required before surgery. In this case, we report the case of congenital hypoplasia of the extensor of thumb and fingers and present the surgical procedure and clinical results.

Case Presentation

A 9-year-old female patient had difficulty in extending thumb and fingers and gripping with right hand. She showed clasped deformity of right thumb with narrowed 1st web and thenar muscle hypotrophy. Fingers also showed difficulty in extending 2nd to 5th metacarpophalangeal (MP) joints and ulnar deviation. In preoperative sonograph findings, very attenuated extensor tendons were observed.

1st operation

First, to improve thumb abduction, opponensplasty with abductor digiti minimi (ADM) (Huber operation) and 1st web release by Z-plasty were done.

2nd operation

Nine-months later, to improve extension of thumb and fingers, tendon transfer of brachioradialis (BR) to EPL with plantaris tendon graft and extensor carpi radialis longus (ECRL) to attenuated EDC were done as 2nd stage operation. Hypoplastic and fibrotic changes of the extensor muscles of all fingers and thumb (extensor pollicis brevis (EPB), extensor pollicis longus (EPL), abductor pollicis longus (APL), extensor digitorum communis (EDC)) were observed during operation.

Discussion

Pathogenesis of congenital hypoplasia or aplasia of the extensor tendons is failure of the radial nerve to innervate the extensor muscles and this affects to APL, EPB or EPL muscles and EDC, extensor indicis proprius (EIP) and extensor digiti minimi (EDM) muscles. The wrist extensors are usually preserved. Our patient had very weak and less developed attenuated EDC and EPL tendons and fibrotic muscle, so we preferred transfer of ECRL tendon to EDC rather than using flexor carpi radialis (FCR) tendon.

Conclusion

In this case of congenital hypoplasia of the extensor tendons of thumb and fingers, our two staged operations made good clinical results.