Editorial

Is indwelling pleural catheter placement worthwhile for pleural effusion after lung resection?

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We read with interest the case series reported by Reinoso and co-workers (1). The series included twelve patients with persistent symptomatic pleural effusions after lobectomy and/or segmentectomy for lung cancer. They had indwelling pleural catheter (IPC) placement for drainage of pleural effusion at a median of about two months after lung resection and all achieved spontaneous pleurodesis. The data provides further support for extending the use of IPC for definitive control of recurrent symptomatic pleural effusions, which could be tough to manage on clinicians' perspective. IPC placement can potentially be useful as a blanket approach for facilitating earlier discharge or preventing hospitalization after lung resection. While this notion is encouraging to clinicians and thoracic surgeons alike, the study has stimulated thoughts and has opened up a Pandora box for further discussion.

Pleural effusion is a common observation after resection of lung parenchyma. The formation of pleural effusion is thought to be part of the compensatory response of the body for filling up the residual pleural space, when pleural air gradually dissolves and the resected bronchi heals (2). The net gain in pleural fluid formation is the result of the complex balance of multiple factors, including increased fluid filtration from reduced vascular bed, altered microvascular permeability from tissue injury, impaired lymphatic drainage, and other systemic or underlying factors. The fluid production rate, and thus the drainage volume per day, varies between patients and this has aroused controversy in the timing of removal of chest drain after lung resection (3). In general, majority of the pleural effusions resolves gradually and spontaneously over time. Only 1–4% of the patients who received lung resection of curative intent for lung cancer required repeated thoracentesis for recurrent pleural effusion shortly after the operation. The observed incidence of recurrent pleural effusion in the present study was 9% (38/422), higher than previous literatures. The difference in occurrence of pleural effusion could be accountable by variables related to the malignancy, patients' co-morbidities or the surgery. The issue was not elaborated in details in the study. If modifications or optimization in some of these factors could have reduced the occurrence of pleural effusion (4), it would be worthwhile to investigate further, as the use of IPC as a blanket approach is not entirely without concerns or risks. The study reported the presence of pain in high percentage (66%) of the subjects after IPC insertion, yet whether it only occurred after the insertion and any contribution from alternative causes remained elusive. After all, the aim of IPC is for symptomatic control of dyspnea, and it is not definitive as a management for the underlying cause of the pleural effusion. On the other hand, there were studies on the use of colchicine and nonsteroidal anti-inflammatory

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drugs for treatment of postoperative pleural effusion following lung resection (5,6). How these medications compare to the use of IPC, in terms of efficacy, tolerability, and cost-effectiveness, should be examined further.

There are many possible etiologies for recurrent pleural effusions after lung resection. Recurrent malignancy is one particular concern, and negative pleural fluid cytology may not be adequate in ruling out recurrence. Obliteration of the pleural space with pleurodesis could pose difficulty for attempt of pleural procedures or pleuroscopy for histological confirmation of recurrence. The issue could be of concern for the three patients, one with pathological stage IIIB and two with stage IIIA (1), who had moderate risk of recurrence of lung cancer upon follow up.

Given the above uncertainties, we eagerly look forwards to more data and prospective studies on the use of IPC, in comparison to other measures, in the context of recurrent pleural effusion after curative resection for lung cancer.

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