

Desyndactylization of Simple Complete Syndactyly of Great Toe and Second Toe: Case Report and Operative Technique

Vishal Jain¹, Shailendra Gupta², Kuldeep Malik³

1–3 Department of Orthopaedics, ESI Hospital, Rohini, Delhi, India

Abstract:- Syndactyly is a condition in which the digits are abnormally wedged, either congenital or acquired. I'm going to present a case report on how K wires and a mini external fixator were used to desyndactylize webbed great and second toes, as well as methods for anatomic correction, skin coverage, and tension-free closure. A split-thickness skin graft from the posterior thigh of the ipsilateral leg is used with a mini external fixator in this case because the syndactyly is congenital, simple, and complete.

Keywords:- Syndactyly; Syndactylism; Desyndactylization; Split thickness skin graft; mini Fixator.

I. INTRODUCTION

Syndactyly of the Toes is a congenital condition characterized by the fusion of the bone or skin in the foot digits. They are two types simple if soft tissue only and complex if bony fusion is present. Symptoms usually painless with cosmetic concerns only.

II. CASE REPORT

syndactyly is congenital, simple, and complete.

The metatarsophalangeal joint and conjoined great and second toes of a 22-year-old female's right foot caused her slight pain. Her webbed toes are causing her cosmetic discomfort. Webbing of the great and second toes of the right foot was discovered on physical examination, extending beyond the distal interphalangeal joint.

No bone fusion of the syndactylized toes was found on radiographs of the right foot (Figure 2). Desyndactylization of the great and second toes is chosen by the patient.

The surgery was performed under a spinal anesthetic. For desyndactylization, a thigh tourniquet was inserted and inflated to 250mmHg.

A No.15 blade is used to make a full-thickness incision into the skin. Dissecting scissors were used to accomplish sharp and blunt dissection of the subcutaneous tissues, and care was given to avoid the neurovascular bundles by staying midline until the toes were entirely separated (Figure 3). The k wire and mini external fixator were used to divide the great toe and the second toe, and the k wires were introduced into the soft tissue after a quadrangular flap was incised for webspace generation (Figure 4).

The skin graft, which was obtained from the posterior part of the thigh, was fixed without tension using a stapler after washing the recipient site with abundant sterile normal saline. Non-adherent gauze and a mildly compressive overlaying dry dressing were used to dress the surgical sites. The patient was told not to put any weight on the surgery location for some time. At six weeks after surgery.

III. CONCLUSION

Longitudinal separation of the digits with split-thickness skin grafting from the posterior portion of the thigh offers good outcomes for the repair of simple complete syndactyly of the toes. With this technology, proper web space anatomy is possible. A template can be used to guarantee adequate graft coverage before graft harvest.

IV. DISCUSSION

The failure of fingers or toes to separate during development, resulting in webbed digits, is known as congenital syndactyly. Syndactyly can also be acquired, for example, as a result of a burn injury. Davis and German defined syndactylism as complete or incomplete, and simple or difficult, based on the distal degree of webbing between the digits [5]. Syndactyly is straightforward when the phalanges are typical in size, shape, number, or arrangement, but it is hard when they are abnormal in size, shape, number, or configuration [5].

Our case is an example of simple full syndactyly, which necessitates a bigger graft size than incomplete syndactyly but does not necessitate osseous treatment. This patient displays type Ia of congenital syndactyly, which accounts for 70% of non-syndromic syndactyly according to a modified Temtamy and McKusick scheme [4]. Desyndactylization of simple syndactyly can be accomplished using a variety of techniques.

To provide coverage for the commissure, most described approaches use the skin of the conjoined digits and the skin just proximal to the webspace. To avoid longitudinal scar contracture, which can lead to digital malformation, zigzag patterns are most commonly used for these types of corrections. The suggested method of employing a split-thickness skin graft from the posterior thigh with direct longitudinal separation of the digits using K wire and mini fixator is preferable in the foot due to less tension on the wound at the site of correction. While donor site morbidity is a risk with this procedure, it is mitigated by the excess skin that is generally found on the back of the thigh.

Additional Information Disclosures Human subjects: Consent was obtained or waived by all participants in this study. **Conflicts of interest:** In compliance with the ICMJE uniform disclosure form, all authors declare the following: **Payment/services info:** All authors have declared that no financial support was received from any organization for the submitted work. **Financial relationships:** All authors have declared that they have no financial relationships at present or within the previous three years with any organizations that might have an interest in the submitted work. **Other relationships:** All authors have declared that there are no other relationships or activities that could appear to have influenced the submitted work.

ACKNOWLEDGEMENTS

We would like to acknowledge Dr. Rachita Viswas, Medical Superintendent, ESIC Hospital Rohini, Delhi, for their support and guidance.

REFERENCES

- [1.] Chang TJ. Master techniques in podiatric surgery: The foot and ankle. Philadelphia: Lippincott Williams & Wilkins. 2012.
- [2.] Anderson JJ, Spencer LK, Rowe GP, Fowler Z. Pediatric desyndactyly. Poster: Pediatric-desyndactyly. 2017.
- [3.] Brodland DG, Pharis DB, Bologna JL, Jorizzo JL, Schaffer JV. Dermatology. Philadelphia: Saunders. 2012.
- [4.] Malik S. Syndactyly: phenotypes, genetics, and current classification. Eur J Hum Genet. 2012;20(8):817-24.
- [5.] Davis JS, German WJ. Syndactylism coherence of the fingers or toes. JAMA Surg. 1930; 21(1):32-7meÚ

FIGURES



Fig. 1: Webbing of the great and Second toes



Fig. 2: Radiographs of the right foot confirmed no bony fusion of the syndactylized toes



Fig. 3: Dissection through the subcutaneous tissues



Fig. 4: k wire and mini fixator were used to separate the great toe and the second toe with a Split thickness skin graft