

Emergency Medicine 2018: To evaluate the efficacy and effectiveness of N-butyl 2-cyanoacrylate glue (TRU SEAL) in closure of oral, maxillofacial laceration and surgical incisions - Praveen Kumar Singh, Consultant Maxillofacial Surgeon Mysuru, India

Praveen Kumar Singh

Abstract

Introduction: Effective wound closure is critical for minimizing wound complications and preventing wound dehiscence. The various wound closure techniques include staples, traditional nylon and skin sutures, subcuticular sutures and skin adhesives. Currently topical skin adhesives are frequently being used. Most of the adhesives used are cyanoacrylates short and long chain (butyl and isobutyl cyanoacrylates) derivatives. Cyanoacrylates (CAC) are tissue adhesives exhibiting the objectives of achieving coaptation of surgical wound borders, and thus eliciting healing. This material is bacteriostatic and biodegradable and exhibits suitable tensile strength. Cyanoacrylates glue results in cutaneous closure in less than 5 minutes. It should not be used for deep wound closure or in any patient sensitive to cyanoacrylates. Wound closure using tissue adhesives require careful attention to be given to closure of subcutaneous layer to ensure optimal approximation and tension on the edges of the wound. Cyanoacrylates glue polymerize rapidly within seconds following contact with proteinaceous surfaces to form strong and flexible bonds. This chemical property makes them extensively used in different surgical application. Prior to application of cyanoacrylates, the tissue surface should be cleaned and dried as much as possible. Protection of the surrounding tissues from accidental contact with cyanoacrylates can be done by covering them by gauze or chloramphenicol 1% ointment. **Method:** Under naso-endotracheal intubation, skin preparation was done with povidone iodine. Skin incision for each procedure was placed in the standard location. Then reduction of fracture and plating was done.

In 80% of the patient's subcutaneous sutures were placed. Skin closure was done with N-butyl 2 cyanoacrylate glue. Pressure dressing was placed in the usual manner for 24 hours post-operatively. **Result:** In this study, REEDA Scale was used to assess healing. Redness, edema, ecchymosis was seen in all 10 patients, which subsided by 2nd week post-operatively. None of the patients had discharge from surgical site on 1st post-operative day but was noted in 2 patients 1st week post-operatively. There was evidence of wound gaping in 1 patient on 1st post-operative day and 2 patients at end of 1st week post operatively. Stony Brook Scar evaluation was used to evaluate post-operative cosmesis in this study. No significant cosmetic impairment was found in all patients at the end of the study. Patients were highly satisfied with the excellent cosmetic results. In this study, no adverse inflammatory reactions were encountered, and it is relevant to a study conducted by Ahmed Habib, et al. The surgical glue has the characteristic of being rapidly transferred from a liquid to a solid state that occurs at room temperature without the need of catalysts, solvents or application of pressure. **Conclusion:**

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Praveen Kumar Singh
Consultant Maxillofacial Surgeon Mysuru, India
E-mail: drpraveen.omfs@gmail.com