Nitromethane ingestion resulting in severe esophageal and pyloric stenosis

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Background

- Ingestion of caustic substances causes injury of the upper GI tract and can lead to significant morbidity and mortality.
- The pattern and severity of injury correlates to the composition, form, and amount of the substance consumed.
- Alkaline agents cause injury to the esophagus and acidic substances cause damage to the stomach.
- Stricture is the most common long-term complication and develops within 8-weeks of initial ingestion in about 80% of patients.

Case

A 48-year-old-man with schizophrenia presented with abdominal pain, dysphagia, and odynophagia 1-week after ingesting nitromethane.

- As he was outside of the window for evaluation of an acute caustic ingestion injury, EGD was not performed.
- Supportive management including a PPI was initiated.

The patient returned 4-weeks later with continued dysphagia, aspiration pneumonia, and weight loss.

- EGD demonstrated esophageal stenosis, hematin in the gastric body, diffuse non-bleeding gastric ulcers, and severe pyloric stricture.
- EGD and NJ tube placement was attempted but unsuccessful secondary to severe pyloric stenosis with inability to pass a guidewire.
- General surgery performed gastrostomy and jejunostomy tube placement.

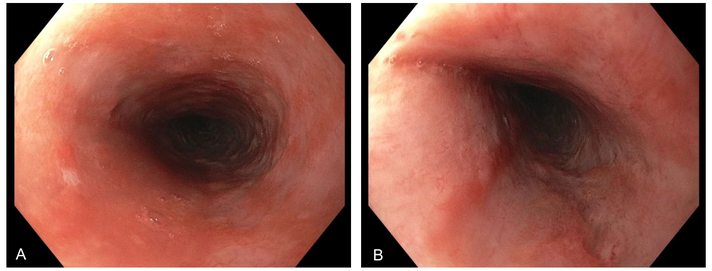

Figure 1: Esophagoduodenoscopy indicating long-segment moderate luminal narrowing involving the mid (A) and distal (B) esophagus measuring 10cm in length by 12mm in luminal diameter

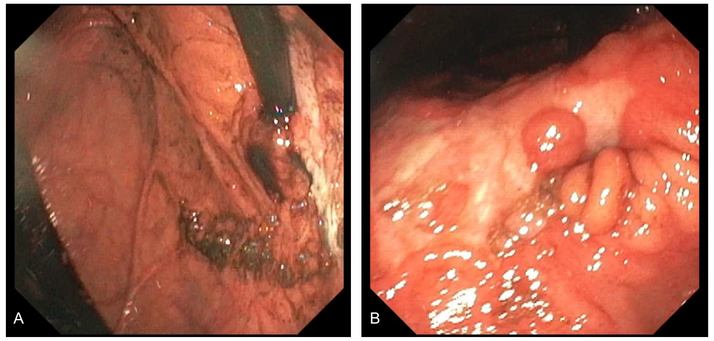

Figure 2: Esophagoduodenoscopy indicating A) hematin in the gastric body and non-bleeding superficial gastric ulcers in the cardia, gastric fundus, and gastric body and B) severe pyloric stricture with ulceration

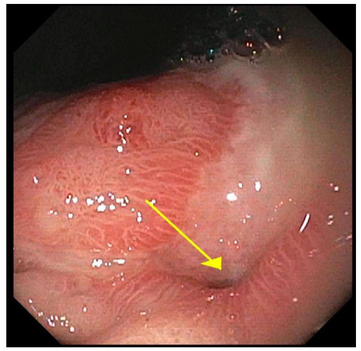

Figure 3: Esophagoduodenoscopy indicating severe pre-pyloric narrowing and pyloric stricture

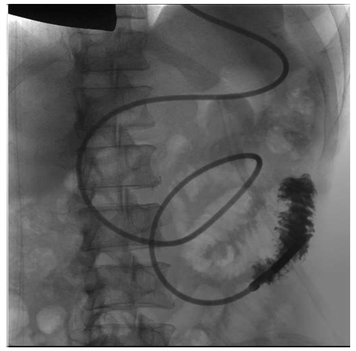

Figure 4: Successful placement of a 12 Fr nasojejunal feeding tube under direct endoscopic and fluoroscopic visualization.

Case Conclusion

The patient presented 2-months later with failure to thrive and severe malnutrition.

- CT abdomen revealed a coiled GJ tube in a distended stomach.
- EGD demonstrated a segment of mid and distal esophageal stricture measuring 12mm in diameter, diffuse gastropathy, and severe narrowing of the pyloric channel.
- The prior GJ tube had migrated to the stomach so was exchanged for an externally removable gastrostomy tube for venting and NJ tube for nutrition.
- When the patient's nutritional status is optimized, he will likely require distal antrectomy and Bilroth II reconstruction for pyloric stenosis.

Discussion

- Early contact with the medical system to identify and treat the damage from caustic ingestion is essential and unfortunately this patient's presentation was delayed.
- Further management will be targeted at alleviating symptoms, optimizing nutritional status, and engaging a multidisciplinary team to reduce the risk of recurrent ingestion.
- Potential late complications include esophageal adenocarcinoma or squamous cell carcinoma making ongoing surveillance for malignancy a priority.

References

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