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Evolving Endoscopy

EvoEndo Single-Use Endoscopy System
Case Study

Sedation-Free Transnasal Esophagogastroduodenoscopy: A Novel Diagnostic Approach for Refractory Chest Pain in a Sickle Cell Disease Patient High-Risk for General Anesthesia

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PATIENT HISTORY

A 19-year-old, 1.83 m (6 ft) male with a history of sickle cell disease (HbSC), complicated by multiple vaso-occlusive crises, acute chest syndrome, asthma, and a history of prior gastritis, presented with chest pain, leg pain, dyspnea, and nausea. He was admitted for pain management, but the chest pain remained refractory to intravenous pain medications. Initial workup for acute chest syndrome, including chest radiography, was unremarkable. Given his prior history of gastritis, persistent chest pain, and nausea, an upper endoscopy was recommended to investigate for potential gastrointestinal etiology. Due to his significant comorbidities, he was very high risk and would require an exchange transfusion prior to general anesthesia. A sedation-free transnasal esophagogastroduodenoscopy (TN-EGD) was performed as a diagnostic alternative.

METHODS

Using the EvoEndo Endoscopy System, a sedation-free TN-EGD was performed during the patient's inpatient stay. Prior to the procedure, topical nasal vasoconstrictor was applied to the patient's nares using 0.05% afrin oxymetazoline. Subsequently, 10 ml (200 mg) of 2% lidocaine jelly was administered as topical analgesia to the patient's nare and oropharynx. Virtual reality goggles were used by the patient for distraction and disassociation during the procedure. The patient was positioned in the left lateral position, and the EvoEndo Model LE 85cm Single-Use Gastroscope, with an outer diameter of 3.5mm, was introduced into the patient's right nostril with direct visualization. Avoiding contact with the adenoid, the scope was steered into the nasopharynx past the epiglottis, and the patient was asked to swallow, guiding the scope through the upper esophageal sphincter (UES). The endoscope was advanced past the lower esophageal sphincter (LES) and into the stomach and duodenal bulb. Visual findings were recorded, and histologic specimens were obtained.

FINDINGS

The esophagus was visually normal except for mild furrowing. The gastric body was erythematous with multiple erosions. Patchy, erythematous mucosa with erosion and aphthous ulcers without bleeding were found in the duodenal bulb. Biopsies were obtained and demonstrated duodenitis with foveolar metaplasia and Brunner's gland hyperplasia, suggestive of peptic injury.

Duodenal bulb

Distal esophagus

SUMMARY

This case highlights the unique challenges of the endoscopic management of patients who are at high risk of anesthesia. They commonly have many co-existing medical morbidities. The EvoEndo Model LE Single-Use Gastroscope allowed for a safe and successfully expedited work-up, evaluation, and treatment plan in a 19-year-old high-risk patient, avoiding the need for general anesthesia. It highlights the valuable role EvoEndo's ultra-slim 3.5 mm outer diameter, single-use endoscope holds in allowing these patients to undergo a sedation-free procedure.

CONCLUSION

In this case, the integration of EvoEndo's ultra-slim gastroscope underscores the flexibility and patient-centered design of the platform. The endoscope enabled direct visualization and specimen sampling of the upper gastrointestinal tract without the need for anesthesia. This is particularly beneficial for patients with significant co-morbidities.

The EvoEndo Model LE Gastroscope is intended for the visualization of the upper digestive tract in adults and pediatric patients, specifically for the observation, diagnosis, and endoscopic treatment of the esophagus, stomach, and duodenal bulb. The gastroscope is a sterile single-use device and can be inserted orally or transnasally. The EvoEndo Controller is intended for use with an EvoEndo Endoscope for endoscopic diagnosis, treatment, and video observation.