

IMAGES**A child with type I ulnar ray deficiency**

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Fig. 1. Clinical photograph of the left hand. The index finger was present in the form of central polysyndactyly, and the ring and little fingers were absent.

Ulnar ray deficiency is the least common type of congenital longitudinal deficiency, and it shows several distinct manifestations, including various finger deformities [1].

To date, no reports have been published describing ulnar ray deficiency with multiple finger deformities, including central polysyndactyly, ectrodactyly, and first-web space narrowing. We describe the case of a patient with type I multiple-finger deformities.

A 6-year-old girl had a shorter left arm and 3 digits, with central polysyndactyly on her left hand (Fig. 1). The radiographic findings are presented in Fig. 2. The extra digit interfered with her ability to grasp and pinch, and she was only able to use the thumb and middle finger for these purposes. Therefore, excision of the non-functional index finger was performed, and the web space was reconstructed to improve the range of motion (Figs. 3, 4).

At 1 year postoperatively, her index finger still had limitations of motion and joint function, and power had not recovered. She usually used her thumb and middle finger to grab, pinch, and grip (Fig. 5).

Although the appropriate treatment of ulnar ray deficiency is not clear-cut, previous studies have emphasized the importance of operating upon hand deformities to improve functionality, and it has been stated that syndactyly should be released between 6 and 12 months of life [2,3]. In this case, the patient's index finger did not have normal anatomy, and the operation was delayed until 6 years of age. At that



Fig. 2. Radiograph of the left extremities. The supernumerary digit on the index finger had a short proximal and distal phalanx and only the head of the metacarpal bone. The hamate, pisiform, triquetrum, and lunate were absent.

time, it could be conducted in a way that would not affect her finger movement. Based on this case, the timing of surgical treatment of complicated hand deformities should be planned carefully in order to maximize function.

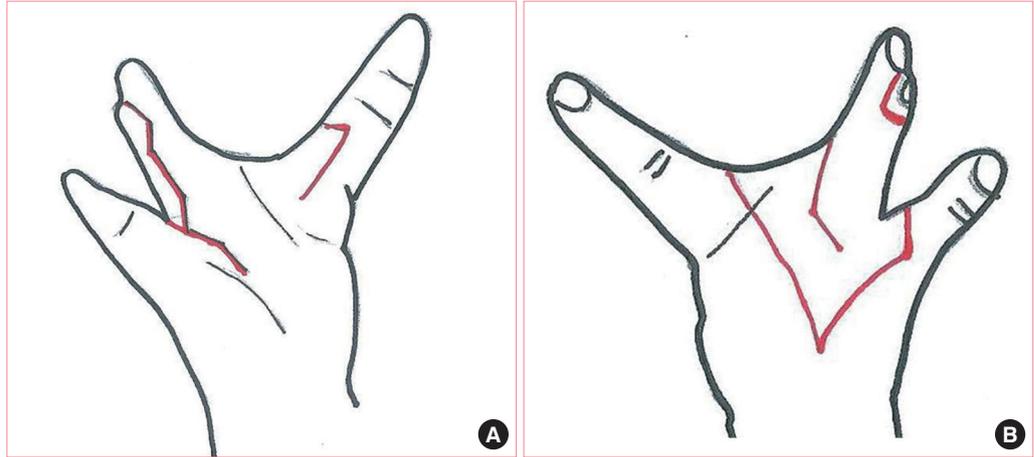


Fig. 3.
Operative design for reconstruction of web space and correction of syndactyly.

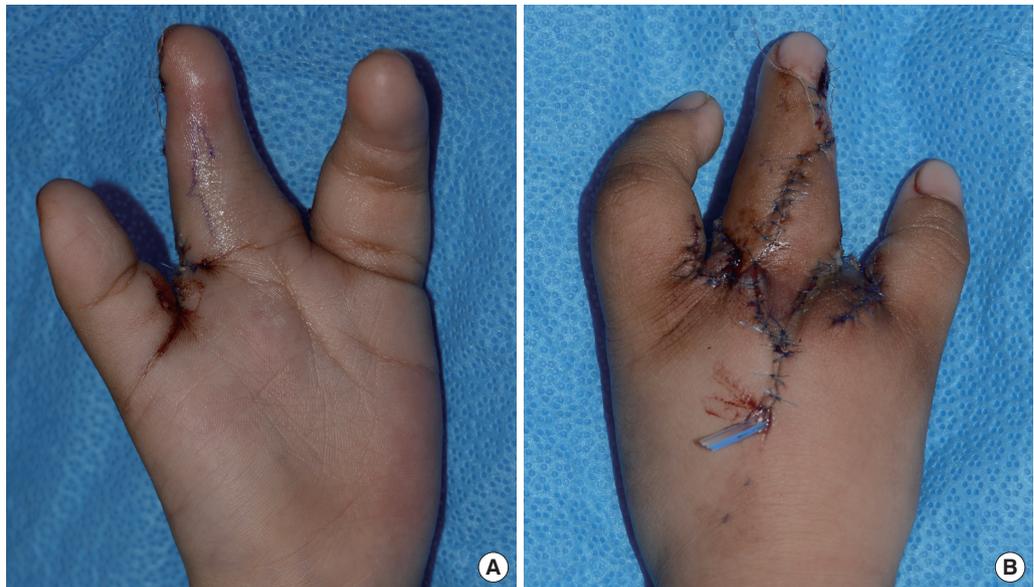


Fig. 4.
Findings at 1 day postoperatively. (A) Palmar side and (B) dorsal side.

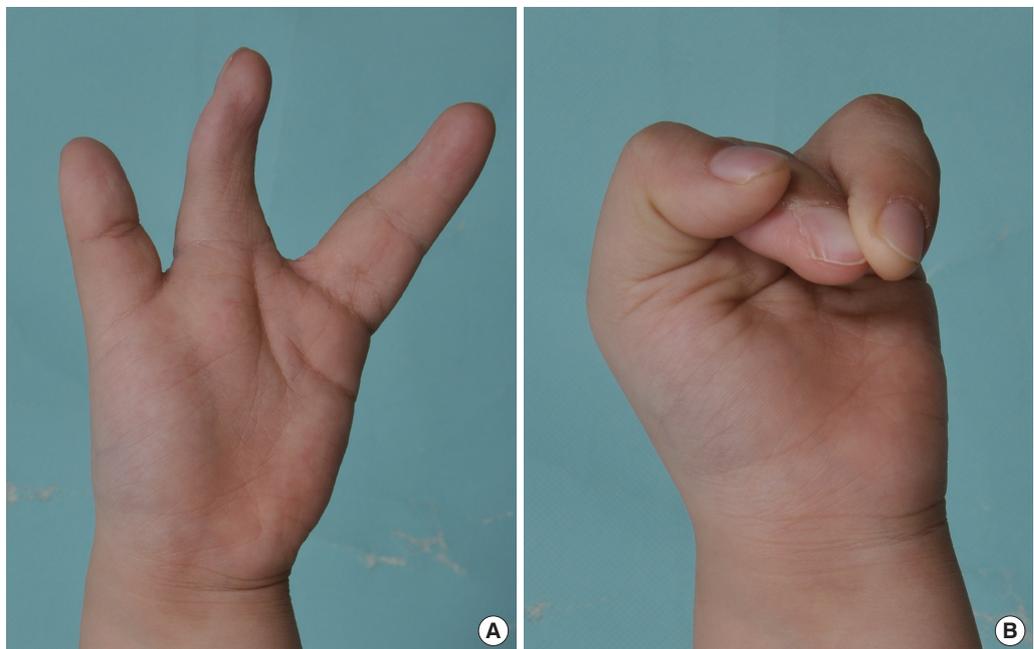


Fig. 5.
Findings at 1 year postoperatively. (A) Resting position and (B) grasping position.

Notes

Conflict of interest

No potential conflict of interest relevant to this article was reported.

Ethical approval

The study was performed in accordance with the principles of the Declaration of Helsinki. Written informed consent was obtained.

Patient consent

The patients provided written informed consent for the publication and the use of their images.

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Early definitive treatment of partial-thickness alkali burns with tangential excision and biobrane

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Copious irrigation, early tangential excision, and dressing are standard treatments for alkali burns [1]. Biobrane is a biosynthetic dressing widely used for partial-thickness burns. However, its use to treat alkali burns has rarely been discussed in the literature.

A 34-year-old male suffered a partial-thickness alkali burn caused by accidental paint solvent spillage (Taxite 4000, pH 10) over his face, neck, chest, and hand (11% of total body surface area). Immediate hourly copious irrigation was commenced before a same-day operative scrubdown.

After intraoperative irrigation and scrubbing with neutralizing chlorhexidine gluconate 4% liquid soap (pH 5.0–6.5), only the upper limbs were still alkaline (Fig. 1). Hence, we proceeded with ultra-thin tangential excision and debridement over the right upper limb until a litmus test indicated a neutral pH.

Biobrane was applied onto the dry clot-free wound bed with sterile Hypafix (Fig. 2). The Biobrane adhered well, was sequentially trimmed, and the wound was exposed by postoperative day 12. The right arm healed by 1 month postoperatively (Fig. 3). Minimal scars were present, only on the medial portion of the right hand, at a 1-year follow-up (Fig. 4).

After continuous irrigation, debridement via the

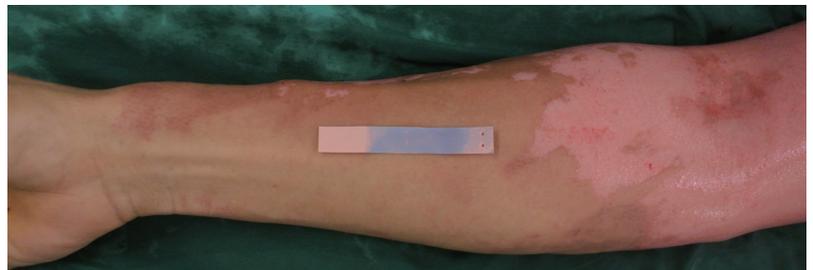


Fig. 1. Superficial alkali burns of the upper extremity. The litmus test was mildly alkaline after irrigation and a surgical scrubdown.



Fig. 2. The burnt area was tangentially excised with a Zimmer air dermatome set to 18/1,000 cm. Punctate bleeding was observed, and the litmus test showed a neutral pH. Biobrane was applied in the standard fashion.