Unusual complication of a percutaneous gastrostomy tube

Fahad Malik, Sher N. Baig, Bhavin Patel, Manuel Gonzalez and Jay Nfonoyim

Medicine, Richmond University Medical Center, Staten Island, NY, USA

1. Introduction

Percutaneous Gastrostomy (PEG) tube is an endoscopic-guided procedure to provide enteral nutrition, medications and/or fluids to patients with oral or esophageal pathologies. PEG tubes are a relatively safe intervention but commonly known to have complications like insertion site infection, tube leakage, and tube blockage. This was an unusual case in which the PEG tube was discovered to be obstructing the third part of the duodenum after migration resulting in mechanical gastric obstruction with septic shock and severe hemodynamic instability. PEG induced gastric obstruction is often misdiagnosed during a triage due to the atypical presentation of this condition leading to aggressive management, testing and consultations. PEG dependent patients have rapidly increased over the years and a complete physical examination of the PEG site should be performed by all physicians in order to prevent related complications.

2. Case report

This is a case of a 39-year-old non-verbal caucasian male with past medical history of stimulant abuse resulting in a traumatic anoxic brain injury, quadriplegia, reversed tracheostomy stoma, and percutaneous gastrostomy tube dependence (replaced 6 months prior) who was sent from his nursing home for evaluation of a persistently high grade fever of 103°F and recurrent episodes of coffee ground emesis. He was intubated on arrival to the emergency room for protection of airways due to suspicion of aspiration pneumonia.

Upon admission, laboratory values showed white blood cells 26,000 k/ul; hemoglobin 12.9 g/dl; granulocyte 80.1%; sodium 157 mmol/l; potassium 2.9 mmol/l; chloride 116 mmol/l; bicarbonate 31 mmol/l; mg/dl; BUN 50 mg/dl; glucose 212 mg/dl; Lactic Acid 1.8 mmol/l; AST 45 U/L. All other laboratory values were within normal range. A chest x-ray showed development of early bilateral infiltrations. Computed tomography of abdomen showed thickening at the distal end of stomach wall and proximal duodenum. The gastric tube was revealed to have retention of the balloon in the third part of duodenum (Figure 1).

This PEG tube replaced over 6 months ago and the new 20 Fr MIC-type PEG tube was inserted using the previous stoma opening (Figure 2). He was tolerating tube feeding comfortably until his presentation at our hospital. PEG tube was immediately removed and the patient was admitted to the intensive care unit. He was treated with broad spectrum antibiotics (vancomycin and cefepime) for aspiration pneumonia and slowly tapered off the norepinephrine. The PEG tube was again replaced during this hospitalization, the balloon was inflated with 20cc of water and the external bumper was fixed at 4 cm to skin level with 1 cm distance to the skin. The caretaker of the patient was instructed
to evaluate the PEG tube external bumper daily to prevent further migration. The patient had significant improvement over the next few days, began tolerating tube feeds again and was discharged to his nursing home.

### 3. Discussion

PEG dependent patients have rapidly increased over the years and a complete examination of the PEG site should be performed by all physicians in order to prevent any PEG related complications. Placement of a PEG tube is usually a safe and a cost-effective method with low mortality for providing enteral nutrition [1]. Gastric obstruction most commonly occurs at initial placement of the PEG tube near the pylorus resulting in gastric outlet obstruction [2,3]. This was an unusual case in which PEG tube was discovered to have migrated far beyond pylorus of the duodenum obstructing the early parts of the jejunum resulting in mechanical gastric obstruction 6 months after the placement using a previous stoma. This is the first case to our knowledge in which a PEG tube was discovered to have migrated as far as the jejunum.

A high clinical suspicion of this condition should be present while treating these patients. This is a preventable condition and should be recognized by everyone caring for a PEG dependent patient. This case report highlights the importance of prevention, most importantly by placement of an external fixator and documentation of its distance from the skin. Ideally, external fixator with 1–2 cm distance from the skin is recommended [3]. This should further involve adequate daily surveillance of the external fixator and tube mobility to ensure that the PEG tube has not migrated from the initial insertion measurement [2,4].

### 4. Conclusion

As the PEG tubes are becoming more widely placed it should become a common clinical practice to examine PEG sites in order to prevent complications like septic shock, aspiration, and pancreatitis [5]. In order to diagnose this condition, the physicians should be aware of it. This would lead to accurate diagnosis, improve patient care and decrease hospital days for the patients.

### Disclosure statement

No potential conflict of interest was reported by the authors.

### ORCID

Fahad Malik  http://orcid.org/0000-0002-0956-5708
Manuel Gonzalez  http://orcid.org/0000-0001-9610-5699

### References

[1] Scott R, Bowling T. Enteral tube feeding in adults. J R Coll Physicians Edinb. 2015;45(1):49–54.

[2] Shah J, Sunkara T, Yarlagadda KS, et al. Gastric outlet and duodenal obstruction as a complication of migrated gastrostomy tube: report of two cases and literature review. Gastroenterology Res. 2018;11(1):71–74.

[3] Rahnemai-Azar AA, Rahnemaiazar AA, Naghshizadian R, et al. Percutaneous endoscopic gastrostomy: indications, technique, complications and management. World J Gastroenterol. 2014;20(24):7739–7751.

[4] Soares M G, Soares E, G N.A, et al. Distal migration of percutaneous endoscopic gastrostomy tube causing gastric outlet obstruction. J Food Nutri Disorders. 2017;06(04).

[5] Shah AM, et al. Replacement gastrostomy tube causing acute pancreatitis: case series with review of literature. JOP. 2012;13(1):54–57.