Abstract

Purpose: Bronchopleural fistula (BPF) is a serious complication after lung resection. To avoid BPF, we often cover the bronchial stump/anastomotic site with the surrounding tissue flap. One risk factor is a radical lung resection after induction chemoradiotherapy for lung cancer. We retrospectively reviewed our database to elucidate the characteristics of tissue flap preventing BPF.

Methods: This retrospective study included 152 patients between 1999 and 2019. We examined clinicopathological characteristics including the type and thickness of tissue flap used to cover the bronchial stump/anastomotic site, and postoperative complications including BPF.

Results: BPF occurred in five patients (3.3%). All five patients had complications that could have affected delayed wound healing, such as pneumonia. The covering tissue flap thickness was significantly greater in the cases without developing BPF compared to those with BPF (p = 0.0290). Additionally, the tissue flap thickness was significantly greater (p = 0.0077) even in high-risk patients who developed pneumonia or radiation pneumonitis on the operative side within six months postoperatively compared to those with BPF.

Conclusion: Perioperative management to avoid the complications affecting the healing of

the bronchial stump/anastomotic site is crucial, and the covering tissue flap thickness may be an important factor to avoid or minimize BPF.