

Original article

Results of surgical closure of bronchopleural fistula with vascularized tissues

Walid A.E. Hammad

Cardiothoracic Surgery Department, Faculty of Medicine, Al-Azhar University, Cairo, Egypt

Received 19 June 2016; revised 8 August 2016; accepted 9 August 2016

Available online 21 August 2016

Abstract

Background: Bronchopleural fistula (BPF) is a communication between the pleural space and the bronchial tree or lung parenchyma resulting in air leak in the chest tubes. Chronic BPF is a serious complication of several pulmonary and postoperative conditions, as it carries a high morbidity and mortality and is associated with prolonged hospital stay and thus high resource consumption. Till date surgical intervention has been the main stay of management of chronic BPF.

This study was carried out to assess the efficacy of surgical closure of the chronic BPF using vascularized tissue transfer into the pleural cavity.

Patients and methods: 28 patients were operated upon primarily due to chronic BPF with or without empyema. All patients were selected and subjected to surgical intervention using vascularized tissue transfer into the pleural cavity. The vascularized tissues had been used were: Intercostal muscle flap, Latissimus dorsi muscle transposition, Omental flap, and Pericardial pad of fat.

Results: The mean hospital stay postoperatively was 4 ± 1 day. There was immediate or early stoppage of air leak after the intervention in all patients. No patient had prolonged postoperative air leak (≥ 5 days). One patient required negative suction for 2 days to help stoppage of the leak. No patient required instillation of sealants through the tubes.

Conclusion: Once the BPF has developed, early recognition, drainage of the pleural space and control of the inflammatory process are critical. Surgical closure of BPFs with proper vascularized tissues is an effective technique associated with low cost and lower hospital stay.

Copyright © 2016, The Egyptian Society of Cardio-thoracic Surgery. Publishing services by Elsevier B.V. This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).

Keywords: Lung; Bronchopleural fistula; Vascularized tissue; Postoperative air leak

1. Introduction

BPF is a communication between the pleural space and the bronchial tree or lung parenchyma resulting in air leak in the chest tubes. It might be divided into alveolopleural fistula (APF) or bronchopleural fistula (BPF). An APF is a communication between the pulmonary parenchyma distal to a segmental bronchus and the pleural space, while a BPF

E-mail address: dr_walideid2005@yahoo.com.

Peer review under responsibility of The Egyptian Society of Cardio-thoracic Surgery.

is a communication between a main stem, lobar, or segmental bronchus and the pleural space. The term BPF is used for any air leak which failed to heal conservatively and progressed to chronicity. Chronic BPF is a serious complication of several pulmonary and postoperative conditions, as it carries a high morbidity and mortality and is associated with prolonged hospital stay and thus high resource consumption. The treatment of BPF includes control of infection, pleural space drainage, surgical interventions and bronchoscopic interventions. Till date surgical intervention has been the main stay of management of chronic BPF (1–4).

This study was carried out to assess the efficacy of surgical closure of the chronic BPF using vascularized tissue transfer into the pleural cavity.

2. Patients and methods

This prospective randomized study was carried out in Abassia chest hospital and El-Hussein university hospital, Cairo, Egypt in the time period from February, 2015 to April, 2016. 28 patients operated upon primarily due to chronic BPF with or without empyema. All patients were selected and subjected to surgical intervention using vascularized tissue transfer into the pleural cavity. Postoperative or non-operative etiologies were included in this study. The classical clinical picture was a patient with pneumothorax on chest tube drainage showing varying bubbling during respiratory cycle and failure of lung to expand despite adequate pleural cavity drainage and antibiotic therapy. Fifteen patients had had associated stage 2 empyema on the time of intervention. The following steps were followed:

- All the relevant investigations including HRCT chest were carried out.
- Bronchoscopic examination of the bronchial tree
- Adequate preoperative drainage of the pleural cavity
- Preoperative planning and selection of the vascularized tissue which is suitable for transfer
- Intraoperative debridement and sterilization of the pleural cavity
- Closure of the BPF and coverage with the vascularized tissue
- Follow up of the case periodically.

Out of 28 patients, localization of the lesion was successfully done using the bronchoscope in 17 patients with failure to localize the site of bubbling during the procedure in the remaining patients. All our patients had chest thoracostomy tube for drainage of air and associated empyema. The duration of drainage varied significantly from one patient to another. After exploration, the site of fistulas with its necrotic edges was exposed (Fig. 1). The vascularized tissues had been used were: Intercostal muscle flap, Latissimus dorsi muscle transposition, Omental flap, pericardial pad of fat.

Latissimus dorsi muscle was transposed into the pleural space in 5 patients. Those patients had an apicolateral BPFs associated with empyema and post resection residual space (Fig. 2A&B). After marking the edges of the latissimus dorsi, a longitudinal incision along the anterior border of the muscle was done followed by subcutaneous dissection, to expose its anterior surface was performed. Separation of the latissimus dorsi from the serratus anterior muscle followed by cutting through its origin was done. Meticulous isolation of the vascular pedicle formed from thoracodorsal

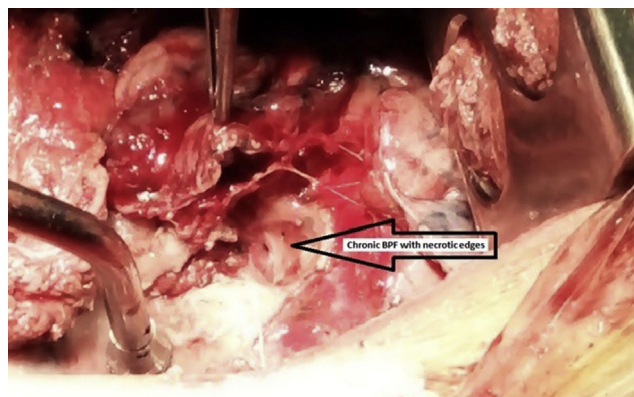


Fig. 1. Chronic BPF with necrotic edges, intraoperative view.

Download English Version:

<https://daneshyari.com/en/article/8668716>

Download Persian Version:

<https://daneshyari.com/article/8668716>

[Daneshyari.com](https://daneshyari.com)