

Novel Case Report of Hypopharyngeal, Extraesophageal Cancer First Visualized and Diagnosed by a Gastroenterologist at Esophagogastroduodenoscopy With Endoscopic Biopsies

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CASE REPORT

Gastroenterologists standardly examine the esophagus, stomach, and proximal duodenum using esophagogastroduodenoscopy (EGD), whereas otolaryngologists or pulmonologists standardly examine the larynx and hypopharynx using laryngoscopy or bronchoscopy.¹ However, gastroenterologists visualize the hypopharynx during esophageal intubation at EGD.² A case is reported in which a gastroenterologist first diagnosed hypopharyngeal (extraesophageal) cancer by EGD, illustrating the importance of vigilance to detect hypopharyngeal lesions during EGD.¹

A 68-year-old woman with a long history of smoking cigarettes and alcoholism was admitted for progressive dysphagia and 10-Kg weight loss during 10 weeks. Physical examination on admission revealed cachexia (body mass index = 16.0 kg/m²). Laboratory tests, including liver function tests, were within normal limits. Albumin level was 3.5 g/dL (normal: 3.5–4.9 g/dL). Thoracic roentgenogram was unremarkable.



Figure 1. Appearance of hypopharyngeal mass at esophagogastroduodenoscopy (EGD). EGD revealed a 2.5-cm-wide, friable, exophytic (left arytenoid) hypopharyngeal mass, with superficial erosions and overlying exudate. The mass did not obstruct the airway or esophagus.

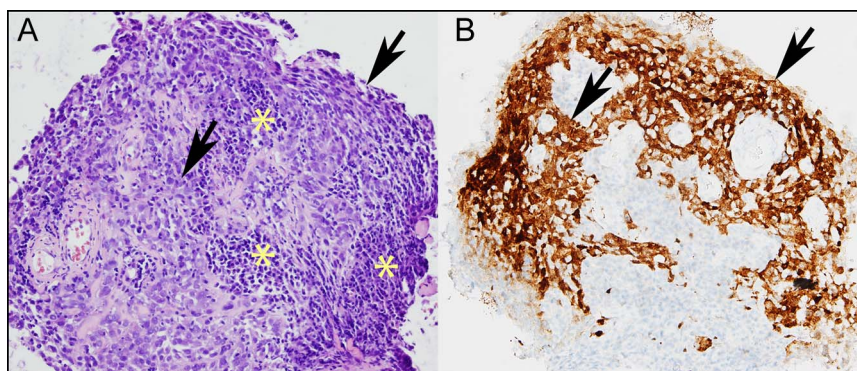


Figure 2. (A) Medium power photomicrograph of hematoxylin & eosin (H&E)-stained section of endoscopic biopsies of hypopharyngeal mass shows nonkeratinizing squamous cell carcinoma (arrows), with tumor cells showing high nuclear-to-cytoplasmic ratio, high-grade, pleomorphic cytologic features, and intimate association with lymphoplasmocytic infiltrates (*). (B) Medium power photomicrograph of immunohistochemical staining for p16 on sections of endoscopic biopsies of hypopharyngeal mass shows positive staining for p16 (brown color) in the cytoplasm of tumor cells (arrows), with the area of immunohistochemical positivity coterminous with that of the hypopharyngeal cancer. P16 is a marker for herpes simplex virus which is associated with oral squamous cell cancer. Lymphocytoplasmodic infiltrates do not stain with p16 and appear as pale blue dots in the center.

A gastroenterologist performed EGD revealing a friable, 2.5-cm-wide, exophytic left arytenoid/hypopharyngeal mass (Figure 1). Pathologic analysis of biopsies of the mass revealed moderately well-differentiated invasive squamous cell carcinoma, with positive immunohistochemistry for p16, and p40 (Figure 2). Cervical computed tomography with intravenous contrast revealed a 2.5-cm-wide hypopharyngeal/supraglottic mass, emanating from the left aryepiglottic fold (Figure 3). Flexible fiberoptic laryngoscopy confirmed the EGD findings. Positron emission tomography scan confirmed a fluorodeoxyglucose (FDG)-avid supraglottic, hypopharyngeal mass. Hypopharyngeal cancer was staged as T2N1M0. The patient received daily radiation

to the hypopharynx (total = 70 gy during 7 weeks), and concurrent chemotherapy with cisplatin on days 0, 21, and 42. Follow-up computed tomography 6 months later showed near-complete tumor resolution.

In this case, standard histopathology revealed squamous cell cancer, as confirmed by immunohistochemical positivity for p16 and p40 which are markers for squamous cell cancer.^{3,4} This case report demonstrates the benefits of diagnosing hypopharyngeal cancer early at EGD with biopsies. During EGD, hypopharyngeal structures are transiently visible.¹ Extensive literature review demonstrated that diagnosis of hypopharyngeal cancer by EGD performed by a gastroenterologist is rarely reported. Stevens et al² prospectively evaluated visual evaluation of larynx and hypopharynx during EGD in 111 patients. Two patients had significant hypopharyngeal abnormalities including leukoplakia-1, and aphthous ulcer-1, thereby demonstrating that evaluation of the hypopharynx by EGD is feasible.² It is therefore crucial that gastroenterologists are vigilant for hypopharyngeal cancer at EGD and biopsy significant lesions that are safely away from the vocal cords.^{1,5}



Figure 3. Axial view image of cervical computed tomograph with intravenous contrast shows a heterogeneously enhancing mass in supraglottic region, arising from the left aryepiglottic fold (arrow).

Although laryngoscopy is the standard method to diagnose hypopharyngeal cancer, this case report illustrates that such cancers may be diagnosed by EGD with endoscopic biopsies. Additional studies are needed to examine detection rates of hypopharyngeal malignancies by EGD. Gastroenterologists should be vigilant during EGD to diagnose lesions incidentally seen outside of the gastrointestinal tract.

DISCLOSURES

Author Contributions: A. Hanna and M. Gjeorgjievski wrote the manuscript. M. Amin provided the histopathology images. MS Cappell wrote and revised the manuscript for intellectual content. He is the article guarantor. A. Hanna and MS Cappell contributed equally to the manuscript.

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REFERENCES

1. Hong HJ, Jeong S-H, Kim WS, Kim YJ. Safety of esophagogastroduodenoscopy-guided forceps biopsy and the feasibility of esophagogastroduodenoscopy for evaluation of hypopharyngeal cancer. *BMC Surg*. 2019;19:105.
2. Stevens SM, Johnson EA, Pfau PR, Dailey SH. Visual evaluation of the larynx and hypopharynx during esophagogastroduodenoscopy: A safety and feasibility study. *Surg Endosc*. 2015;29(5):1209–15.
3. Lewis J, Thorstad W, Chernock R, et al. p16 Positive oropharyngeal squamous cell carcinoma: An entity with a favorable prognosis regardless of tumor HPV status. *Am J Surg Pathol*. 2010;34(8):1088–96.
4. Lewis J, Chernock R, Bishop J. Squamous and neuroendocrine specific immunohistochemical markers in head and neck squamous cell carcinoma: A tissue microarray study. *Head Neck Pathol*. 2018;12(1):62–70.
5. Ahlwat R, Ross A. *Esophagogastroduodenoscopy*. StatPearls Publishing: Treasure Island, FL, 2000.

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