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RESEARCH ARTICLE

An unusual case of iatrogenic airway obstruction and its management in a low-resource setting.

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Abstract

Fibrinous or membranous tracheal lesions causing subglottic tracheal obstruction are an uncommon cause of potentially fatal complications after tracheal extubation. We report a case of 20-year-old male with two episodes of apneic spells with airway obstruction following tracheal extubation at a community health centre which resolved spontaneously. The patient developed stridor and acute respiratory distress 2 days following tracheal extubation. On evaluation at our hospital, computed tomography chest revealed a tubular and curvilinear membrane in upper trachea at D1-D3 levels. An urgent fibre optic bronchoscopy revealed a tracheal mucosal flap causing 80% obstruction of the subglottic trachea which was suctioned out. The patient eventually made a full recovery. The low incidence of similar lesions and the lack of distinguishing clinical features from other causes of post-extubation stridor make diagnosis and appropriate management of this life-threatening condition difficult. We discuss this case of iatrogenic mucosal tear in the trachea which caused a one-way valve effect, obstructing the airway and manifesting as post-extubation stridor and how early consideration of the diagnosis and optimal management reduce the risk of an adverse outcome.

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Case report:-

A 20-year-old male presented to us with complaints of two episodes of sudden apnea which lasted for approx. 30 seconds in last 72 hours associated with acute respiratory distress. The patient had a recent history of endotracheal intubation following an electrical injury sustained five days earlier. He had no significant past medical, surgical, or psychiatric history. Other systems were unremarkable. A chest X-ray (Fig.1) revealed no significant abnormality. Computed tomography chest (Fig.2) showed tubular curvilinear membrane at D1-D3 level. Examination using a fibre optic bronchoscope revealed an upper tracheal mucosal injury (Fig.3). Positive endoscopic findings included circumferential injury and slough at upper-trachea, and a mucosal flap, almost occluding the distal airway (approximately 80%), from 10 o'clock to 4 o'clock. The carina and larynx were normal. The mucosal flap was manipulated using suction and removed. Following the procedure patient had no further incident or respiratory sequelae.

Discussion:-

Airway obstruction is one of the primary causes of respiratory distress after tracheal extubation [3, 4]. Obstructive subglottic tracheal lesions such as the one presented are an uncommon contributor to the incidence of post-extubation stridor, but critically significant because of their life-threatening nature [1]. Tracheal wall injury during intubation or due to tracheal tube movement during surgery has been implicated [1, 2]. Other suggested causes of obstructive subglottic tracheal lesions include ischaemia and inflammation due to excessive pressure at the site of the tracheal tube cuff, use of inappropriately large tracheal tubes, and prolonged intubation [1, 2]. Inconsistency in the clinical course and lack of distinguishing clinical features of such tracheal lesions, as well as their apparently rare incidence, makes a correct initial diagnosis problematic. The approach to the patient with stridor of unknown aetiology should be dictated by the individual clinical situation. If the clinical situation allows for conservative management, then this

has been reported to be an ineffective alternative to surgery in some cases [6]. In more urgent scenarios, if satisfactory clinical observations and respiratory parameters can be maintained, the best initial management is to proceed to emergency bronchoscopy where examination under direct vision can be achieved under more controlled conditions and definitive management instigated.

This case emphasises the importance of considering subglottic tracheal mucosal lesions in the differential diagnosis of the patient with stridor and respiratory distress, especially if this is unresponsive to conventional therapy. Although such lesions may be life threatening, optimising initial management can result in a favourable clinical outcome with no significant sequelae.

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