TRACHEOMALACIA AS AN UNUSUAL CAUSE OF UPPER AIRWAYS OBSTRUCTION LEADING TO CARDIAC ARREST

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INTRODUCTION

Tracheomalaciais one of the complications, which usually results from prolonged compression of trachea by expanding and longstanding goitre, particularly having an extension in the thoracic inlet. Respiratory embarrassment due to compression of the upper airways by the growing goitre is an indication for surgery, but the residual problem of tracheomalacia which develops after thyroidectomy is a life-threatening postoperative complication[1]. In rare cases patients develop symptoms preoperatively even without thyroid extension in the thorax. This case report emphasizes the need for extra care and vigilance while sedating and managing the outbursts of aggression in psychiatric and elderly patients especially with compromised airways.

CASE REPORT

A 65 years old lady presented to our hospital with aggressive outbursts, making tall claims, reduced sleep and appetite and engaged in scuffles for the last 04 weeks i.e., psychomotor agitation. She was on treatment for her long standing bipolar affective disorder, but was not very compliant. She developed uncontrolled emotional component, interspersed with weeping spells, disinhibited demeanor, taking off her clothes in front of her family members, climbing walls and chasing cats and on several occasions had tried to run away from her house for no reason. These symptoms were aggravated two years back after the death of her daughter who, too, had a large goitre, and died during her caesarian section in some private hospital. She was hospitalized for her current manic episode and was prescribed tab Valproic acid 500 mg 08 hourly, tab Risperidone 1mg twice daily, tab Mirtazepine 30 mg at night along with inj Midazolam 2 mg IV on as required basis. During hospital stay she became unresponsive and hypotensive and was shifted to intensive care unit (ICU).

After careful assessment, a 7 mm internal diameter cuffed endotracheal tube was passed and she was placed on ventilator as she had obstructed airway and inadequate breathing effort. Patient was weaned off successfully 24 hours later after her condition improved. Half an hour after extubation, she had again difficulty in breathing, became restless and cyanosed so had to be reintubated and put on ventilator. She was kept sedated and paralysed with intermittent boluses of inj Midazolam 2.5 mg and inj Atracurium 25 mg respectively and the antipsychotic drugs were continued through a nasogastric tube. She was weaned off the ventilator after three days. For the next 24 hours she remained stable with normal hemodynamic parameters but then again went into cardiac arrest secondary to respiratory embarrassment. Immediate cardiopulmonary resuscitation was started; she was revived and placed on ventilator. The relevant causes for her repeated respiratory embarrassment were re-evaluated. Her x-ray films of cervical spine and chest showed tracheal shift towards right and

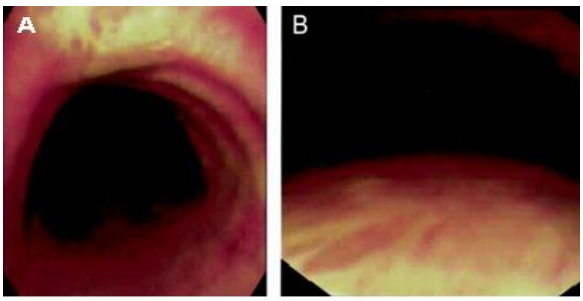

Figure-1: Fiberoptic view of trachea during inspiration (A) and collapse during expiration in tracheomalacia (B).

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fiberoptic laryngotracheobrochoscopy revealed tracheal collapse during expiration (fig-1). Keeping in view her clinical presentation, physical examination, radiological and laryngotracheobrochoscopic findings, the diagnosis of tracheomalacia was made. Subtotal thyroidectomy along with tracheostomy under general anesthesia was planned.

At the end of surgery, endotracheal tube was removed and the breathing circuit was connected with tracheostomy tube. On the establishment of adequate breathing, patient was observed in post anesthesia care unit till the recovery before shifting her back to ICU. Finally patient's tracheostomy tube was removed successfully after 7 days and she was shifted to psychiatry ward for further psychiatric management and care, from where she was discharged home after 22 days of hospitalization with an advice of fortnightly follow up in the psychiatry outpatient department.

DISCUSSION

Tracheomalacia is characterized by flaccidity of the tracheal support cartilages which leads to tracheal collapse during expiration especially when increased airflow is demanded. It is commonly seen post operatively in long standing goitre along with thoracic extension[2]. Thyroidectomy for such goitres is an anesthetic and surgical challenge due to the possible association of difficult intubation, thoracic extension, tracheomalacia, skin involvement, displaced and distorted anatomy[3]. A review of the literature revealed that massively enlarged goitre was often associated with tracheomalacia, tracheal stenosis and retro sternal extension[4,5]. Difficulty during anesthesia was most often encountered in establishing the airway and surgeons faced problems in exposure of the gland particularly when the skin was involved[6]. The commonest postoperative complications were related to respiratory distress as a consequence of tracheomalacia and tracheal stenosis[7]. In spite of the technical challenges related to the airway and anesthesia, surgical interventions including, staged tracheoplasty, aortopexy, tracheopexy, tracheobronchoplasty, tracheal suspension, extrinsic tracheal neo-rings and intraluminal tracheal splints have been used successfully[3]. Subtotal thyroidectomy followed by tracheostomy remains to be the best option in experienced hands due to its distinct advantage of immediate effect and complete resolution of compressive symptoms. Such cases require multi-disciplinary approach by involving surgeons, otolaryngologists, anesthesiologists and psychiatrists.

In our patient the agitated mental state was brought close to normal after a lapse of about 3 weeks. The concomitant goitre with an underlying tracheomalacia had predisposed her for the scenario, resulting in collapse of airways and respiratory embarrassment leading to cardiac arrest.

CONCLUSION

This case report highlights the risks of sedatives in a patient with compromised upper airways and the requirement of a dedicated multi-disciplinary team to manage such cases.

CONFLICT OF INTEREST

This study has no conflict of interest to declare by any author.

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