



# ACTAS Derma-Sifiliográficas

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## VIDEOS OF SURGICAL PROCEDURES IN DERMATOLOGY

### Chemical Matricectomy with Phenol<sup>☆</sup>

### Matricectomía química con fenol

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#### Description

Surgical matricectomy with phenol 88% is a simple technique first described by Boll<sup>1</sup> in 1945. It has a low morbidity and a high success rate (98%).<sup>2</sup>

Phenol is a colorless crystalline substance that is inactivated by light and by air (it must therefore be stored in an opaque or foil-wrapped container) and also by blood and alcohol. At concentrations over 80% it produces coagulation necrosis. For onychectomy, phenol is employed as an 89% aqueous solution.

#### Technique

First, proximal digital nerve block is performed by the injection of 2 mL of mepivacaine 2% without epinephrine into the lateral and medial aspects of the base of the digit.

After anesthesia, a nail cutter is used to cut the ingrown part of the nail plate to beyond the cuticle, 0.5 to 1 cm beneath the proximal nail fold. After cutting, rongeur forceps are used to pull on the nail fragment in order to separate the more proximal part completely from the nail bed to facilitate extraction of the triangular lateral matrix horn. Artery forceps may be used to probe beneath the proximal fold to confirm that there are no residual fragments of nail.<sup>3</sup>

After extraction of the fragment, a tourniquet is applied (Fig. 1) to prevent neutralization of the phenol by the blood

and the periungual skin is protected using sterile petrolatum (Fig. 2). Two or 3 ophthalmic sponges are then impregnated with phenol. Ophthalmic sponges are triangular and it is advisable to trim the ends a little to make them straight so that they penetrate completely into the proximal nail fold. The sponges are then introduced into the cavity of the lateral matrix horn and into the lateral nail fold (Fig. 3) and are left in place for 1 minute. The phenol is then neutralized with abundant isopropyl alcohol 70%.<sup>3,4</sup> This process is repeated a further 2 times. The procedure does not require incisions or suture.

#### Indication

- Ingrown nail.
- Pincer nail
- Onychogryphosis.
- Poor nail alignment.

#### Contraindications

- Absolute contraindication: Vascular disease of the lower limbs, particularly arterial disease.
- Relative contraindications: Pregnancy, age under 6 years, and soft tissue hypertrophy.

#### Risks

- Locally, phenol produces abrasions of the periungual skin. The risk can be reduced by protecting the skin with mupirocin ointment or petrolatum.
- The systemic absorption of phenol can be harmful to the kidneys and nervous system; it can be fatal. However,

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Figure 1



Figure 2

this risk is only relevant after the application of phenol to large areas. To date, no systemic complications have been reported secondary to the use of phenol for matricectomy.

### Benefits

- Matricectomy with phenol is a simple and inexpensive technique.



Figure 3

- Phenol has a potent analgesic and antiseptic action, leading to a very low risk of infection and minimal levels of postoperative pain.
- Several studies have demonstrated a lower risk of recurrence of the nail disorder (0.57%-11%) after treatment with phenol than after other therapeutic options (electrocoagulation).<sup>2,5</sup>

### Alternatives

Lateral matricectomy by electrocoagulation.

### Key Aspects

- Complete excision of the proximal part of the nail plate, hidden beneath the proximal fold, must be ensured in order to prevent recurrence.
- Trimming the ophthalmic sponges facilitates their introduction into the proximal subungual space and will lead to greater delivery of phenol to the matrix.
- The application of petrolatum will protect the periungual skin from the caustic effects of phenol.
- Ischemia of the digit will prevent neutralization of the phenol by the blood. The ischemia must not be maintained for more than 15 minutes.
- The phenol is neutralized by abundant lavage with alcohol 70°.
- The complete process consists of three 1-minute applications of phenol.

### Conflicts of Interest

The authors declare that they have no conflicts of interest.

### Annex. Additional material

The additional material for this article can be accessed at <http://dx.doi.org/10.1016/j.adengl.2012.11.009>.

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