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Short communication

Difficulty in the removal of both nasogastric and endotracheal tubes: report of a case

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Introduction

Concurrent knotting and looping of the nasogastric tube is a rare complication. We report a case in which both nasogastric and endotracheal tubes were difficult to remove from the nose due to the knotting and looping of the nasogastric tube around the endotracheal tube.

Case report

A 50-year-old man was scheduled to undergo esophagectomy after a diagnosis of esophageal cancer. Anesthesia was induced with thiamylal, followed by vecuronium to obtain muscle relaxation, and was maintained with isoflurane and nitrous oxide in oxygen. Oral intubation of a double-lumen endotracheal tube was performed with slight difficulty and we then tried to insert a nasogastric tube from his right nostril to the stomach. At the end of the operation, the double-lumen endotracheal tube was extubated and a new single-lumen endotracheal tube was reintubated through the left nostril. When we tried to pull out the gastric tube from his right nostril, we had difficulty in removing it. In addition, we were unable to remove the endotracheal tube. Upon X-ray examination and fiberscopic analysis, we discovered that the nasogastric tube was wound around the endotracheal tube in a loop in the upper pharynx (Fig. 1). With the aid of a fiberscope, we attempted to remove both tubes from either the mouth or the nose, but failed. When an otolaryngologist was asked to examine the patient's upper pharynx, he found the tip of the nasogastric tube in the patient's mouth and pulled it out about 10cm from his mouth. After further inspection we also discovered a knot 5cm from the tip of the nasogastric tube. The tube was then cut 10cm from the tip and the remaining portion was subsequently removed from the right nostril.

Discussion

Knotting of the nasogastric tube with itself has been reported [1–4], but there are few reports on the looping of the nasogastric tube around the endotracheal tube in the upper pharynx. In this case, the gastric tube apparently got stuck in the upper pharynx and did not reach the stomach during the operation. We think that the single-lumen endotracheal tube was inadvertently inserted into the loop of the nasogastric tube at the upper pharynx when we tried to reintubate the single-lumen tube at the end of the operation. The loop around the endotracheal tube probably tightened when we attempted to remove the gastric tube. Therefore, it was considered that two factors made the removal of both nasogastric and endotracheal tubes from the patient difficult: one was the knotting of the nasogastric tube and the other, the looping of the tube around the endotracheal tube.

Several complications of interposing and removing a nasogastric tube have been reported [5–6], such as nasal bleeding and tearing of the pharyngeal region. Some studies have also reported knotting of the nasogastric tube [1–4]. However, there have been no reports of a looping of the nasogastric tube around the endotracheal tube in the upper airway, thereby making it difficult to remove both tubes. In such cases, blind removal of

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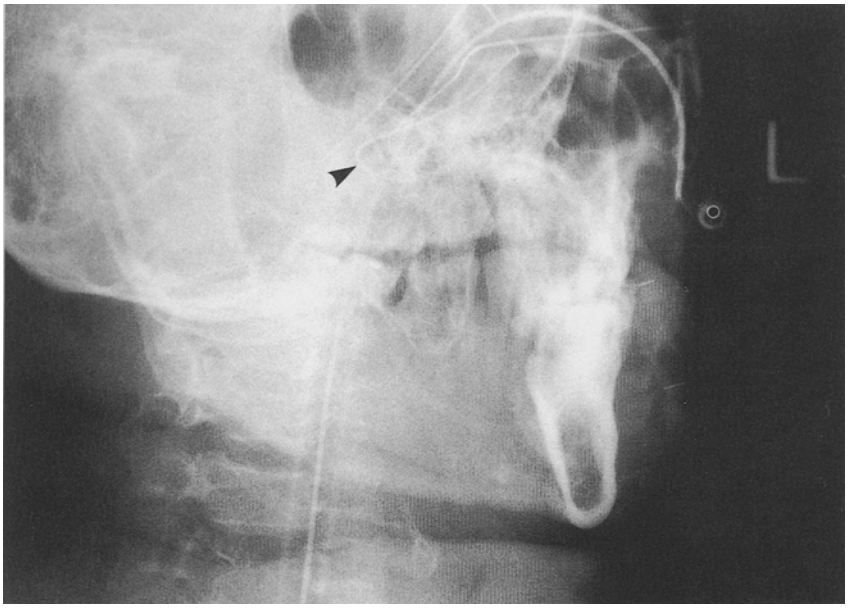

Fig. 1. The loop (*arrow*) of the nasogastric tube around the endotracheal tube is seen in the upper pharynx. This X-ray was taken soon after the end of the operation. At that time, there was no knot in the nasogastric tube. The knot in the nasogastric tube may have formed after several failed attempts to remove the tube from the nose

both tubes may induce some complications. Anesthesiologists should be careful in removing the tubes, especially from anesthetized or unconscious patients and particularly when the tubes present difficulties during removal. When such a difficulty occurs, we should also consider the possibility that the nasogastric tube may have become knotted with and/or attached around the endotracheal tube. In such cases, it is strongly recommended to request otolaryngologists to examine the nasal cavity and upper pharynx so as to avoid complications which may result when blindly removing the nasogastric tube.

References

1. Dasani B, Sahdev P (1991) Knotting of a nasogastric tube. A case report. Am J Emerg Med 9:565
2. Cappel MS, Scarpa PJ, Nadler S, Miller SH (1992) Complications of nasoenteral tubes. Intragastric tube knotting and intragastric tube breakage. J Clin Gastroenterol 14:144–147
3. Dawam D (1993) Nasogastric tube knotting: spontaneous or induced? Trop Doct 23:90
4. McHardy DA, Sadiq Y, Ephraim ME (1993) Nasogastric tube knotting. Trop Doct 23:179
5. Treasure JL, Russell GFM (1988) An unusual complication of removal of nasogastric tube. Br Med J 296:1038–1039
6. Sliwa JA, Marciniak C (1989) A complication of nasogastric tube removal. Arch Phys Med Rehabil 70:702–703