Efficacy and safety of fibrin sealant patch in the treatment of air leakage in thoracic surgery.

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Abstract:

Aim. Air leakage represents a major problem in lung surgery. Absorbable fibrin sealant patch (AFSP), a collagen sponge coated with human fibrinogen and thrombin, can be used as an adjunct to primary stapling or suturing. This study compared the efficacy of AFSP with manual suturing after primary stapling. Methods. This was a prospective, multicenter, randomized study. Patients undergoing lobectomy, bilobectomy, anatomical segmentectomy for lung cancer or wedge resection for pulmonary metastasis with air leakage grade 1 or 2 according to Macchiarini scale after stapler suture were randomized to receive AFSP or standard surgical treatment (ST). The primary endpoint was the reduction of intraoperative air leakage intensity. Duration of postoperative air leakage and number of days until removal of last chest drain were secondary endpoints. Safety was recorded for all patients. Results. A total of 346 patients were enrolled in 14 centres, 179 of whom received AFSP and 167 ST. Intraoperative air leak intensity was reduced in 90.5% of AFSP patients and 82% of ST patients (P=0.03). A significant reduction in postoperative air leakage duration was observed in the AFSP group (P=0.0437). The median number of days until removal of last drainage was 6 (3-37) in the AFSP group and 7 (2-27) in the ST (P=0.38). Occurrence of adverse events was comparable in both groups. Conclusion. AFSP was more efficacious than standard ST as an adjunct to primary stapiing in reducing intraoperative air leakage intensity and duration of postoperative air leakage in patients undergoing pulmonary surgery. AFSP was well tolerated.