

Application of Varied Techniques in the Treatment of Chronic Paronychia

Rogério Nabor Kondo^{1#}, Eldislei Miotto^{2#}, Jéssica Pagan Faria^{2#}, Gabriele Harumi Seko^{2#} and Airton dos Santos Gon^{1#}

¹M.D., Dermatologist, Professor of the Dermatology Discipline of the Medicine Course at the State University of Londrina - Paraná (PR), Brazil

²MD, Resident of Dermatology at the University Hospital of the State University of Londrina - Paraná, Brazil

[#]Department of Clinical Medicine, Dermatology Service of the University Hospital of the State University of Londrina - Paraná (PR), Brazil

***Corresponding author:** Kondo RN, M.D., Dermatologist, Professor of the Dermatology Discipline of the Medicine Course at the State University of Londrina - Paraná (PR), Brazil, Tel: 55 43 99972-5668; E-mail: kondo.dermato@gmail.com

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Abstract

Chronic paronychia is an inflammation of one or more nail folds with hypertrophy of the nail folds and onychodystrophy. There are several techniques described for its surgical approach. They differ in the amount of tissue excised and the removal or preservation of the nail plate. We present three surgical options for the treatment of chronic paronychia (wide excisions, superficial tangential excisions and electrodesiccation) with good aesthetic and functional results.

Keywords: *Chronic paronychia; Nail diseases; Nail surgery*

1. Introduction

Chronic paronychia (CP) is an inflammation of one or more nail folds, lasting more than six weeks [1]. This condition is considered an occupational dermatosis, occurring preferentially in women who expose themselves to immersing their hands in water and dealing with irritants, such as, for example, maids, cooks and housewives [1].

Clinically, hypertrophy of the proximal and lateral folds, absence of cuticle and onychodystrophy are observed. Colonization by bacteria and fungi is observed, mainly *Candida sp*, which can lead to secondary changes in the nail plate [2,3].

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Indications for surgical treatment of CP include disease duration of more than six months and lack of response to topical or intralesional treatment [4]. The surgical approach helps to remove chronically inflamed tissue fibrosis, aiding drug penetration and cuticle growth, reestablishing the necessary protection to avoid secondary infections [1].

There are several techniques described, which differ in the amount of tissue excised and the removal or preservation of the nail plate. We report two cases in which three surgical techniques were used to treat CP, with satisfactory results.

2. Case Reports

Patient 1: Male, 67 years old, with CP on the 2nd and 3rd fingers of his left hand (FIG. 1A). He underwent minimally invasive surgery, on the 3rd finger of the left hand, with minimal tangential and superficial excision without removal of the nail plate (FIG. 1B) and more radical and wider surgery, with larger block excision of the nail fold including removal of the nail plate of 2nd finger (FIG. 2B).



FIG. 1. (A) Patient 1 with CP in the 2nd and 3rd fingers of the left hand. (B) Detail of discrete tangential (oblique) excision of the 3rd finger of the left hand.



FIG. 2. (A) Patient 1 with CP on the 2nd finger of the left hand. (B) Detail of excision and removal of the nail plate. (C) Six months after surgery.



FIG. 3. (A) Patient 1 with CP on the 2nd and 3rd fingers of the left hand. (B) Six months after surgery.

Description of the superficial tangential (oblique) excision technique:

- a) Supine position;
- b) Topical antiseptics with 10% povidone-iodine;
- c) Placement of surgical drapes;
- d) Truncal anesthesia with 2% lidocaine without vasoconstrictor;
- e) Placement of a tourniquet;
- f) Excision of the proximal nail fold in the shape of a half-moon, with a tangential and superficial oblique incision without removing the nail plate (FIG. 1B)
- g) Removal of the tourniquet;
- h) Compressive dressing.

Description of the larger block (perpendicular) excision technique:

a-e of the previous description

- f) Excision of the proximal and lateral nail fold in the shape of a half-moon, with an oblique incision and removal of the nail plate using a number 15 scalpel blade (FIG. 2B);
- g) Removal of the tourniquet;
- h) Compressive dressing.

Patient 2: Female, 55 years old, with CP on the 3rd finger of the left hand who underwent electrodissection without nail removal (FIG. 4A and 4B).

Description of the electrodissection technique:

a-e of the first description

- f) Excision of the proximal nail fold in a half-moon shape, with a straight knife electrode, in cutting mode and power 15 with an electronic scalpel (Wavetronic® 5000 Digital) with an oblique incision at 45° to the nail fold, without removing the nail fold (FIG. 2B);
- g) Removal of the tourniquet;
- h) Compressive dressing.



FIG. 4. (A) Patient 2 with CP in the 2nd and 3rd fingers of the left hand. (B) After excision by electrodesiccation at 45° to the nail fold.

3. Results

Both patients showed aesthetic and functional improvement after the surgical approach. FIG. 2 shows the result of patient 1 after six months of surgery and figure 5 shows the result of patient 2 after six months, with improvement in the nail plate.



FIG. 5. (A) Patient 2 with CP on the third finger of the left hand before and (B) after 6 months of surgery.

4. Discussion

Surgical techniques for correcting CP must be known and mastered by a dermatologist, as this is a good option for treating this onychopathy that is quite common in everyday life.

Several surgical techniques with variations have been described in the literature. Initially, in 1975 Keyser and Eaton suggested marsupialization of the eponychium, with removal of the dorsal surface of the proximal nail fold (PNF) through an oblique half-moon-shaped incision, maintaining the germinal matrix, without removing the nail plate, with compressive hemostasis and healing by secondary intention [3].

In 1981, Bednar et al and Baran et al described the technique of en bloc or perpendicular excision of the PNF, which may be associated with nail removal in cases of concomitant irregularity [1].

There are no comparative studies that significantly demonstrate the superiority or disadvantages of one technique over another. Di Chiacchio et al, in 2009, evaluated 138 surgeries that used the Keyser and Bednar techniques, with good results using both methods [5].

The present authors propose a modification of the Keyser technique, obliquely removing the PNF with an electric scalpel in cutting mode instead of removing it cold with a scalpel blade, also maintaining the nail plate with an equally satisfactory result (FIG. 5).

5. Conclusion

In this report of two patients in whom three different techniques were used to correct CP, the good aesthetic and functional results obtained in all cases, regardless of the technique applied, demonstrate the importance of knowledge, on the part of the dermatological surgeon, of the various treatment options. Surgical treatment is available for each condition.

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