



## Management of localized pneumothoraces after pulmonary resection with intrapulmonary percussive ventilation.

**Gatani T, Martucci N, La Rocca A, La Manna C, Scognamiglio F, Salvi R, Rocco G.**

Department of Thoracic Surgery and Oncology, Division of Thoracic Surgery and Service of Pulmonology, National Cancer Institute, Pascale Foundation, Naples, ITALY.

**BACKGROUND:** Intrapulmonary percussive ventilation (IPV) aims at clearing retained secretions through oscillary vibrations generated by high frequency bursts of gas delivered into the airways at rates between 200 and 300 breaths per minute and at a delivery pressure of 10 to 20 CmH<sub>2</sub>O. In addition, IPV can improve recruitment of alveolar units and deliver aerosolized medications. The use of IPV to resolve challenging postlobectomy localized pneumothoraces is hereafter described.

**METHODS:** Between January 2005 and March 2009, four patients with long-term complicated postresectional residual air spaces persisting 6 months (mean, 187 days) after primary surgery were treated by IPV. The type of operation was upper lobectomy and lower lobectomy-wedge resection in 1 and 3 patients, respectively. Mean preoperative and immediate postsurgical forced expiratory volume in the first second of expiration were 2.31 L and 1.49 L, respectively. Mean preoperative and immediate postsurgical forced vital capacity were 3.13 L and 2.1 L, respectively. Patients were subjected to 12-minute-long IPV sessions up to a total of 8 to 12 sessions administered every other day in an outpatient setting.

**RESULTS:** Complete resolution of the spaces within a mean of 22 days of beginning of treatment was noted. The post-IPV forced expiratory volume in the first second of expiration and forced vital capacity were 1.72 and 2.4 liters, respectively. No treatment-related morbidity was observed.

**CONCLUSIONS:** Intrapulmonary percussive ventilation can be expected to decisively contribute to resolving long-term localized pneumothoraces after subtotal pulmonary resections in an outpatient setting.

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