Primary spontaneous pneumothorax. Is video-assisted thoracoscopy stapler resection with pleural abrasion the gold-standard?

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Spontaneous pneumothorax is a common disorder with an incidence of between four and nine cases per 100,000 per year. Tube thoracostomy is the usual initial treatment and has been successful in most patients. The greater liability of pneumothorax to recur constitutes a special problem since the chances of a further recurrence increase with the number of episodes. The effective way to resolve the pneumothorax and prevent recurrences is surgical excision of the pathological lesion related to its onset (blebs or bullae) associated with pleural surface fusion.

We submitted 133 patients, 113 males and 20 females (median age 26, range 12–37 years) to video-assisted thoracoscopic surgery (VATS) procedures for primary spontaneous pneumothorax. Nineteen were operated on for persistent air-leak after first episode, 114 for recurrent pneumothorax; four patients were operated on for contralateral episode after the first intervention. In 107 operations out of 137 (78%), blebs or bullae were identified and submitted to stapler resection; every patient underwent pleural abrasion.

Persistent air-leak for more than 7 days (median 9, range 7–12) in six (4.3%) and bleeding in three out of 137 (2.2%) operations were encountered. One out of five was of minimal entity and did not require any management; the other four were submitted to re-do VATS, stapler resection of recurrent parenchimal blebs and pleural abrasion. Postoperative hospital stay was uneventful.

The international literature reports recurrence rates of pneumothorax ranging from 2.1 to 7.9% and from 0 to 4.5% for pleural abrasion and limited pleurectomy, respectively [1–3]. An interesting review of multi-institutional data for about 1365 patients refers recurrence rates of 0, 2.7, 4.4 and 7.9% when talc poudrage, parietal pleura coagulation, apical pleurectomy and pleural abrasion were compared [4]. Extensive pleurectomy and talc poudrage seem to be the only two procedures allowing complete control of pneumothorax recurrences [4,5]. Both procedures are related to significant postoperative pain, increased perioperative complication rate and impaired long-term pulmonary function.

Our results are similar to those published in the literature and a 3.6% recurrence rate is quite similar to those reported about apical pleurectomy by VATS. Using thoracoscopy with stapled wedge resection and pleural abrasion, we have demonstrated a short postoperative chest drain duration and hospital stay. We think that the goal in the surgical management of spontaneous pneumothorax is to secure the less recurrence rate with no mortality and quite null morbidity and functional impairment, even if transitory, in young health patients. After consideration of all the above-mentioned factors, we consider video-assisted thoracoscopy with stapler resection and pleural abrasion the gold standard in the management of spontaneous pneumothorax.

References


