Published online: 2019-09-25

Case Report

Unique Removal of a Kinked Nasogastric Tube

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Abstract

Nasogastric (NG) tube insertion is a common clinical procedure used for both diagnostic and therapeutic purposes. As the importance of enteral nutrition is being increasingly recognized; the use of NG tube insertion has steadily increased. Here, we present an interesting case in which a kinked NG tube was removed in a unique manner with "push and pull" technique without untoward trauma.

Keywords: *Esophagogastroduodenoscopy, kinked, nasogastric tube*

Introduction

Nasogastric (NG) tube has been used from ancient times for gastric intubation through nasal passage. It is used for both diagnostic as well as therapeutic purpose.[1,2] In recent times, as the importance of enteral nutrition is being increasingly recognized; hence, the use NG intubation has steadily increased. Here, we present an interesting case of oropharyngeal dysphagia where the inserted NG tube became kinked and was subsequently removed in a unique manner.

Case Report

A 72-year-old female presented to us with a history of cerebrovascular accident 4 months back, following which she developed oropharyngeal dysphagia. She had NG tube inserted for enteral nutrition. The patient was planned for NG tube removal followed by percutaneous endoscopic gastrostomy (PEG), however, she lost to follow-up. At the time of presentation, NG tube removal was tried, but resistance was felt on pulling the tube at a distance of 25 cm from the incisors. The procedure was abandoned to avoid subsequent trauma and complications due to forceful removal. X-ray done [Figure 1] was suggestive of coiled NG tube *in situ*, which looked like an alpha loop.

Initially, fluoroscopy-guided manipulation and removal was tried but was not successful. Therefore, the patient underwent urgent esophagogastroscopy, which showed kinked NG tube lying in the gastric antrum [Figure 2]. With the help of foreign body forceps, tip of NG tube was grasped and manipulated to straighten it [Figure 3]. Distal end of NG tube was pushed whereas the proximal end was pulled externally. As the NG tube had become hard due to prolonged feeding and residual matter, it was difficult to manipulate, but after repeated attempts kinking was reduced. The NG tube was then gradually removed under endoscopic vision, but at the level of posterior pharynx, it got impacted [Figure 4]. At this point, the proximal end of NG tube beyond the nasal alae was cut using a surgical blade, and the residual part was removed using fingers (pincer grasp) through the oral cavity [Figure 5]. Thus, avoiding blunt trauma to the nasal cavity. Postprocedure, the patient was stable. Later on, PEG was done for enteral nutrition and patient was discharged.

Discussion

Way back in 18th century, it was John Hunter who developed the concept of enteral feeding.[3] Clinical research in recent times has shown that in a variety of patient population, enteral nutrition is superior to parenteral nutrition. Therefore, over the past 20 years, there has been a shift from using parental nutrition in chronically ill patients to enteral nutrition.[4,5]

Although NG tube feeding appears simple, there are many complications associated with it. The most common being aspiration; kinking; perforation of vascular structures, esophagus; pneumothorax; epistaxis; retained NG tube in the nasopharynx and rare

Access this article online

Quick Response Code:

Website: www.jdeonline.in

DOI: 10.4103/jde.JDE_34_16

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How to cite this article: Narayan KS, Gupta GK, Nijhawan S, Puri S. Unique removal of a kinked nasogastric tube. J Dig Endosc 2017;8:97-9.

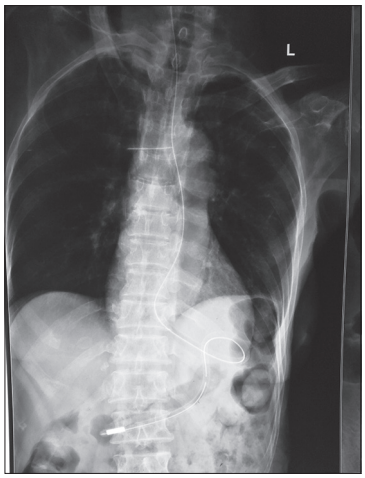

Figure 1: X-ray abdomen showing kinked nasogastric tube *in situ*

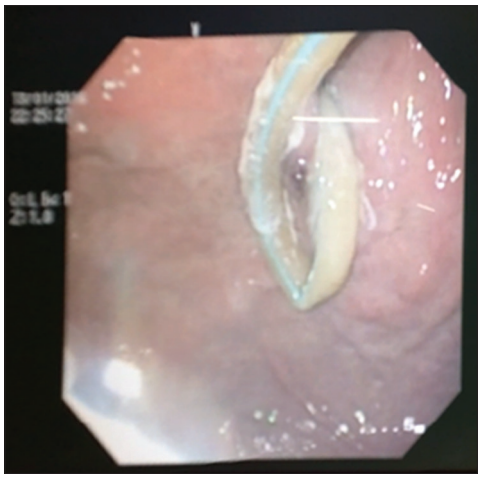

Figure 2: Endoscopic image of kinked nasogastric tube

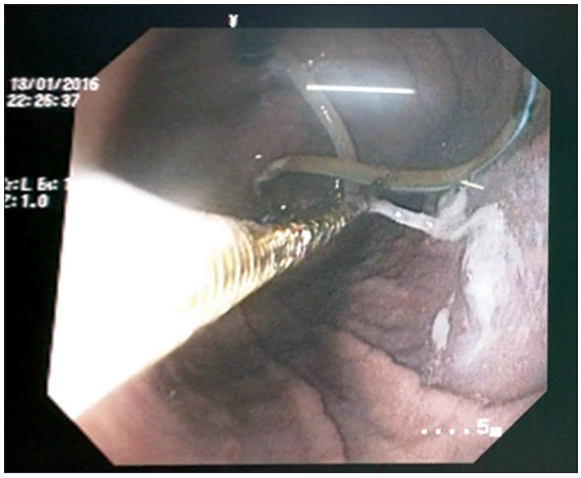

Figure 3: Endoscopic image of foreign body forceps grasping the distal end of nasogastric tube

Figure 4: Impacted nasogastric tube at the level of posterior pharynx

complications such as mediastinitis, sinusitis, NG tube syndrome, and knotting of the NG tube.[1,2,6,7]

There are four different types of NG tubes, namely, the Levin tube (single lumen), Salem-sump tube (bi-lumen), Miller-Abbott tube (bi-lumen with a balloon at one end), and the Cantor tube (single lumen with a bag containing mercury attached). Single lumen Levin tube is the NG tube, mostly used in clinical practice. Materials used in making these tubes are polyvinylchloride, polyethylene, polyurethane, and silicone.[8]

As far as kinking is concerned the newer generation tubes are made of silicon and polyurethane to prevent them from kinking.[4] However, kinking of NG tube is still a common complication seen in clinical practice. Various factors are associated with kinking of NG tube, such as faulty insertion technique, repetitive manipulations of the tube, excessive length of tube being placed in the stomach, prolonged duration of placement of tube, violent peristalsis, and anatomical alteration secondary to abdominal surgery.[6,7,9] In our case, the probable reason for kinking may be due to the polyvinylchloride material of the NG tube being placed into the stomach and prolonged duration of placement.

Interesting aspect of removal was the "push and pull" technique used to straighten the kinked and hardened NG tube. Further, cutting the proximal tube end and removal of the impacted residual tube through oral cavity is also an innovative technique to avoid blunt trauma to the nasal cavity.

The literature shows that blind attempts to extubate have led to serious trauma to the nasopharynx, with hemorrhage and other related complications.[2,7,10]

Hence, the learning point, in this case, is that in case any stiff resistance is felt while attempting removal of an NG tube, the possibility of complications should be investigated and managed accordingly.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the

Figure 5: Residual nasogastric tube after removal

patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

Financial support and sponsorship

Nil.

Conflicts of interest

There are no conflicts of interest.

References

1. Bharadwaj G, Attri PC, Verma P, Rai R, Jain V, Jain A. Iatrogenic Complications of NG Tube - Accidental Fixation to the Pylorus of Stomach - A Case Study and Review of literature. WebmedCentral General Surgery 2013;4:WMC004098.
2. Kinshuck AJ, William CE and Reddy CE. A forgotten nasogastric tube. Clinical Rhinology: An international journal. Clin Rhinol 2011;4:47-9.
3. Chernoff R. An overview of tube feeding: From ancient times to the future. Nutr Clin Pract 2006;21:408-10.
4. Freka Nasogastric Feeding Tube. Available from: http://www.fresenius-kabi.co.uk/5033_5070.htm.
5. Seres DS, Valcarcel M, Guillaume A. Advantages of enteral nutrition over parenteral nutrition. Therap Adv Gastroenterol 2013;6:157-67.
6. Trujillo MH, Fragachan CF, Tortoledo F, Ceballos F. "Lariat loop" knotting of a nasogastric tube: An ounce of prevention. Am J Crit Care 2006;15:413-4.
7. Egan DJ, Shami N. Self-knotting of a nasogastric tube. West J Emerg Med 2011;12:266-7.
8. Types of Nasogastric Tube. Integrated Publishing, Inc.; Available from: http://www.armymedical.tpub.com/MD0581/MD05810107.htm. [MD0581 (5-4)].
9. Chang BA, Cheung VW, Lea J. An unusual instance of stridor: Airway obstruction from a nasogastric tube knot in a 1-month old infant. Am J Otolaryngol 2014;35:59-61.
10. Ongom P, Nassali G, Kaggwa S, Nakavuma L. Nasogastric tube knotting: Two case reports from Kampala, Uganda. East Cent Afr J Surg 2012;17:106-9.