

Case Report

Endoscopic coblation assisted laryngo pharyngeal corrosive stricture adhesiolysis-the first of its kind

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ABSTRACT

Corrosive pharyngeal strictures without significant damage to esophagus and stomach were rarely reported. Here we report a case of corrosive acid poisoning with laryngopharyngeal strictures suffering for 39 years with difficulty in breathing, swallowing, phonation and sleep for whom endoscopic coblation assisted stricture adhesiolysis was done which was the first of its kind to our knowledge. As early as 5th postoperative day tracheostomy was decannulated, and the patient was able to swallow soft solids without maneuvers, liquids without nasal regurgitation, breathing via naturalis, phonating with normal neck position and a good sleep with no recurrences in 12 months follow up.

Keywords: Corrosive, Coblation, Pharynx, Stricture

INTRODUCTION

Management of corrosive poisoning in adults and children acquires prime significance in view of its devastating permanent ailments over the basic life functions like breathing, swallowing and phonation. Here we report a case of corrosive acid poisoning in childhood living with great difficulty for 39 years relieved off his ailments by coblation adhesiolysis which was the first of its kind to be reported. However extensive corrosion of esophagus requires a radical laryngopharyngo esophagectomy with gastric pull through.^{1,2}

CASE REPORT

A 42-year-old male patient from Myanmar presented to the ENT OPD with the history of accidental corrosive acid poisoning at the age of 3 years for which he was treated and tracheostomized till 7 years of age. He complained of having dysphagia to solids and nasal regurgitation on taking oral liquids. He found hard to survive with only semisolids that too with swallowing maneuvers. He had to turn his head to one side to phonate

too. He suffered with difficulty in breathing on exertion and during nights, with disturbed sleep, choking sensation and day time sleepiness. On presentation, he was thin short statured, ill built and nourished.



Figure 1: Diffuse dense fibrous bands extending between epiglottis, right aryepiglottic fold, lateral and posterior pharyngeal walls leaving two tiny holes of 5-6mm.

There was a narrow tracheocutaneous fistula in the anterior neck at the previous tracheostomy site with

active leak during breathing and phonation. Rigid videolaryngoscopic examination showed diffuse dense fibrous bands extending between epiglottis, right aryepiglottic fold, lateral and posterior pharyngeal walls leaving two tiny holes of 5-6mm, through which the posterior commissure and the normal mobility of vocal cords were visualized (Figure 1).



Figure 2: Postoperative pharyngolaryngeal endoscopy showing widened pharyngeal space through which glottis is seen.

Due to chronic hypoxia, he developed secondary polycythemia (Hb 20mg/dl). CT neck confirmed the finding with no laryngeal or tracheal stenosis. He was planned for Endoscopic coblation assisted laryngopharyngeal stricture adhesiolysis as a two-staged procedure. In the first stage revision tracheostomy was done proceeded with general anaesthesia and endoscopic coblation assisted adhesiolysis of posterior pharyngeal wall bands were done with great caution so that the line of ablation is along the posterior pharyngeal wall so that the tiny holes got widened enough. 2 weeks later second stage procedure was planned and complete lateral pharyngeal bands, right aryepiglottic fold adhesiolysis with partial reduction of epiglottis was done (Figure 2).

Postoperatively the patient was on nasogastric tube for 1 week. As early as 5th postoperative day tracheostomy was decannulated and the patient tolerated well. After his long 40 years' ailment patient was able to swallow soft solids without maneuvers, liquids without nasal regurgitation, breathing via naturalis, phonating with normal neck position and a good sleep with no recurrences in 12 months follow up. A pubmed database search was done and to our knowledge endoscopic coblation assisted laryngopharyngeal corrosive stricture adhesiolysis is the first of its kind and reported here.

DISCUSSION

Corrosive acid poisoning though reported less in the modern era, updated knowledge on its management is necessary to avoid its serious morbidity and mortality. Accidental corrosive ingestion is more common in children whereas in adults it is more of suicidal intention.¹ The acute management of corrosive poisoning

and, the management of esophageal and gastric strictures are beyond the scope of this article.

The main long term complication of corrosive poisoning is stricture formation which occurs in 90% patients with third degree burns and 15-30% of patients with second degree burns.¹ Corrosive pharyngeal strictures without significant damage to esophagus and stomach occur rarely as in the above reported case. Haller et al documented that 70% of their patients with pharyngeal burns did not have significant esophagus damage.² This may happen when the accidentally ingested material is vomited out before entering the third stage of swallowing.

A lumen of more than 10mm diameter is thought of enough to lead a normal life and can be left unintervened.³ But in the above reported case only a 5-6mm pharyngeal gap, warrants a surgical intervention to lead a normal life. The timing of surgical intervention for corrosive stricture of upper GI tract also gains significance as the average time for complete fibrosis is 6 months to 1 year.⁴

Most reported cases of pharyngeal strictures were treated with dilatations, LASER ablation, electrosurgical knife, extensive surgeries such as flap, bypass and replacements according to the extension of stricture.⁵⁻¹⁰ To our knowledge this is the first case of corrosive laryngopharyngeal stricture treated with endoscopic coblation assisted adhesiolysis. The low frequency radiofrequency energy in coblation has more precise cutting with coagulation, decreased tissue penetration with controlled coagulation depth, minimal collateral tissue damage with surface temperatures 40°-70°C, less postoperative pain in contrast to electrocautery and LASER.

In view of future scope for managing corrosive strictures, experimental studies are analyzing the successful use of Cytokines like epidermal growth factor (EGF), Interferon- gamma, Interferon alpha- 2b, Octreotide in preventing stricture formation by inhibiting Collagen I and III formation, fibronectin synthesis, thereby depressing the fibrotic activity in the second phase of wound healing.^{11,12} Though the patient fortunately developed remarkable adaptation for his survival by adopting swallowing maneuvers and restricting to only semisolids, the social and psychological implications due to the dysphagia, dysphonia and the active tracheocutaneous fistula made the patient to crave for a permanent remedy to lead a normal life. For the 40 years ailment, the patient visited various places in Myanmar, Thailand and Hong Kong seeking a permanent remedy and finally landed up here. As early as 5th postoperative day tracheostomy was decannulated and the patient could swallow soft solids without maneuvers, liquids without nasal regurgitation, breathing via naturalis, phonating with normal neck position and a good sleep with no recurrences in 12 months follow-up.

CONCLUSION

Clear understanding of the problems and expectations of such patients, customized planning and intervention techniques for every individual, and adopting better newer innovative technologies will help to serve a better life to the longstanding sufferers of corrosive poisoning.

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