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Negative pressure pulmonary edema following thyroidectomy

To the Editor:

A 60-yr-old female presented with a two and a half year long history of neck swelling. Initially she was diagnosed as having Grave's disease and treated with antithyroid drugs. Examination of the neck revealed a small diffuse thyroid swelling with no obvious retrosternal extension. Otorhinolaryngology (ENT) examination, electrocardiography, thoracic inlet and chest *x-rays* were normal. Flow volume loop showed variable extrathoracic obstruction. Computed tomography scan of the neck and fiberoptic bronchoscopy revealed slight tracheal narrowing. She underwent thyroidectomy and her intraoperative course was uneventful. Approximately ten minutes after extubation, the airway became obstructed. She had marked tracheal tug and intercostal indrawing. The airway obstruction was unrelieved by positive pressure ventilation using a Guedel's airway and facemask ventilation with an anesthetic breathing system. The trachea was reintubated and there was no evidence of laryngeal edema. Following intubation pink froth was noted coming out of the endotracheal tube (ETT). The patient was treated with furosemide, aminophylline, morphine and positive pressure ventilation in the intensive therapy unit (ITU). She received *iv* dexamethasone in ITU for 48 hr. After three days of ventilation in the ITU her pulmonary edema resolved. Direct laryngoscopy and rigid bronchoscopy by an ENT surgeon revealed right vocal cord palsy and moderate tracheomalacia. As there was no evidence of airway obstruction while breathing spontaneously following rigid bronchoscopy, it was decided to extubate the trachea. She again became increasingly dyspneic with marked tracheal tug and intercostal indrawing. The trachea was reintubated and mechanical ventilation resumed. Finally, the trachea could be extubated after four days. The rest of her post-operative course was uneventful.

Tracheomalacia is an important clinical problem complicating long standing goitre.^{1,2} Tumour, strabulation, interrupted hanging, laryngospasm, ETT suctioning, bilateral vocal cord paralysis, aspirated for-

eign body and pseudomembranous cast³ are just a few causes of pulmonary edema reported to date. To our knowledge, pulmonary edema secondary to postthyroidectomy tracheomalacia has not been described before. The mechanism involves an alteration in pulmonary microvascular pressure together with an increase in pulmonary capillary permeability. These are due to changes in Starling forces of pulmonary circulation, hemodynamic changes secondary to negative intrathoracic pressure, as well as hypoxia and a hyperadrenergic state.⁴ Tracheostomy or leaving the tube *in situ* for a few days are well recognized methods for managing tracheomalacia.⁵ Had extubation been unsuccessful we would have proceeded to carry out a tracheostomy as distal as possible to enable location below the involved tracheal segment.¹

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Myasthénie et anesthésie pour chirurgie abdominale en urgence. Anesthesia for urgent abdominal surgery and myasthenia gravis

Monsieur le rédacteur,

Nous décrivons la prise en charge d'un patient myasthénique grade IIA (diplopie et faiblesse généralisée modérée) opéré en urgence d'une laparotomie.