

Techniques and Procedures



A NOVEL, SIMPLE METHOD FOR ACHIEVING HEMOSTASIS OF FINGERTIP DERMAL AVULSION INJURIES

Brian Wai Lin, MD

Department of Emergency Medicine, Kaiser Permanente, San Francisco, California and Emergency Department, University of California San Francisco, San Francisco, California

Reprint Address: Brian Wai Lin, MD, Department of Emergency Medicine, Kaiser Permanente, 2425 Geary Blvd., San Francisco, CA 94115

Abstract—Background: Distal fingertip pad dermal avulsion injuries can be challenging for emergency physicians. A common occurrence with these injuries is difficult-to-control bleeding. The nature of these wounds is such that conventional primary closure to achieve hemostasis is not feasible. Often, direct pressure, even for prolonged periods, will not adequately control the bleeding. Currently recommended techniques are inadequate to control bleeding, and commercially available hemostatic products may be more costly and not widely available. **Objective:** To present a simple method to achieve permanent hemostasis of these injuries using a tourniquet and tissue adhesive glue. **Procedure:** A tourniquet is placed around the proximal digit, and the digit is exsanguinated and elevated to achieve short-term hemostasis. Several layers of commercially available tissue adhesive glue are applied sequentially over the avulsed region of the digit and allowed to dry. The tourniquet is then removed. A clean, bloodless dressing is created over the avulsed fingertip. **Conclusion:** This technique provides a rapid, simple, and likely safe means to control bleeding from a fingertip dermal avulsion injury. © 2015 Elsevier Inc.

Keywords—fingertip avulsion; hemostasis; tissue adhesive glue

INTRODUCTION

The management of distal fingertip pad dermal avulsion injuries can be challenging for emergency physicians.

This is a common problem seen in emergency departments (EDs) and minor injury clinic settings, usually the result of chopping food in the kitchen and taking an accidental “slice” from an unprotected finger. Often, the distal pad of epidermis and dermis are lost. Even when the patient brings in the avulsed piece of skin, it is usually too macerated, small, or contaminated to attempt reattachment. The nature of these wounds is such that primary closure with sutures, staples, or tape is not feasible. Thus, the physician is left with the challenge of properly cleaning, exploring, and dressing the wound.

In the otherwise healthy patient, a common finding given the excellent perfusion to this area is difficult-to-control bleeding. Many of the injuries that present to the ED are for precisely this reason. Patients will often state that they would not have come to the ED for such a minor injury, except that they could not get the bleeding under control. Although direct pressure may temporarily stop the bleeding, when pressure is released, the bleeding then quickly resumes.

TECHNIQUE

A simple, rapid technique that stops the bleeding without the need for placement of a bulky or costly dressing is described here.

Prior to performing the procedure, standard evaluation and cleaning of the wound should be performed. The

injury site should be inspected to ensure the depth of injury is not to the bone, and that no large digital vessel requiring ligation is exposed.

The wound should be adequately prepared with irrigation and cleaning. Digital block anesthetic technique may facilitate proper cleaning. Need for tetanus vaccination should be assessed. No ointments or antiseptic solutions should be applied to the digit. The procedure can then be performed as described.

Firstly, a tourniquet is placed around the proximal digit. The digit is exsanguinated using direct pressure and manually “milking” the finger proximally to distally. Elevation of the digit also aids in achieving optimal short-term hemostasis. Prior to proceeding to the next step, the provider should inspect the exposed surface of avulsed skin to ensure there is no active bleeding. Even a small amount of venous “oozing” will render the procedure less effective.

Secondly, a layer of commercially available tissue adhesive glue, such as 2-octyl-cyanoacrylate, is applied over the avulsed region of the digit and allowed several minutes to dry (Figure 1). As is typical in the use of tissue adhesive glue, an additional two to three applications over the initial layer should be applied as each previous layer dries.

Finally, the tourniquet is removed. The patient is instructed to lower his or her extremity to a comfortable resting position. The patient should be observed for several minutes to ensure that no further bleeding occurs from the wound. When the technique is properly performed, a clean, bloodless dressing is created over the avulsed fingertip (Figure 2).

The practitioner must be careful to ensure a bloodless field prior to the application of tissue adhesive glue. Even very slow, active oozing of blood while the glue dries is more likely to create an unsightly, messy scab-like wound that may not ultimately control the bleeding. Also, it can be difficult to remove this layer once applied. Thus, it is paramount that the wound is observed for several minutes prior to glue application to ensure not even a small amount of bleeding is occurring. If this is the case, the tourniquet likely needs to be tightened or the limb should be elevated higher.

The tissue adhesive layer will generally fall off spontaneously within a week, at which time bleeding will have stopped through intrinsic, physiologic hemostatic mechanisms. The patient should be instructed to refrain from use of ointments, lotions, or prolonged water exposure, which can cause early sloughing of the tissue adhesive layer and lead to re-bleeding. Otherwise, follow-up is not necessary unless complications such as re-bleeding or infection occur.

A video detailing this technique is provided for online reference (Video 1).



Figure 1. A layer of commercially available tissue adhesive glue such as 2-octyl-cyanoacrylate is applied over the avulsed region of the digit and allowed several minutes to dry. A tourniquet must be applied and the digit must be elevated to aid in achieving optimal short-term hemostasis.

DISCUSSION

Distal fingertip pad dermal avulsion injuries are a common problem seen in EDs and minor injury clinics, without a previously described optimal treatment to achieve rapid hemostasis. Some suggestions for management of the bleeding that have been presented in “tricks of the trade” columns include soaking the digit tip in 1% lidocaine with epinephrine, or use of antibiotic ointments in combination with absorbent dressings and impermeable transparent film dressings such as Tegaderm (3M, St. Paul, MN) (1,2). In this author’s experience, the former technique, although often initially successful, can lead to re-bleeding and still generally requires the application of a bulky dressing to tamponade the bleeding. The latter technique makes for a messy, somewhat uncomfortable dressing and makes the wound more difficult to periodically assess for continued bleeding or signs of infection.

Commercial products are also available for hemostasis in this situation, such as Gelfoam® (Pfizer, New York, NY) and SURGICEL® (Ethicon, Somerville, NJ). However, these materials often do not adequately achieve

Download English Version:

<https://daneshyari.com/en/article/3246667>

Download Persian Version:

<https://daneshyari.com/article/3246667>

[Daneshyari.com](https://daneshyari.com)