Congenital Familial Clinodactyly of Index Finger with Proximal Delta Phalanges and Ulnar Deviation

Alpay Duran¹ Tuğba Dindar¹ Soysal Bas¹

¹Department of Plastic, Reconstructive and Aesthetic Surgery, Sanliurfa Mehmet Akif Inan Training and Research Hospital, Sanliurfa, Turkey

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Address for correspondence Alpay Duran, MD, Department of Plastic, Reconstructive and Aesthetic Surgery, Sanliurfa Mehmet Akif Inan Training and Research Hospital, Sanliurfa, Turkey (e-mail: dr.alpayduran@hotmail.com).

Congenital clinodactyly can occur in familial, syndromic, or sporadic forms.¹ The majority of familial cases of clinodactyly are inherited as an autosomal dominant trait, and involvement of the index finger with ulnar deviation is extremely rare. A 4-year-old girl presented to the plastic surgery clinic for evaluation of bilateral index finger deformities. There was substantial overriding of the second and third digits (►Fig. 1A, B). Physical examination revealed marked ulnar deviation of the bilateral index fingers originating at the angulated proximal phalanx, as well as mild radial deviation

of the bilateral fifth digits. While the patient's mother was phenotypically normal, the patient's maternal grandmother had index finger clinodactyly.

Clinodactyly characteristically presents as radial angulation of the little finger and is more common in males. The thumb and ring finger are the next most frequently affected fingers. Clinodactyly of the index and middle fingers is relatively uncommon. Clinodactyly of the index finger is known to occur in sporadic, familial, or syndromic forms, such as Mohr-Wriedt brachydactyly and Trevor's disease. It is most often caused by a triangular or trapezoidal-shaped delta middle phalanx.² In the delta phalanx type of clinodactyly, the epiphysis has an abnormal shape extending along one side of the bone.³ Al-Qattan reported congenital sporadic clinodactyly of the index finger that was unilateral in all cases, and the abnormal bone was the middle phalanx in eight patients and the proximal phalanx in two patients.⁴ The angulation of the index finger was toward the radial side in all patients. However, the angulation of the index fingers was toward the ulnar side and the angulation of the little fingers toward the radial side in our case. Albright et al reported the first case of familial, congenital clinodactyly affecting the bilateral long finger proximal phalanges of a 16-month-old male child. In this report, mild ulnar clinodactyly of the bilateral second digits also was presented.⁵

Numerous surgical techniques have been described, with the majority involving wedge osteotomy (opening, closing, or reverse). In 1987, Vickers described physal bar resection and interposing fat graft (physiolysis).⁶ Encouraging results were reported with this technique, although one patient, aged 12 at the time of surgery, required an osteotomy to correct residual deformity. Al-Qattan, in a review of sporadic clinodactyly of the index finger, advocates Vickers' physiolysis as early as possible for patients presenting in the first 5 years of life.⁴ Recently, Bednar et al reviewed the previous data and advised Vickers' procedure

Fig. 1 (A) Anterior view of the case with bilateral overriding of the second and third digits. (B) Anteroposterior X-ray of index finger clinodactyly with proximal delta phalanges.

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for patients between the ages of 2 and 6 years with more than 30 degrees of deviation.⁷

In conclusion, the patient in this case will require and receive physeal bar resection and interposing fat graft with a soft tissue lengthening procedure for the shorter sides to manage her deformity.

Conflict of Interest

None.

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