New surgical technique of pulmonary segmentectomy by ultrasonic scalpel and absorbable sealing materials. [Japanese]

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Abstract:

We developed new surgical technique of pulmonary segmentectomy by ultrasonic scalpel to sever intersegmental pulmonary tissue and absorbable sealing materials to cover the cut surface of lung. This method is expected to preserve more anatomical lung volume than the segmentectomy with surgical stapler. Two cases of post surgical recurrent lung cancer, 3 cases of pulmonary metastasis and 4 cases of primary lung cancer were applied this technique to preserve function. Among 3 materials examined, best result was obtained with polyglycolic acid felt (PGAF:Neoveil). PGAF is a very soft and thin (0.15 mm depth) new absorbable material that is able to closely adhere to irregular sections of the lung with fibrin glue and effectively seals air leakage. Mean chest drainage period after surgery in 6 cases with PGAF was 3.3 days. Excellent lung expansion was obtained immediately after the surgery and PGAF was disappeared completely on chest CT within 1 year. Although the possible superiority of this method is suggested in the present study, further comparative study is necessary to clarify the advantage of this new technique.