Clinical Manifestations of Ehlers-Danlos Syndrome

Viran J. Ranasinghe MD[1] and Natasha Mirza MD[1]

[1]Department of Otorhinolaryngology – Head & Neck Surgery, University of Pennsylvania, Philadelphia, PA, USA

Abstract

Objective: To present 2 cases of patients presenting with otolaryngologic manifestations of Ehlers-Danlos syndrome (EDS).
Methods: Two patients were identified with hypermobile type EDS from an otolaryngology practice at a single academic medical center. Their cases are reviewed and discussed below.
Results: Both patients had a diagnosis of hypermobile type EDS at the time of presentation. The first patient presented with a nine year history of progressive dysphagia who was found to have a large Zenker's diverticulum. The second patient presented with recurrent temporomandibular joint dislocation and subjective hyoid bone dislocation causing subjective dysphagia and dyspnea.
Conclusion: EDS is a group of hereditary connective tissue disorders that can include joint hypermobility and tissue fragility. We present two interesting manifestations of EDS and review the disease as it pertains to the otolaryngologist.

Introduction

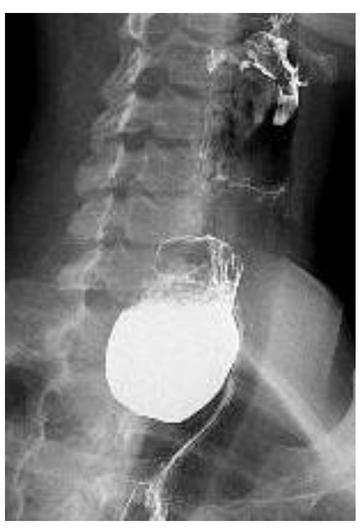
EDS is a hereditary connective tissue disorder, primarily characterized by joint hypermobilty and tissue laxity.[1,2] There are several subtypes of EDS, with the hypermobile type being the most common and the least severe.[2] Complaints are primarily musculoskeletal, and subluxations and dislocations are common occurrences.[1] There is a high potential for disability due to chronic pain from recurrent subluxations and dislocations and the resultant degenerative joint disease. Easy bruising and bleeding tendency are common in EDS, with the underlying cause being weak collagen leading to weak capillary and blood vessel walls.[2] While EDS is primarily regarded as a disease with joint hypermobility, in reality it is a multisystemic disease with a variety of clinical manifestations.[1,2] At our institution we identified 2 patients who presented to the otolaryngology clinic with hypermobile type EDS and manifestations of their EDS that are relevant to the otolaryngologist.

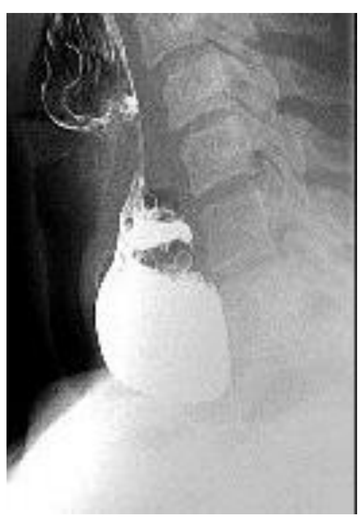
Case 1

A 39 year-old woman presented to an outpatient academic ENT clinic with a nine year history of progressive dysphagia to solids and liquids with worsening regurgitation after meals. Her symptoms had progressed to where she was regurgitating approximately 2 tablespoons of food with each meal. Barium swallow study showed a large Zenker's diverticulum ~5.5cm in size. Fiberoptic laryngoscopy showed regurgitation of food upon valsalva maneuver by the patient. The patient had a diagnosis of hypermobile type EDS that was diagnosed 1 year prior and had known issues with joint hypermobility.

The patient was taken to the operating room for repair of Zenker's diverticulum. Endoscopic repair was attempted but aborted due to concerns about neck extension given her history of hypermobile type EDS and known joint hypermobility. During open cricopharyngeal myotomy and zenker's diverticulectomy there was noted to be increased vascularity of the tissues of the neck. This was expected given her history of EDS however it required meticulous dissection and hemostasis. A very large Zenker's was identified up to the C7 vertebrae. After cricopharyngeal myotomy was performed, the diverticulum sac was isolated and a GIA stapler was used to transect the neck of the sac.

Postoperatively a barium swallow study showed no evidence of esophageal leak and the patient was started on a liquid diet. She was gradually advanced to a regular diet with improved tolerance and no symptoms of regurgitation. Fiberoptic laryngoscopy showed no evidence of regurgitation with valsalva.





Figures 1,2: Case 1: Preoperative barium swallow showing large Zenker's diverticulum

Case 2

A 25 year-old woman presented to the emergency department at an academic medical center with a complaint of oral intake intolerance due patient reported mandible and hyoid bone dislocation. The patient reported that these dislocations caused esophageal obstruction and she was wearing a cervical spine collar at the time of presentation to self treat her dislocations. She had a history of hypermobile type EDS that was diagnosed one year prior to presentation. She was admitted for further workup and management of her oral intake intolerance

Barium swallow study showed no evidence of mandibular or hyoid dislocation or obstruction, and there was normal hyoid bone elevation with swallow. The patient was noted to have hyperactive gag reflex. An abdominal radiograph done six days after barium swallow showed retained contrast material concerning for gastroparesis. Fiberoptic laryngoscopy revealed significant laxity of the upper airway soft tissues. This included manipulation of the hyoid bone that resulted in the perceived hyoid dislocation, however there was no evidence of mechanical obstruction.

In conjunction with gastrointestinal medicine and psychiatry, the patient was diagnosed with esophageal gastric dysphagia. The teams believed that her oral intake intolerance was in part a psychological oral aversion related to laryngeal cartilage hypermobility with underlying gastroparesis. She was started on total enteral nutrition via nasogastric tube and slowly transitioned to an oral diet which she was able to tolerate at the time of discharge without significant nausea, emesis, or subjective esophageal obstruction.

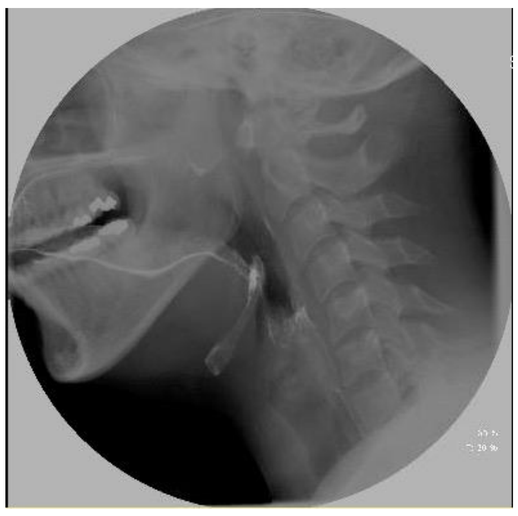


Figure 3: Case 2: Normal barium swallow including normal position and movement of the hyoid bone

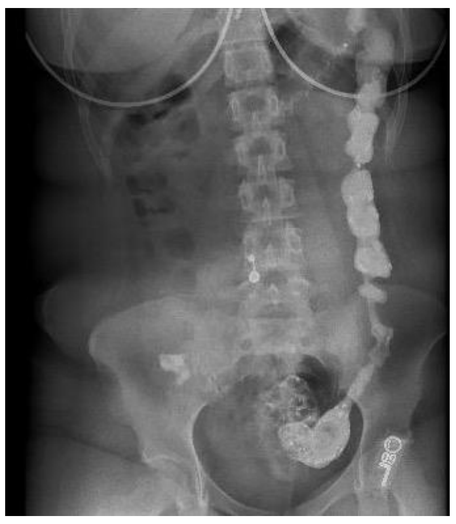


Figure 4: Case 2: Abdominal radiograph six days post barium swallow with retained contrast in the large colon

Discussion/Conclusions

EDS is a hereditary connective tissue disorder primarily characterized by joint hypermobilty and tissue laxity. There is limited literature on the otolaryngology related manifestations of EDS.[3]

In the 2 cases presented here, patients had a known diagnosis of hypermobile type EDS and presented with problems for which they are at higher risk given their diagnosis of EDS. EDS is associated with increased risk of a Zenker's diverticulum as weak connective tissue can allow formation of the diverticular sac.[1,2] Management of this patient was difficult due to the limitations of neck extension for endoscopic repair and the fragility of the tissues and blood vessel walls that make open approaches very meticulous.[2]

While complaints of EDS are primarily musculoskeletal, patients with EDS are also known to have increased incidence of functional bowel disorders, seen in 33-67% of patients.[1] Additionally, long term use of opiate medications for musculoskeletal pain from degenerative joint disease can lead to further impairment of bowel function.[1] In our patient, the underlying gastroparesis led to an oral aversion that was so significant as to cause emesis with attempted oral intake. Furthermore, the laxity of the soft tissues of the neck allowed excessive mobility of the hyoid bone and mandible that led to a subjective sense of esophageal obstruction. Ultimately this case was managed conservatively since the dislocations experienced by the patient were largely self induced and caused subjective discomfort.

By examining 2 EDS patients with disease manifestations relevant to the otolaryngologist, we aim to shed further light on a disease not often encountered and to highlight the multisystemic nature of the disease. In a patient with joint hypermobility and tissue laxity, the otolaryngologist should consider a referral to genetics for further workup for EDS since it will not always be diagnosed at the time of presentation and this diagnosis can have an impact on further treatment and management.

Contact

Viran Ranasinghe
Hospital of the University of Pennsylvania
viran.ranasinghe@uphs.upenn.edu
Phone: 215-662-2137

References

1. Levy et al, Ehlers-Danlos Syndrome, Hypermobility type. Gene Reviews, Oct 22, 2004.
2. Gazit Y et al, Ehlers-Danlos Syndrome Hypermobility-type: A much neglected multisystemic disorder, Rambam Maimonides Med J, 2016 Oct 31; 7(4).
3. Arulanandam S. et al, Laryngological presentations of Ehlers-Danlos syndrome: case series of nine patients from two London tertiary referral centers. Clin Otolaryngol, 2016 Jul 19, doi 10.1111/coa12708.