Selective Lobar Bronchial Blockade Utilizing Two Bronchial Blockers

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INTRODUCTION

One-lung ventilation (OLV) in the pediatric population presents special difficulties that are not as commonly encountered on adult patients. We present a case report where selective lobar bronchial blockade was achieved utilizing two bronchial blockers.

CASE PRESENTATION

A 7-year-old (21 kg) male child with a history of Wilms’ tumor and newly diagnosed pulmonary nodules presented for thoracoscopic lung biopsies. The surgical team requested one-lung ventilation to facilitate the procedure.

Anesthetic induction and endotracheal intubation (5.0 cuffed) transpired uneventfully. We used a fiberoptic scope to place an extraluminal Arndt bronchial blocker (5 Fr) in the right main bronchus. When the blocker’s cuff was inflated proximal to the right upper lobe (RUL) bronchus, the cuff herniated into the trachea and resulted in airway obstruction. After the blocker was repositioned more distally in the right main bronchus to prevent cuff herniation, blockade of only the right middle and lower lobes was achieved. To accomplish complete right lung isolation, a second extraluminal bronchial blocker was inserted more proximally to achieve RUL collapse. The surgical procedure proceeded smoothly with satisfactory OLV throughout.

DISCUSSION

Several options exist for OLV in children: selective endobronchial intubation (EBI), bronchial blockers, and double-lumen endotracheal tubes (DLT). In this case, we present the unique use of two bronchial blockers to establish OLV. This technique was utilized due to both the child’s small size precluding DLT placement and the difficulty encountered when positioning a single bronchial blocker. While left EBI would have been reasonable, there is the potential for inadvertent extubation when retracting the tube at the end of the case in order to resume double lung ventilation. Furthermore, clinical scenarios exist where left EBI may be undesirable (e.g. mass in left main bronchus).

CONCLUSION

Selective lobar blockade with dual bronchial blockers is not well-described in the pediatric literature. However, this OLV technique may be considered in children when the benefits of bronchial blockers are desired.

REFERENCES
