00315 Assessment of BCV for prevention of hypoventilation during interventional bronchoscopy using a rigid bronchoscope

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Background:
Interventional bronchoscopy using a rigid bronchoscope requires deep general anesthesia to prevent bucking and body movement during treatment, and the weak point about this technique is the possibility that excessively deep anesthesia can inhibit patient respiration and result in hypoxia. There is no effective way to overcome this problem.
Objectives:
The purpose of this study was to investigate whether the use of Biphasic Cuirass Ventilation (BCV) using a rigid bronchoscope can prevent hypoventilation during interventional bronchoscopy.
Methods:
Between August 2010 and October 2013,14 patients received interventional bronchoscopy by a rigid bronchoscope with combined use of BCV. The underlying diseases/disorders in these 14 patients included tracheal stenosis secondary to lung cancer in 11 patients, post-intubation tracheal stenosis in 1, rt. bronchial stenosis due to esophageal cancer in 1, and post-tuberculosis bronchial stenosis in 1. BCV was used in all patients, and Tidal volume, SaO2, PaCO2, and frequency of discontinuation of procedure were monitored.
Results:
The treatment procedure could be safely performed in all the patients. It was possible to fully maintain minute ventilation during treatment and none of the patients experienced discontinuation of procedure due to hypoxia. Therefore, patients were able to receive sufficient anesthesia, which could lead to reduced bucking during treatment. There were no complications associated with BCV.
Conclusion:
During interventional bronchoscopy using a rigid bronchoscope, the use of BCV enabled the maintenance of ventilation during treatment and administration of sufficient anesthesia, suggesting potential clinical usefulness. We strongly recommend this technique to be tested further, especially in medical facilities that have hesitated to use a rigid bronchoscope or those anxious about respiratory management during treatment using a rigid bronchoscope.