

# **Sutureless pneumostasis using bioabsorbable mesh and glue during major lung resection for cancer: Who are the best candidates?.**

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## **Abstract:**

**Objective:** Preventing air leaks after major lung resection for cancer is mandatory for successful fast-track surgical intervention. We reported our preliminary results with performance of pneumostasis by combining polyglycolic acid mesh and fibrin glue; however, the advantages of this combination over the conventional method have not been clarified. **Methods:** We controlled air leaks detected during an intraoperative water-seal test by using sutures and fibrin glue before April 2006 and by combining polyglycolic acid mesh and fibrin glue without sutures thereafter. We removed the chest tube the day after the air leaks stopped. For bias reduction in comparison with the 2 historical cohorts, we used the nearest available matching method with the estimated propensity score. **Results:** The durations of chest tube drainage and postoperative hospital stay were significantly shorter in the mesh-and-glue group (n = 61) than in the glue-alone group (n = 61). The incidence of postoperative pulmonary complications was lower in the mesh-and-glue group than in the glue-alone group (0% vs 7%,  $P = .042$ ). According to a stratification analysis, the benefit of combining mesh and glue to reduce the duration of chest tube drainage was limited in patients undergoing upper lobe resection and in patients with severe emphysema undergoing other types of resection. **Conclusion:** Combining bioabsorbable mesh and glue for pneumostasis can reduce the duration of chest tube drainage, postoperative hospital stay, and pulmonary complications after major lung resection for cancer. Patients undergoing upper lobe resection and those with severe emphysema might be the best candidates for this technique. © 2010 The American Association for Thoracic Surgery.