Efficacy of fibrin sealant (human) (evicel) in rhinoplasty. A prospective, randomized, single-blind trial of the use of fibrin sealant in lateral osteotomy.

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Abstract:

Objectives: To determine whether patients receiving fibrin sealant placed in a single lateral osteotomy site during rhinoplasty will note substantial improvement in pain, bruising, swelling, and overall healing compared with the untreated side and to determine whether blinded observers detect a substantial difference in bruising and swelling on the basis of review of standard postoperative photographs. Methods: We conducted a prospective, randomized, single-blind, controlled trial of the use of fibrin sealant (human) (Evicel; Johnson & Johnson-Wound Management, Somerville, New Jersey) in 10 consecutive patients undergoing lateral osteotomy in rhinoplasty. Written consent was obtained from all participants. Each patient was randomized for the use of fibrin sealant on either the right or the left side with the contralateral side acting as the control. Patients were evaluated on postoperative days 1, 7, and 21 with standard photographic views and a patient questionnaire. The blinded observers consisted of 5 raters familiar with the outcomes and results of rhinoplastic surgery. The observers evaluated all photographs and completed a grading scale to define bruising and swelling on each side. Results: The mean patient age was 41 years (age range, 21-66 years). Half of the patients were women. The blinded observer Wilcoxon rank sum test revealed a statistically significant difference on postoperative day 1 for bruising (P<.03; Wilcoxon critical z value, 1.99) and swelling (P< .01; 2.41). Similar findings were discovered on post-operative day 7 for both bruising and swelling (P < .03). On postoperative day 21, bruising retained statistical significance (P < .05); however, swelling did not achieve statistical significance. Patient

questionnaires were evaluated and significance was determined for the treated compared with the untreated side of the nose on postoperative days 1, 7, and 21. Categories included pain, bruising and swelling, and overall rate of healing. The Wilcoxon rank sum test revealed no significance for pain or overall rate of recovery ($P > .06$) on postoperative days 1, 7, or 21. However, bruising and swelling both achieved statistical significance. On postoperative day 1, both pain and swelling scales achieved a significance of $P< .01$ (Wilcoxon critical z value, 2.34). On postoperative day 7, bruising achieved significance at $P < .005$ (Wilcoxon critical z value, 2.63) and swelling achieved significance at $P < .01$ (2.45). Both bruising and swelling achieved equal significance on postoperative day 21 ($P < .01$; Wilcoxon critical z value, 2.57 and 2.45, respectively). Conclusions: Fibrin sealant applied to a lateral osteotomy site significantly reduced bruising and swelling per patient report on postoperative days 1, 7, and 21. Physician observation reported significant reduction in bruising on postoperative days 1,7, and 21 and reduction in swelling on postoperative days 1 and 7. The ease of application and versatility of fibrin sealant enable rapid healing after rhinoplasty and produce increased patient satisfaction.