

Surgical pearl: a novel and innovative chemical method for gutter splinting for early stage of ingrown toenails

Iran J Dermatol 2021; 24: 249-251

DOI: [10.22034/IJD.2021.136589](https://doi.org/10.22034/IJD.2021.136589)

Dear Editor,

An ingrown nail is accompanied by recurrent pain and swelling of the lateral nail fold of the great toenail in the active phase of life. It is due to the pressure and penetrative injury of the nail and its spicule on its soft, macerated nail gutter. There are many aggravating factors for ingrown nails. In addition to injury, the embedded nail acts as a foreign body, causing pseudo-pyogenic granuloma formation in the distal part of the nail gutter. If the ingrown nail is not initially treated well, it gives rise to severe disease^{1,2}. In the severe stage, there is pain and swelling at the site due to secondary bacterial infection and inflammation. Much preventive advice is available for ingrown nails. If preventive measures fail, then non-invasive treatments are provided, such as wedge resection of the nail, placement of dental floss, placement of cotton balls under the lateral nail plate, strapping of lateral nail folds, and polytube nail splinting of the ingrown nail to keep it apart from the nail gutter. In this way, the damage of the ingrown nail and associated lesions to the nail gutter is reduced. Likely, nail splinting is done palliatively, but all methods have certain problems and troubles³⁻⁵. In addition to this, it causes distress in both patients and doctors alike during the nail splinting procedure. Here, I advise a novel, non-invasive method of chemical splinting for the early stage of an ingrown nail.

First of all, the site and severity of pain and tenderness of the ingrown toenail are examined before the procedure is done. This is done by pressing the ingrown nail from the thumb and finger anteroposteriorly and laterally (Figure 1a,b). Subsequently, the site is made aseptic with betadine lotion and 70% alcohol. Following this, the nail gutter is debrided and cleaned on both sides (outer and inner sides of the ingrown nail) with a broken

or cut 16/18G hypodermic needle (Figure 1c). Here, cyanoacrylate glue is used for chemical splinting. First of all, 2 to 3 drops of cyanoacrylate glue are poured on the nail gutter's outer part. Then, the glue is withdrawn in a 1 or 3 ml syringe, and, with the help of the needle, glue is poured onto the inner part of the gutter in upright position of the toe (Figure 1d). The glue can be properly poured onto the inner part of the gutter directly through a glue container by applying outward pressure on the ingrown nail. Most of the glue trickles down from both sides of the nail onto the nail bed, and thus in this way, the nail gutter is sealed with glue. After the glue dries, pain is alleviated, with only negligible tenderness remaining over the site.

In our case, the patient was followed up at two-week intervals till 12 weeks. The glue was reapplied when it got dislodged. The patient was active during follow-up and carried out all kinds of routine activities without restrictions. Post chemical splinting, positive changes were observed at the site of the ingrown nail (Figure 1a-h). Thus, cyanoacrylate glue is a good option for splinting compared to polytube splinting and other methods for the early stage of an ingrown nail. Cyanoacrylate glue is an acrylic monomer that becomes very adhesive after drying, resembling hard plastic. It is hygroscopic in nature, so it absorbs the moisture of the nail gutter and protects the gutter from moisture and water. The glue also has antiseptic properties. After the glue dries, it takes the shape of the nail gutter under the nail, and it looks like a concave or saucer shape hard cast (resembling a small firm split polytube). The cast separates the ingrown nail from the nail bed/gutter and blunts and broadens the nail and its spicule, thereby reducing the pressure and penetration on its gutter [pressure (P) = force divided by area (F/A)]. In conclusion, chemical splinting of the ingrown nail and its gutter is a new, non-invasive,



Figure 1. (a-h) Changes can be seen in the ingrown toenail and chemical casts after chemical nail splinting.

and cosmetically acceptable technique for treating an early-stage ingrown nail and preventing its progression to the severe form.

Conflict of Interest: None deacleared.

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Received: 19 June 2020

Accepted: 18 July 2020

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