

Case Report

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Entrapment of a long dwelling nasogastric tube after radiotherapy in an oral cancer patient: a rare case report

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ABSTRACT

The use of a nasogastric (NG) tube forms a part of the daily routine after surgery for oral cancer, and is vital for enteral feeding of the patient. However, the use of NG tubes is not without complications, which include tube obstruction, tube breakage, tube double backing, and kinking. NG entrapment, which is seen in bariatric and other gastrointestinal surgeries when the tube is caught in the staple line, is rarely seen in postoperative patients with oral cancer due to the long dwelling of the tube and the adjuvant radiotherapy. A 55-year-old man presented after 3 months of surgery for oral cancer and having completed adjuvant radiotherapy with a blocked and stuck nasogastric tube. After the endoscopic removal of the tube failed twice, the NG tube was removed by performing a gastrostomy via the midline mini laparotomy approach. Frequent monitoring, changing of NG tube and continual re-review of indications for continued use of feeding tubes is prudent, including consideration of changing goals of care. Educating the patient and his relatives/care takers at the time of the discharge with the instructions of care will surely help to prevent such a complication.

Keywords: Nasogastric tube, Oral cancer, Entrapment, Gastrostomy

INTRODUCTION

The use of nasogastric (NG) tubes is ubiquitous, and clinicians often take their placement, function, and maintenance for granted. The nasogastric tube has often been either the subject of court battles defining the ethical right of a patient to die without this “life-saving or prolonging” tube or as an instrument highlighting medical error. Feeding tubes are used for gastro-intestinal decompression, enteral feeding, and administration of the medicines.

When unexpected complications arise, the nasogastric feeding tube can be a source of intrigue. Conventional

nasogastric tubes are not suitable for long-term usage in enteral feeding as they may get damaged by enteric contents and become increasingly rigid.¹ Reported complication rates vary widely from 0.3% to 8%, including trachea-bronchial complications and non-thoracic complications like tube obstruction, tube breakage, tube double backing, and kinking. Knot formation in the stomach develops when excess tubing is advanced, allowing it to loop back on itself, and this knot becomes unresolving if the tube dwelling is for prolonged periods causing the tube to become stiff. So, NG entrapment is a very rare event and is easily preventable.

NG entrapment, as such, can be seen as a complication in cases of bariatric and other gastrointestinal surgeries where the tube fragment gets caught in the staple line.² But NG entrapment in the context of post radiation therapy completion is very rare and not much literature is available on it.

To avoid this complication in cancer patients on radiation therapy, it is imperative to change feeding tubes more frequently in order to prevent their stiffening and hence difficulty in their manual removal afterwards.

We hereby presented a rare case report of the NG entrapment in the stomach of a patient who underwent surgery followed by adjuvant radiotherapy for carcinoma of the oral cavity.

CASE REPORT

A 55-year-old man presented to the department of surgical oncology with complaints of a blocked and stuck nasogastric tube which was not getting pulled out manually. The patient was a known case of oral cavity cancer (left sided buccal mucosa), for which he underwent surgery about 3 months ago. The surgery consisted of wide local excision of the lesion and an ipsilateral modified neck dissection followed by pectoralis major myocutaneous flap reconstruction. After the surgery, the patient is generally kept on a nasogastric tube for enteral feeding for some time, which varies from patient to patient. The nasogastric tube is generally removed on follow-up of the patient when the patient gradually starts taking at least liquids orally and adequate surgical healing has been achieved.

However, this patient was lost to follow-up in the surgical outpatient department, and the patient started taking adjuvant radiotherapy as suggested by a radiation oncologist. The patient kept the nasogastric tube in situ and continued taking feeds through the same. However, after sometime during the radiotherapy sessions, there was a gradually increasing difficulty in feeding via the nasogastric tube, which ultimately led to complete blockage of the nasogastric tube about 15 days ago. The tube could not be removed manually by a local doctor, for which the patient went to a gastroenterologist for endoscopic removal of the nasogastric tube. But, the endoscopic removal of the tube failed twice, following which the patient was referred to the surgical oncology department for the surgical removal of the tube.

On clinical examination, the tube was found to be very stiff, blocked, and completely immobile. An abdominal X-ray in the supine position was done, which showed the coiling of the nasogastric tube inside the stomach leading to a knot formation (Figure 1). The patient was planned for surgical removal of the tube by performing a gastrostomy via a midline mini-laparotomy approach. After the distal end of the tube was delivered out of the gastrostomy site, the knot formation of the distal part of the tube was quite apparent (Figure 2). The distal part was cut and delivered

out of the stomach, and the remaining proximal part of the nasogastric tube was pulled out of the nose (Figure 3). Subsequently, the gastrostomy site was closed with absorbable sutures, followed by closure of the laparotomy incision in layers. The patient recovered gradually and was discharged in stable condition on the postoperative third day.

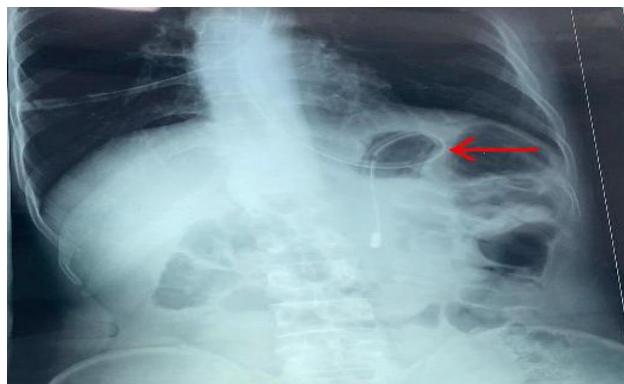


Figure 1: Abdominal X-ray supine position showing the coiled nasogastric tube inside the stomach forming a knot (red arrow).



Figure 2: Distal end of the coiled nasogastric delivered out of the stomach after performing a gastrostomy via midline mini laparotomy approach, showing a knot formation.



Figure 3: The cut distal part of the nasogastric tube (red arrow) which was delivered out of the gastrostomy site and the proximal part of the nasogastric tube (blue arrow) which was pulled out from the nose.

DISCUSSION

In contrast to flexible polyurethane feeding tubes, conventional nasogastric tubes are not suitable for long-term enteral feeding as they may become rigid from damage by enteric contents and gastric acid exposure.^{3,4} This leads to a risk of enteral perforation and tube cracks. Additionally, occlusion of tubes leading to tube kinking may occur due to coagulation of feeding formulas, medication fragments, and precipitates.⁵

Fractured tube fragments or entrapped nasogastric tubes can be removed endoscopically. If a tube fragment is not retrievable, it can be allowed to pass through the gastrointestinal tract.⁴ But if long segment nasogastric tube entrapment is not possible to be removed manually by minimal resistance, a gastrotomy is then warranted. In our case, as the nasogastric tube was not retrievable, we performed a gastrotomy via mini laparotomy approach to retrieve the tube, followed by gastrotomy closure with absorbable suture.

NG entrapment after completion of radiation therapy when a patient is still on enteral feeding is a very rare occurrence and not much literature is available on the same. This can be prevented by regular flushing the tube before and after each medication with warm water with alternating gentle pressure and soda bicarbonate solution as it prevents coagulation of feeding formulas and hence rigidity of feeding tubes.⁵ Also, NG tubes should be changed frequently and a long dwelling of the same NG tube should be avoided.

CONCLUSION

Frequent monitoring, changing of NG tube and continual re-review of indications for continued use of feeding tubes

is prudent, including consideration of changing goals of care. Educating the patient and his relatives/care takers at the time of the discharge with the instructions of care will surely help to prevent such a complication.

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