Autologous fibrin sealant reduces the incidence of prolonged air leak and duration of chest tube drainage after lung volume reduction surgery: a prospective randomized blinded study.

Authors: Moser C, Opitz I, Zhai W, Rousson V, Russi EW, Weder W, Lardinois D

Publication Date: 2008

Abstract:

OBJECTIVE: Prolonged air leak is reported in up to 50% of patients after lung volume reduction surgery. The effect of an autologous fibrin sealant on the intensity and duration of air leak and on the time to chest drain removal after lung volume reduction surgery was investigated in a randomized prospective clinical trial.

METHODS: Twenty-five patients underwent bilateral thoracoscopic lung volume reduction surgery. In each patient, an autologous fibrin sealant was applied along the staple lines on one side, whereas no additional measure was taken on the other side. Randomization of treatment was performed at the end of the resection on the first side. Air leak was assessed semiquantitatively by use of a severity score (0 = no leak; 4 = continuous severe leak) by two investigators blinded to the treatment.

RESULT: Mean value of the total severity scores for the first 48 hours postoperative was significantly lower in the treated group (4.7 +/- 7.7) than in the control group (16.0 +/- 10.1) ($P < .001$), independently of the length of the resection. Prolonged air leak and mean duration of drainage were also significantly reduced after application of the sealant (4.5% and 2.8 +/- 1.9 days versus 31.8% and 5.9 +/- 2.9 days) ($P = .03$ and $P < .001$).

CONCLUSIONS: Autologous fibrin sealant for reinforcement of the staple lines after lung volume reduction surgery significantly reduces prolonged air leak and duration of chest tube drainage.