

Staple line reinforcement with fleece-coated fibrin glue (TachoComb) after thoracoscopic bullectomy for the treatment of spontaneous pneumothorax.

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Abstract:

BACKGROUND: We investigated the cause of pneumothorax recurrence after thoracoscopic surgery and the effectiveness of staple line reinforcement with fleece-coated fibrin glue (TachoComb) in the prevention of postoperative pneumothorax recurrence.

METHODS: From April 3, 1992 to the end of December 2005, thoracoscopic bullectomy was performed on 499 patients of primary spontaneous pneumothorax. The causes of recurrence were investigated on 39 patients on the basis of surgical observations, preoperative chest computed tomography, and so on. The most common cause was new bulla formation (37 cases), 19 of which were apparently related to the staple line (within 1 cm of the staple lines) and 15 of which were not related to the staple line. After 2000, we stopped using forceps to grasp lungs and we have reinforced the staple line by applying fleece-coated fibrin glue.

RESULTS: The staple line reinforced with fleece-coated fibrin glue, or sprayed with fibrin glue solution and the untreated group (bullectomy only with staples) were compared, and the recurrence rates were 1.22%, 7.25%, and 10.00%, respectively ($P = 0.0006021$).

CONCLUSIONS: The recurrence rate after thoracoscopic bullectomy with fleece-coated fibrin glue was significantly lowered and we consider this procedure to be the treatment of choice for the

management of spontaneous pneumothorax.