

Letter to the Editor

A successful case of pediatric tracheal tube exchange utilizing gum-elastic bougie and videolaryngoscope

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Here we report on our experiences with successful pediatric tracheal tube exchange utilizing the gum-elastic bougie (GEB; SmithMedical, USA) and videolaryngoscope (Pentax-AWS Airwayscope[®]; Hoya, Japan) with an infant-size Intlock in a ventilated child, whose condition was complicated by pneumonia and dilated cardiomyopathy.

A 2-year-old female (height 77 cm; weight 8.8 kg) was transferred to our emergency department due to severe dyspnea and vital sign collapse. She was diagnosed with cardiac failure due to dilated cardiomyopathy associated with pneumonia. We performed emergent tracheal intubation with a tracheal tube with an internal diameter (ID) of 3.5 mm, and sedated her with midazolam and dexmedetomidine. Intensive care was continued with antibiotics and mechanical ventilation, and catecholamine support with dobutamine was added. Demands for secretion management and ventilator weaning dictated tracheal tube exchange with a larger size tube. To avoid cardiopulmonary collapse associated with tube exchange or prolonged hypoxia, we decided to perform tracheal tube exchange with

AWS and GEB. First, we inserted an infant-size Intlock into the AWS with infant-size Introck and visualized the glottis. Then, we placed the GEB into the trachea through the tracheal tube. Following this, we attempted to exchange the tracheal tube with a tube of 4.5 mm ID, but were unable to do so. However, intubation was successful with a 4.0 mm ID tube. During this procedure, we observed no changes in vital signs including oxygenation.

This particular individual's condition was complicated by severe cardiopulmonary collapse associated with dilated myocardopathy, and tracheal tube exchange required minimum interruption of oxygenation and stress by laryngoscopy. GEB is usually utilized for difficult laryngoscopy [1]. Furthermore, there is a report of successful tube exchange utilizing GEB in adult case [2]. In this case, use of the GEB allowed us to exchange the pediatric tracheal tube without leading to oxygenation failure. Evidence from pediatric cases increasingly indicates that the videolaryngoscope such as AWS is suitable for difficult airway management and emergent situations [3]. The new infant-sized Intlock can fit with internal diameter tubing 3.5 mm or less and provide good laryngeal view [4]. In addition, laryngoscopy with AWS allowed for an improved laryngeal view with minimal change in vital signs [5].

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