A prospective, randomized trial comparing BioGlue and Vivostat for the control of alveolar air leak.

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Abstract:

Objective: BioGlue (CryoLife, Europa Ltd, Surrey, UK) is effective in reducing alveolar air leak after pulmonary resection. However, concerns exist regarding the use of bovine-derived products. Vivostat (Vivostat A/S, Alleroed, Denmark) is an autologous fibrin sealant that confers certain advantages. It shows superior elastic properties, a faster absorption time, and the absence of risk of transmission of blood-borne diseases. Methods: We conducted a randomized, single blind controlled study to compare BioGlue and Vivostat in the control of postoperative air leak. Primary endpoints were duration of air leak, time to intercostal drain removal, and length of hospital stay. Secondary endpoints related to postoperative complications. Results: Between December 2005 and December 2007, 103 patients were randomized. The analysis included 102 patients; 67% were male. Median age was 56 +/- 19 years. Indications for surgery were primary lung cancer in 41 patients (40%), secondary malignancy in 48 patients (47%), carcinoid in 6 patients (6%), and 7 patients underwent surgery for benign disease (7%). Bilobectomy was performed in 2 patients (2%), lobectomy in 41 patients (40%), lobectomy with lesser resection in 3 patients (3%), segmentectomy in 16 patients (16%), precision excision in 34 patients (33%), and 6 patients underwent other resections (6%). Median duration of air leak was 3 (0-32) days versus 2 (0-33) days for patients who received BioGlue and Vivostat, respectively (P = .677). Time to intercostal drain removal was 5 (1-32) days in the BioGlue group compared with 5 (1-34) days for the Vivostat group (P = .473). Median hospital stay was 8 (3-22) days versus 7 (2-29) days for the BioGlue and Vivostat groups, respectively (P = .382). There was no significant difference in the incidence of complications between the 2 groups

(20 patients receiving BioGlue versus 19 patients receiving Vivostat, P = .839). Conclusions: There were no significant differences in the 3 clinical outcome measures of duration of air leak, time to intercostal drain removal, and length of hospital stay in those patients receiving BioGlue or Vivostat. Given the inherent advantages of our institutional preference is to use Vivostat in the control of postoperative air leaks after pulmonary resection.