

Comparison of endoscopic bronchial occlusion and intrapleural fibrin glue sealing for intractable pneumothorax

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Background:

The treatment of intractable pneumothorax varies. Endoscopic bronchial occlusion (EBO) and intrapleural fibrin glue sealing (IFS) are treatments of choice for high-risk patients with intractable pneumothorax in our institution.

Patients and methods:

We retrospectively reviewed the medical records of patients treated by EBO or IFS. EBO was performed with endobronchial Watanabe spigots (EWS). IFS was performed with 4-fold diluted fibrin glue with saline and contrast media which were infused through a chest tube under X-ray fluoroscopy. Between July 2005 and June 2012, 8 patients underwent EBO and 17 patients IFS. Patient characteristics of EBO group were as follows: median age of 69 (range: 67-80); male/female: 7/1; postoperative pulmonary fistula/interstitial pneumonia/eosinophilic pneumonia/mesothelioma/emphysema: 3/2/1/1/1. Patient characteristics of IFS group were as follows: median age of 72.5 (range: 60-85); male/female: 14/2; postoperative pulmonary fistula/lung cancer/interstitial pneumonia/emphysema/radiation pneumonitis: 5/3/2/2/2. In this study, we compared success rate of treatment, the duration of the tube drainage and days of hospital stay after treatment between EBO and IFS groups.

Results:

The overall success rate of EBO was 50.0 % (4/8) and that of IFS was 75.0% (12/16), while the initial success rate of EBO was 37.5% (3/8) and that of IFS was 56.3% (9/16). In successful cases, the duration of the tube drainage after treatment was 7.5 ± 7.1 days in EBO group and 6.3 ± 4.4 days in IFS group. Days of hospital stay after treatment was 11.5 ± 9.3 days in EBO group and 17.5 ± 12.7 days in IFS group. There were no significant differences between the two groups in the duration of the tube drainage and days of hospital stay after treatment.

Conclusion:

The success rate of IFS was superior to that of EBO, though there was no significant difference between the two groups. Because background of the patients with intractable pneumothorax varies we have to choose the treatments considering the characteristics of them. IFS is relative easy, however, it must be performed under X-ray fluoroscopy and patients are required to change their positions. EBO requires skill and experience, but it will be useful for patients with poorer physical condition, such as on ventilators, because it can be performed at the bedside.