ALLERGY Net

ALLERGY 2009 DOI: 10.1111/j.1398-9995.2009.02243.x
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Extensive allergic reaction to a new wound closure device (Prineo™)

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Key words: allergic reaction; complication; Prineo; skin; surgery; surgical adhesive.

An extensive allergic skin reaction is reported after use of a newly introduced surgical adhesive (Prineo™).

Closure of long cutaneous incisions often consumes a significant amount of time compared to the overall length of the operation. Thus, new wound closures devices facilitating rapid wound closure are constantly introduced to the market. In the last decade, cyanoacrylates have been used with increasing success for rapid and easy wound closure (1–3). Recently, a two-component wound closure system (Prineo™; Ethicon Products, Somerville, NJ, USA), consisting of a self-adhering mesh together with a liquid adhesive (octyl-2-cyanoacrylate), has been introduced to the market to provide fast and secure wound closure. Although there are reports about allergic reactions to octyl-2-cyanoacrylate alone after wound closure (4), to the best of our knowledge, there have not been any reports about dermatologic adverse reactions to this new wound closure system.

A 44-year-old woman was scheduled for breast reduction surgery because of breast hyperplasia. After resection and completion of hemostasis, wound closure was begun. Subcutaneous closure was performed using interrupted 3-0 glycolide/lactide copolymer absorbable sutures (Polysorb™, Syneture, Covidien; Dublin, Ireland) with a distance of approximately 1 cm apart in the deep dermis. After sufficient approximation of the skin edges, the Prineo skin closure device was used to close the wound according to the manufacturer's guidelines. At the completion of the operation, light bandages were applied. On routine checkup in our ambulance at the tenth postoperative day, the patient complained about severe itching and upon removal of the self-adhering dressing, an extensive skin reaction was obvious in the vicinity of the Prineo skin closure device (Fig. 1). Thus, the device was removed completely and topical corticosteroid skin ointment (Clobetasol 17-Propionate; Dermovate, GlaxoSmithKline, Middlesex, UK) was prescribed. Further wound healing was uneventful. The patient then presented to the Department of Dermatology because of a persisting skin discoloration and for diagnostic reevaluation. Allergy testing was performed 2 months after the initial adverse event. An epicutaneous patch test against standard allergens as well as octyl-2-cyanoacrylate and the self-adhering mesh was carried out. The allergens were attached with small Finn chambers on Scanpore™ (Bard Medical Division, Covington, GGA). All tested substances were negative but there was a moderate (++) positive allergic reaction to both components of the Prineo™ wound closure device. Thus, she was diagnosed with allergic contact dermatitis to both of the Prineo™ wound closure device and documented in her medical records. To alleviate the hyperpigmentation in the inframammary fold, azelaic acid ointment 20% (Skinoren; Intendis, Vienna, Austria) was prescribed. At 4-months follow-up, a satisfactory scar with only mild residual hyperpigmentation was seen.

To overcome the potential detrimental effects of sutures in skin closure, surgical adhesives were introduced as a new technology. In particular, the cyanoacrylates have proven to be very effective in sutureless skin closure (1–3). The new wound closure device Prineo™ was introduced to combine the effectiveness of octyl-2-cyanoacrylate (Dermabond™) together with a self-adhering mesh to make closure of long skin incision even more safe and reliable.

Figure 1. Appearance of the inframammary wound after Prineo™ application at the tenth postoperative day with severe cutaneous reaction, redness and even blistering.

Although there have been reports about potential serious side-effects of the use of octyl-2-cyanoacrylate alone (4), no adverse effects to the new wound closure device Prineo™ have been reported so far. We have used this device in over 50 cases of excisional body contouring procedures with great success and a noticeable reduction in operating time. However, our case demonstrates that there is a potential for adverse effects that may be very bothersome and even hazardous to the patient's health.

Because Prineo™ was just recently launched, and it enables the surgeon with a quick and smooth skin closure, its widespread use in cutaneous surgery is anticipated. The applying surgeon, however, must be aware of the potential for severe skin reactions and has to inform the patient about this possible complication.

The authors have no conflict of interest to declare.

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Accepted for publication 28 September 2009
Allergy 2009
© 2009 John Wiley & Sons A/S
DOI: 10.1111/j.1398-9995.2009.02243.x

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