

# **The effect of autologous fibrin sealant (Vivostat) on morbidity after pulmonary lobectomy: A prospective randomised, blinded study.**

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## **Abstract:**

**Objective:** Postoperative air leakage is the most frequent complication after pulmonary surgery. The development of modern surgical techniques has been influenced strongly by the need to manage air leakage effectively during pulmonary resection. This study evaluated the effect of using an autologous fibrin sealant (Vivostat) during lobectomy on morbidity following surgery. **Methods:** This was a prospective, blinded, randomised clinical study. Patients undergoing lobectomy were enrolled into two groups (Vivostat or non-treatment control, 20 per group). Air leakage was measured over a 1-h period (using a mechanical suction pump) on the day of operation, and both air leakage and bleeding/exudation (drainage volume) were recorded every morning postoperatively until the chest tubes were removed. Personnel recording these parameters were blinded to the intervention received. **Results:** Compared with the control group, mean bleeding/exudate volumes were significantly reduced in the Vivostat group (day 1, 370 vs. 525 ml; total, 424 vs. 782 ml; both  $P<0.001$ ), and drains were inserted for a shorter time (medians, 1 vs. 2 days,  $P=0.07$ ). Significantly fewer patients had air leakage at any time in the Vivostat group (40 vs. 80%,  $P=0.02$ ), and air leakage volumes were significantly lower compared with the control group (median differences: day of surgery: 0.6 l/min,  $P=0.01$ ; total 0.8 l/min,  $P=0.03$ ). Postoperative hospitalisation time was shorter in the Vivostat group than in the control group but the difference was not significant (0.5 days,  $P=0.12$ ). **Conclusions:** Vivostat fibrin sealant significantly reduces post-surgical air leakage and drainage volumes following lobectomy in pulmonary surgery and is suitable for routine use in this procedure. © 2004 Elsevier B.V. All rights reserved.