Remifentanil in the Management of a patient with an Obstructive Mediastinal Mass and Carcinoid Tumor

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Introduction:
Mediastinal masses present a challenge for the anesthesiologist. They may cause major airway obstructions along with cardiovascular compression, each of which may incur disastrous consequences. Often bronchoscopy for maintenance of airway and biopsy is required. Flexible fiberoptic bronchoscopy, with sedation and local anesthesia can be used in adult patients; however, this may not be feasible in younger patients. A multidisciplinary strategy must also be established in order to prepare for immediate intervention should catastrophic cardiorespiratory collapse or intrathoracic hemorrhage occur. In such cases, maintenance of spontaneous ventilation at all times and avoidance of muscle relaxants are recommended.

Case Report:
We present the case of a 15-year-old male for a rigid bronchoscopy and biopsy of an obstructive bronchial lesion. There was also a history of pneumomediastinum due to the tumor eroding the bronchial wall. Following IV glycopyrrolate, anesthesia was induced with gradually increasing concentrations of sevoflurane in oxygen. A remifentanil infusion (0.025-0.1 mcg/kg/min) was used along with boluses of ketamine (20-50mg/bolus) as an adjunct to anesthesia. A biopsy was performed with ventilation through a rigid bronchoscope with the patient breathing spontaneously. Excellent hemostatic control was attained with the use of epinephrine 1:100,000 solution to the lesion precluding the need for fiberoptic right endobronchial intubation. Of note, postoperative tumor pathology indicated that it was a rare carcinoid tumor, often associated with respiratory complications such as bronchospasm, and labile intraoperative blood pressure.

Discussion:
Carcinoid tumors are a rare neuroendocrine neoplasm. The incidence is approximately 0.28 per 100,000 population. Of these cases, only 22% are found in the lung. Variability in symptoms are often associated with the degree of release of vasoactive proteins, histamine, and serotonin into systemic circulation from the tumor or metastatic lesions. We concluded that Remifentanil may be a useful anesthetic in these circumstances, because of the apparent ability to attain a sufficient depth of anesthesia for airway procedures without abolishing spontaneous respiration.

References:
Vaughn D.J.A, Brunner M.D, Anesthesia for Patients with Carcinoid Syndrome, PubMed.

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Avg. Diameter:
A: 6.47 mm
B: 11.5 mm
1 - 6.47/11.5 = 43.88%