

# CHAPTER 13

## BRONCHOPLEURAL FISTULAS

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The connection between bronchial system and pleural space is called bronchopleural fistula (BPF). An infection usually plays a role in the etiology. While BPF may develop following parenchymal or pleural infections (e.g. tuberculosis, aspiration pneumonia, necrotizing pneumonia, coccidiomycosis, aspergillosis, empyema), it may also be observed after large pulmonary infarcts and traumas (penetrating injuries, parenchymal or pleural biopsy, thoracentesis, tube thoracostomy, high-pressure mechanical ventilation) [1]. Since parenchymal and pleural infections, especially tuberculosis, have become rarer after

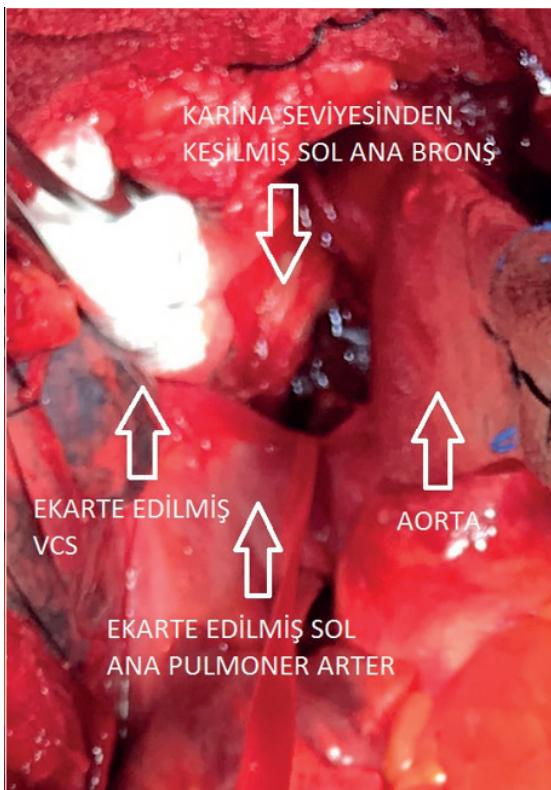
the widespread use of antibiotics, the number of BPFs caused by infections has decreased. Today, a significant number of BPF patients have fistulas after resection [1-17]. Although its incidence has gradually decreased over the years, BPF is still an important complication due to high mortality (16-71.2%) (Table 1) [2-13].

The incidence of BPF in pneumonectomies has been shown to be in the range of 1.5-12.5%, although it is reported as low as 0.5% after lobectomies for lung cancer [2-13]. BPF rate after left pneumonectomy was reported to be between 0% and 6.3%, whereas it was in the range of 1.1-

**Table 1. BPF and mortality series of pneumonectomies performed due to NSCLC**

First author - Country	Year	Patients	BPF (%)	Mortality (%)
Madsen – Denmark	1984	225	12.5	28.6
Asamura – Japan	1992	2359	2.1	71.2
Al-Kattan – England	1995	451	1.5	29
Hollaus – Austria	1997	766	12.1	31
Hubaut – France	1999	208	2.4	40
Bernard – USA	2001	639	3.9	16
Sirbu – Germany	2001	175	6.8	33.3
Darling – Canada	2005	180	8	40
Haraguchi – Japan	2006	142	8.5	58.7
Panagopoulos – Greece	2009	221	2.3	20
Matsuoka – Japan	2010	64	7.8	40
Gürsoy - Turkey	2017	436	10.8	19.1

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**Picture 6:** Left main bronchus incised with the help of stapler.

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Perelman et al. showed that in the BPFs seen after left pneumonectomy due to its long course in the mediastinum, they closed the fistula successfully with incision made in the region near carina by reaching the lower end of the trachea and the left main bronchus via right posterior thoracotomy.

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