Recalcitrant airway stenosis in patients with abnormal scars.

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ABSTRACT

INTRODUCTION

Acquired laryngotracheal stenosis may occur in up to 21% of patients after laryngotracheal reconstruction surgery and/or tracheostomy (1). These patients develop an abnormal increased incisional scar tissue that can be resistant to repetitive-limited and repetitive-tracheotomy procedures. The pathogenesis of laryngotracheal stenosis is believed to be secondary to an abnormal inflammatory response to injury, elevated cuff pressures, chronic inflammation due to debris, along with a hyperactive immune response. All sections of the airway from the subglottis to the terminal bronchioles are vulnerable to inflammatory injury-induced remodeling. The site of laryngotracheal stenosis was in the subglottis in 33% of patients, the supraglottis in 27% and tracheal stenosis was noted in 40%. The etiologies of stenosis were idiopathic in 5/6 patients (83%). Proton pump inhibitors (PPI’s) were used in all patients postoperatively.

METHODS AND MATERIALS

We conducted a retrospective chart review of patients at our institution with a diagnosis of laryngotracheal stenosis. Over a 1-year period, we identified patients who failed initial laryngotracheal reconstruction surgery and required additional procedures. Cases were reviewed for demographic data, cause of stenosis, Cotton-Myer grade, surgical techniques, and outcomes. Patients who had symptomatic scarring and did not require additional procedures were considered treatment successes.

RESULTS

The age of the patients was 34.5, range, 10 to 35 years. See distribution is 5 males to 1 female. Cause of Stenosis: Endotracheal intubation was responsible for 100% of the patients. The median number of days an endotracheal intubation was 17, the mean number of days was 11.5±3.5 days (range 5-30 days).

The site of laryngotracheal stenosis was the subglottis in all patients. All six patients had high-grade stenosis upon initial evaluation. Four patients (67%) presented with Cotton grade III and two patients (33%) presented with Cotton grade IV (complete obstruction). One patient progressed from Cotton grade III to Cotton grade IV after initial intervention.

Results. PPI’s, Proton pump inhibitors; SOB, shortness of breath

Patient | Age | Days Intubated | Cotton | Interventions | Steroids | PPI’s | Mitomycin C | Decumulated | Scarring
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1 | 38 | 5 | III | 2 | Y | N | Y | W + SOB | Y
2 | 55 | Unknown | III | 3 | Y | N | Y | W + SOB | Y
3 | 39 | 15 | III/IV | 3 | Y | Y | Y | N | N
4 | 23 | 7 | IV | 4 | Y | Y | Y | N | N
5 | 42 | 30 | IV | 4 | Y | Y | N | W + SOB | N
6 | 10 | 17 | III | 4 | Y | Y | Y | W + SOB | N

CONCLUSION

Patients with abnormal wound healing may have an inherent propensity to develop high-grade recurrent stenosis.

REFERENCES