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Benign Tracheal Stenosis after prolonged intubation

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ABSTRACT: Prolonged endotracheal intubation may lead to altered tracheal blood flow, resulting in mucosal injury and scarring followed by tracheal stenosis. We report a case of the tracheal stenosis after prolonged endotracheal intubation from balloon cuff pressures. In this Bronchoscopic Image, we provide endoscopic images and descriptions of the bronchoscopic findings along with a brief discussion of the management for this complication.

Key Words: cuff pressure, tracheomalacia, tracheal stenosis.

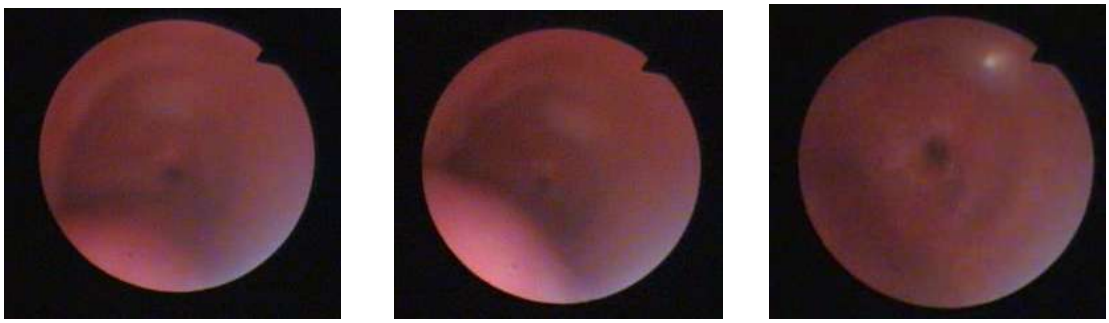
I. CASE PRESENTATION:

A 45-year-old man was admitted in our clinic 2 month after accident from mine in border between Albania -Kosovo. The patient's hospital course was complicated by limited neurologic recovery, aspiration pneumonitis, and adult respiratory distress syndrome requiring an extended period of mechanical ventilation. In first presentation he has cough, moderate dyspnea and malaise. Flexible bronchoscopy was performed, first from above the tracheostomy revealing leakage of air bubbles from around an inflated cuff with underlying granulation tissue. Erosion of the mucosa overlying the tracheal rings was visualized in the region where the balloon cuff had been positioned. (Fig.1) After 21 days the patients admitted was results with seriously tracheal stenosis and he has indications for tracheal dilatation or stend.

He has severe dyspnea and stridor and moderate chest pain.

Follow-up bronchoscopy revealed severe damage of the tracheal lumen associated with web-like stenosis and he has been emergency tracheal stend (Fig.2).

Fig.1



Severe Tracheal Stenosis (Web -like Stenosis)

Fig.2

II. DISCUSSION:

Although placement of cuffed a tracheostomy can provide an airway seal and thus prevent microaspiration of oropharyngeal secretions and loss of tidal volume in ventilated patients, they are not without risk for complications. Specifically, patients with cuffed tracheostomy tubes are at a risk for complications of balloon over-inflation resulting in elevated cuff pressures [1]. These complications include ischemia and pressure necrosis, formation of tracheal wall defects, tracheomalacia, airway stenosis, and growth of granulation tissue [1] [3]. There are differing opinions about whether the injury is related to amount of cuff pressure or length of time the inflated cuff is in direct contact with the trachea. Pressures above this level have been shown to impair capillary perfusion in tracheal mucosa [5]. In the case presented, we hypothesized that the etiology of the complication described was multifactorial in nature, resulting from inadequate monitoring of the cuff pressure over an extended period of time and in the timeframe after the repair of a traumatic injury [1].

This Bronchoscopic Image re-enforces the importance monitoring and maintaining of trachea in patients with intubations for prolonged period.[6].

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