

# Dermatology Times

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SPECIAL SECTION

## RECONSTRUCTION

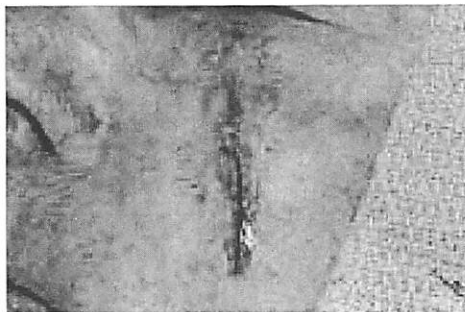
### 'Super glue' replaces sutures

N-2-butylcyanoacrylate cost-effective as epidermal closure substitute

**Dallas** — N-2-butylcyanoacrylate glue (GluStitch) is a useful substitute for cuticular sutures in facial surgery, John W. Skouge, M.D., said at the joint meeting of the American Society of Dermatologic Surgery and the American College of Mohs Micrographic Surgery and Cutaneous Oncology.

Reporting the results of a study he conducted evaluating the performance of this "super glue" when used for epidermal closure, Dr. Skouge noted cosmetic results were, in the vast majority of cases, at least comparable to those achieved with suturing. In addition, the glue had advantages in terms of safety and simplifying wound care. Those features combined with the acceptable pricing of the product make N-2-butylcyanoacrylate a worthwhile and economical alternative to cuticular sutures, he said.

"Cyanoacrylate tissue adhesives have been available for many years, and while those agents work well for sealing superficial wounds, because of their expense they could not be considered a reasonable replacement for suturing. N-2-butylcyanoacrylate is the first product of this type known to me that can compete cost-effectively with stitches, and that led me to evaluate it as a substitute for cuticular sutures. Subsequent to performing this study, I have used it for surface closure every chance I get and now have experience with it in over 500 patients. In addition, I have expanded its use to some split thickness skin grafts and flaps and am pleased



**Facial wound after placement of Vicryl buried sutures and application of N-2-butylcyanoacrylate (left) and three months postoperation.** (Photographs courtesy of John W. Skouge, M.D.)

with its performance in those situations as well," commented Dr. Skouge, assistant professor of dermatology, The Johns Hopkins University School of Medicine, Baltimore.

In evaluating N-2-butylcyanoacrylate as a substitute for surface sutures, Dr. Skouge initially chose to use it in patients with wounds in the preauricular area where skin had been harvested for full-thickness grafts. The glue was used to secure the epidermal edges after placement of Vicryl buried sutures. Results were assessed at one week and again at three to six months after surgery. Encouraged by the outcomes in 20 consecutive patients, Dr. Skouge expanded his study population to include another 20 consecutive patients with side-to-side closures at various sites over the face.

In his final evaluation of the cosmetic results, Dr. Skouge found that with the exception of areas of highly sebaceous skin, the

appearance of wound sites closed with the glue was highly acceptable. Based on his historical perspective, he noted the results were at least as good as those of sutured wounds, if not better because of the absence of any suture marks.

That outcome was achieved with the need for just a little more work in terms of placing the buried sutures. Overall, three to five buried sutures were needed to adequately approximate the epidermis, whereas when using cuticular sutures, Dr. Skouge estimated he would have placed between two to four buried sutures in the wounds.

"While cuticular sutures are helpful for approximating the epidermal edges exactly, glue cannot. Therefore, meticulous technique in placing the buried sutures is needed when using the glue to bring the epidermal edges precisely together. When I began using the

glue. I was concerned about the need for placing more buried sutures, and I found some additional time is needed for that step. However, I feel it is more than compensated for by the fact that it takes just 20 to 30 seconds to apply the glue," he noted.

In his safety review of the 40 patients, Dr. Skouge found the only wound complication was a single case of hematoma that drained spontaneously but did require resuturing. That event, however, was not attributed to use of the glue, and Dr. Skouge emphasized that no wound infections, allergic reactions, or irritant reactions developed among the study subjects nor in any of the hundreds of cases where he has used this product since.

"That is an important observation considering some antibiotic ointments that must be used in the care of sutured wounds are associated with an appreciable risk of allergic reactions," Dr. Skouge said.

Patient acceptance was also evaluated in the study and found overall to be very high. As the glue peeled off over five to eight days, some patients found its dark, crusty appearance somewhat objectionable. However, that limitation was far outweighed by the ability of the glue to simplify greatly postoperative care. When the glue is used, a pressure dressing is applied immediately to minimize bleeding under the skin, but that is taken off by the patient just 24 hours later. Since the glue completely seals the wound, it obviates any requirements for wound cleaning, antibiotic ointment, dressings (other than for cosmetic reasons), or a return visit for suture removal, Dr. Skouge said.

"These features make use of the glue extremely valuable for closing wounds in elderly patients who may have difficulty following even very simple care instructions," he observed.

In its container, N-2-butylcyanoacrylate is a monomer, but it polymerizes on contact with an aqueous-containing substance, such as blood, and becomes sticky. When using it for surface closure, Dr. Skouge runs the glue in a very thin line along the length of the incision and 3- to 4-mm on both sides. After waiting 10 to 15 seconds, he generally applies a second coat.

GluStitch is marketed in a preloaded 0.2-mL single use applicator and in 1 mL and 5 mL multiuse containers that come with pipettes and autoclavable administration trays. The cost per use for these different packaging units ranges from about \$1 to \$7, Dr. Skouge noted.

GluStitch is produced by GluStitch, Inc., Vancouver. It is approved by the FDA only for use on intact skin as a protectant. Dr. Skouge has no financial interest in this product. DT

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