Controlling air leaks using free pericardial fat pads as surgical sealant in pulmonary resection.

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Abstract:

BACKGROUND: This study evaluated the feasibility and efficacy of a new operative method for controlling intraoperative air leaks using free pericardial fat pads as a covering sealant in pulmonary resection.

METHODS: To manage air leaks that must be controlled in pulmonary resection at the first water sealing test, collected free pericardial fat was used as a covering sealant and sewn on by the suture closing the lesion. In cases of uncontrolled air leaks at the second sealing test, fibrin glue was used to fill the residual lesion between the fat and visceral pleura. Fifty-one eligible patients were enrolled in this study to evaluate the duration of postoperative air leaks and the condition of the implanted fat on chest computed tomography (CT) 6 months later.

RESULTS: The mean duration of postoperative air leaks was 1.05 +/- 1.84 days in the 39 cases that received the pericardial fat covering technique only and 2.66 +/- 3.42 days in the 12 cases that received the pericardial fat covering technique combined with fibrin glue. Prolonged alveolar air leaks occurred in 1 case and 2 cases, respectively. No cases required conversion to conventional methods, and there were no further adverse events. On follow-up chest CT approximately 62.7% of obvious engrafted fat survived.

CONCLUSIONS: Using free pericardial fat pads as a sealant to control air leaks in pulmonary resection is safe and has good feasibility and potent efficacy. This new method can be an innovative technique for preventing prolonged air leaks.