Tracheal Compression Secondary to Esophageal Dilatation After a Slipped Nissen Fundoplication: A Case Report

Roy Rajan, M.D., Rose Mary S. Stocks, M.D., Pharm D. and Jerome W. Thompson, M.D., M.B.A.
Department of Otolaryngology – Head and Neck Surgery, University of Tennessee Health Science Center, Memphis, TN

Abstract

Objective: We describe a case report of a child presenting with extrinsic tracheal compression from a dilated esophagus stemming from a slipped Nissen fundoplication.

Study Design: Case Report

Methods: A 20-month-old female found to have extrinsic tracheal compression on bronchoscopy has a CT scan revealing tracheal compression, esophageal dilatation and a paraesophageal hernia. An upper GI-series confirms the presence of a slipped Nissen fundoplication. The patient undergoes a revision procedure to correct this.

Results: The patient’s stridor subsides significantly as well as her neck retractions postoperatively. She tolerates tube feeding without emesis and is discharged home.

Conclusions: In a patient who presents with stridor and frequent emesis after a Nissen fundoplication, a slipped Nissen causing esophageal dilatation should be considered. If it this is found, revising the gastric wrap should alleviate the problem.

Introduction

Stridor is a common reason for referral to an otolaryngologist. After flexible laryngoscopy, the next step is often to perform a direct laryngoscopy and bronchoscopy to evaluate for subglottic and tracheal stenosis causing turbulent airflow. The stridor is often characterized as biphasic or expiratory in these situations.

Tracheal compression may result from a variety of extrinsic causes. It is usually a vascular lesion which causes this in the pediatric population. Esophageal compression of the trachea has been described in the literature, usually from achalasia. We present a report of an infant who was found to have tracheal compression causing stridor and retractions after a slipped Nissen fundoplication.

Case Report

A 20-month old African American female is seen and followed by the otolaryngology service secondary to stridor. The patient has a history of cortical atrophy, blindness, epilepsy, and gastroesophageal reflux disease requiring a Nissen fundoplication and gastrostomy tube. She is receiving metoclopramide, ranitidine, and levetiracetam. She undergoes a direct laryngoscopy and bronchoscopy which shows evidence of laryngomalacia, as well as mild left posterolateral extrinsic tracheal compression. The compression initially appears pulsatile, so the patient is sent for a computed tomography (CT) of the chest to rule out a vascular abnormality.

Before and after receiving ketamine for sedation for this study, the patient appears to have significant stridor, stertor, and retractions. Her pulse oximetry however is still 99%. The patient’s mother states that her breathing pattern was not unusual and typical of her daily activity. Her examination shows some mild neck retractions, stertor, and intermittent biphasic stridor but no perioral cyanosis. Flexible nasopharyngolaryngoscopy reveals mild arytenoid collapse during inspiration. The immediate subglottis appeared normal. The CT scan performed shows significant esophageal dilatation and mild tracheal compression as a result (see images to the left). There appears to be a paraesophageal hernia with what was likely to be a slipped Nissen fundoplication.

The patient is admitted and eventually the Nissen fundoplication is revised with a hernia reduction. The procedure results in less prominent stridor, minimal retractions, and a resolution of the daily emesis.

Discussion

Tracheal compression as a rare presentation of achalasia has been described in the literature. ¹,² There have been no reports however of tracheal compression after Nissen fundoplication secondary to esophageal dilatation. It appears in this case that the enteral wrap came loose and entered into the mediastinum.

As with other causes of extrinsic tracheal compression, treatment is directed at the causative process. In patients that have received antireflux surgery who present with stridor and emesis, the consideration of a slipped Nissen should be in the differential. If this situation is found, then revising the fundoplication should resolve the problem.

References

References