

ORIGINAL ARTICLE

Novel treatment using thioglycolic acid for pincer nails

Kikuzo OKADA,¹ Eijiro OKADA²

¹Okada Orthopaedic Surgery Clinic, and ²Department of Orthopedic Surgery, Saiseikai Central Hospital, Tokyo, Japan

ABSTRACT

The authors developed a novel treatment using thioglycolic acid (TGA) to chemically soften pincer nails. The objective was to describe a new treatment method for pincer nails by applying TGA to soften the nail and then fix it in the correct position. A total of 104 patients (nine men and 95 women; mean age, 56 years) with 106 pincer nails underwent our treatment. A small hole was made on the markedly incurvated side of the pincer nail, and a super-elastic wire was inserted into the hole and bent backwards; 5% TGA was then applied for 6–7 h prior to reduction. Favorable reduction was achieved in 66% of patients within 1 day of the procedure, in 30% within 2–4 days and in 4% 5 days or more later. No patient required surgery. No post-procedure infection, rash, continuous pain or nail cut out was evident. In eight cases, recurrences of nail deformity were observed within the 1-year follow-up period. Our novel method, which consists of administering TGA via a hole in the nail plate, is a useful treatment for pincer nails.

Key words: nail deformity, non-invasive methods, pincer nail, thioglycolic acid, treatment.

INTRODUCTION

Symptomatic pincer nails are commonly seen in outpatient clinics in clinical practice, representing a condition dealt with in fields extending from departments of orthopedics, dermatology and plastic surgery. Jemec *et al.*¹ reported that the incidence of pincer nail was 0.9% in a randomized population. In recent years, this condition has been encountered in various generations of individuals, ranging from the young to the elderly. Patients often have pain that interferes with their daily lives. Pincer nails have conventionally been treated by surgical procedures.^{2–9} However, some patients hesitate to undergo invasive surgical treatment because of the fear of invasion. More recently, non-invasive methods using super-elastic wire¹⁰ or formable acrylic treatments¹¹ have been developed; however, several months to a year are often required before a favorable reduction can be achieved with these treatments.

Therefore, a novel non-invasive method that would yield favorable reduction within a short period of time has been awaited. In this report, we describe the clinical data and outcomes of a newly developed treatment using thioglycolic acid (TGA).

METHODS

Between March 2003 and June 2009, we administered the new treatment to 104 consecutive patients with 106 pincer nails. All procedures were performed for the great toe. No finger case was included in the subjects. All cases were primary.

Recurrent/persistent cases were not admitted in this study. The subjects included nine men and 95 women aged 20–88 years, with a mean age of 56.3 ± 12.5 years. The mean follow-up period was 4.6 months, with a range of 2–12 months (Table 1). This study was approved by the institutional review board, and informed consent was obtained from all participants.

The method provides strong reduction and is indicated for thick pincer nails as well as nails that are too short. TGA acts by cleaving the disulfide bonds of the amino acid cystein in the nail protein molecule, thereby softening the nail.¹² Once TGA has been applied, nails become soft and easy to bend or curve backward, whereas nails that have not been treated with TGA remain stiff and difficult to bend (Fig. 1). Other implements necessary for treatment with this novel method include nail glue and nail repair powder for anchoring the wire and fixing the reduced nail, a wire measuring 0.50–0.55 mm in outer diameter, a drill bit measuring 0.8 mm in outer diameter and a nail retractor.

Procedural technique

We do not use local anesthesia for cases of simple deformity where a single wire is inserted from the distal edge (Fig. 2). In cases of severe deformity, where insertion of multiple wires on the proximal nail plate is required, a great toe digital block is sufficient for preventing pain during the procedure. The position of the proposed hole is marked on the lateral border of the nail. Considering the length of the nail plate, a hole is then drilled into the nail at one or two sites with a 0.8-mm drill bit. The authors use the autoclaved drill and drill the hole manually. A mortared drill is not used because delicate drilling is

Correspondence: Eijiro Okada, M.D., Ph.D., Department of Orthopedic Surgery, Saiseikai Central Hospital, 1-4-17 Mita, Minato-ku, Tokyo 108-0073, Japan. Email: eijiro888@gmail.com

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