

Nail bed expansion: A new technique for correction of multiple isolated congenital micromyelia

Gholamhossein Ghaffarpour¹, Alireza Faghihi², Mohammadreza Ghasemi³, Gelareh Ghaffarpour^{1,2}

¹Skin and Stem Cell Research Center, Department of Dermatology, Tehran University of Medical Sciences, Tehran, Iran, ²Skin Diseases and Leishmaniasis Research Center, Department of Dermatology, Isfahan University of Medical Sciences, Isfahan, Iran, Department of Dermatology, Rasoul-e Akram Hospital, Iran University of Medical Sciences, Tehran, Iran, ³Department of Dermatology, Ahvaz Jundishapur University of Medical Sciences, Ahvaz, Iran

Abstract

Congenital micromyelia may involve big toes or may involve other nails. The etiology of micromyelia is not clear but amniotic bands, teratogens (drugs, alcohol), Nail Patella Syndrome etc. A 44-year-old woman with multiple isolated congenital micromyelia over her hands and feet was selected. The major affected nails were thumbs and Index fingers. Surgical method were done step by step: Anesthesia of the area, extraction of short nail, elevation of nail bed, longitudinal nail bed incisions, suturing the lateral nail bed to the nail wall, covering the nail bed by a splint of plastic suction tube, bandage with gauze Vaseline. Finally, we hypnotized that in congenital micromyelia, the main pathology is in nail bed; through this theory by nail bed expansion better outcomes are coming.

Key Words: Nail bed expansion, congenital micromyelia, treatment

Address for correspondence:

Dr. Alireza Faghihi, Skin Diseases and Leishmaniasis Research Center, Isfahan University of Medical Sciences, Isfahan, Iran. E-mail: faghihi.ali@gmail.com

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INTRODUCTION

Congenital micromyelia may involve big toes or may involve other nails. Historically, nail dysplasia involving index finger associated with corresponding terminal phalanx bifurcation named Iso-kikuchi syndrome dominantly affected along with a sign of micromyelia.^[1] The etiology of micromyelia is not clear but amniotic bands, teratogens (drugs, alcohol), Nail Patella Syndrome, epidermolysis bullosa, ectodermal dysplasia, Door syndrome, and Iso-kikuchi syndrome

are suggested as causes of congenital anonychia/micromyelia.^[2]

Since now, no definitive treatment has been suggested for the above case, by now we introduce the only and the first fundamental cure for isolated micromyelia, although, there was several conservative methods such as using covering short nails by preformed plastic nails and sculptured nails, but these methods temporarily satisfied patients. The case that was operated by our team, suffered from micromyelia in seven nails [Figures 1 and 2].

CASE REPORT

The case we present here is about a 44-year-old woman with multiple isolated congenital micromyelia over in her hands, and feet was selected. The major affected nails were thumbs and Index fingers. There were no associated findings, especially skeletal ones in paraclinical examinations and the patient had no family

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Figure 1: Thumb nails after surgery

history of the same disease. She had been experienced the dystrophic changes from 2 years before. Radiography of the fingers was done in two perpendicular sections before surgery. Patient has taken Cephalexin 500 mg/qid during 10 days after surgery.

After preparation of the thumb with 2% povidoneiodine, a digital nerve block was performed by the combination of 2/5 cc of 2% lidocaine and 2/5 cc of 0.25% bupivacaine. Proximal and lateral nail folds were separated from the nail plate. The nail plate was released and extracted from nail bed gently, by three parallel incisions in the lateral nail grooves and one incision from beneath and distal nail bed to the distal margin of distal nail matrix, the nail bed was elevated from distal phalanx bone, permitted us to use curettage for modification of possible uneven distal phalanx abnormality. For maximum expansion of nail bed, we made two or three incisions through the nail bed longitudinally parallel to lateral nail folds, the distal fibrous and keratinized nail bed was excised by means of scissors. The lateral parts of expanded nail bed were sutured to lateral nail walls laterally and distal tip of finger. Finally, a transparent splint of an aspiration tube was placed under the proximal nail fold and over the nail bed, then it was sutured to lateral nail walls. The thumb was dressed by gauze Vaseline and left untouched for 48 h, after that, the wound was dressed daily for 2 weeks. By the end of 2nd week the splint and all sutures were removed. Patient was educated to tolerate her condition carefully for about 1 year. At the end of the follow-up period, the surgery achievement was evaluated excellent both by the patient and other dermatologists. Based on patient satisfaction, same techniques were used to modify other nails.



Figure 2: Operated thumb nails after 1 year

DISCUSSION

As known many surgical methods have been introduced to modify nail conditions, results were highly variable. Until date, no efficient therapy is available for treatment of micronychchia. The technique illustrates combination of previous accepted methods to achieve the best possible outcome.^[2] Use of incision in nail bed and excision of fibrous tissue opened a new horizon to future of nail deformity correction. Placement of a splint of aspiration tube entailed efficient support for new nail bed recovery.^[1,3] By the end of 18 months follow-up, no recurrence was spotted. Before surgery, it was assumed that micronychchia, defects in nail matrix as well as nail bed, is not curable. However by the end of surgery follow-up period, results of operation obviously changed the prediction. Now we proposed that nail bed cells have potentiality to generate new nail matrix cell. Furthermore, we hypnotized that in congenital micronychchia, the main pathology is in nail bed; through this theory by nail bed expansion better outcomes are coming.

REFERENCES

1. Hatoko M, Iioka H, Tanaka A, Kuwahara M, Yurugi S, Niitsuma K. Hard-palate mucosal graft in the management of severe pincer-nail deformity. *Plast Reconstr Surg* 2003;112:835-9.
2. Ghaffarpour G, Tabaie SM, Ghaffarpour G. A new surgical technique for the correction of pincer-nail deformity: Combination of splint and nail bed cutting. *Dermatol Surg* 2010;36:2037-41.
3. Ozawa T, Yabe T, Ohashi N, Harada T, Muraoka M, Ishii M. A splint for pincer nail surgery: A convenient splinting device made of an aspiration tube. *Dermatol Surg* 2005;31:94-8.

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