

“Nasogastric tube insertion comparison in sitting or supine position-100 cases”

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Abstract

RTF is generally comes use for children or old age. RT insertion is simple and easy method. Nasogastric tube insertion in an unconscious or intubated patients may be difficult as they cannot follow instructions, So many doctors have history of high first attempt failure. The use of nasogastric tube is desirable for some surgical procedures to keep stomach deflated (like laparoscopic surgeries) or for the short term administration of feeds post-operatively. Sometime we needed NGT under vision with help of magill's forcep, Basically NGT insertion is a blind nasal procedure.

Keywords: Magill's forceps, NGT, RTF.

Introduction

NGT is made of polyurethane or portex. RTF is available from 5FG-24FG size. The total length of the NGT is approx. 75 cm.in infant, it is smaller 4-8 size. The NGT is sterilized by gamma rays. RTF or NGT or Enteral feeding tube is very necessary for baby or old age for feeding. It is inserted through one side of nasal cavity where least resistance or no obstruction/ no DNS. It can be used for mediational and nutritional need of patient on daily basis. Regular care of tube with by flushing avoid tube becoming block from food particles.

Pre-Procedure Preparation

- Prepare the equipment, explain the procedure, reassure & assess the patient, & provide privacy.
- Select an open nostril means no obstruction from septal deviation.
- Perform hand hygiene & put on gloves.
- Lubricate with jelly the first 10cm of the NGT.
- Uncoil the NGT.

Procedure or Inserting a Nasogastric Tube¹

- Semi-recumbent positioning of the patient reduces the risk of airway aspiration⁽²⁾.
- Prepare all instruments,
- Estimate the length of insertion by measuring the distance from the tip of the nose to the ear lobe, and down to xiphoid process (Dehn & Asprey, 2007)⁽³⁾. This point is used as estimation only-when using the Ryles tube this estimated length usually falls between the second and third pre-printed black lines on the tube.
- Position -Fowler's position (seated upright) as much as possible with chin at 90° to the neck or flexed.
- Ask the patient to hold the glass of water or liquid in his or her hand with straw in mouth.

- Gently insert the nasogastric tube along the floor of the nose and advance it parallel to the nasal floor (i.e. directly perpendicular to the patient's head, not angled up into the nose) until it reaches the back of the nasopharynx, where resistance will be met (10-20 cm). At this time, ask the patient to sip on the water through the straw and start to swallow. Continue to advance the nasogastric tube until the distance of the previously estimated length is reached. The use of blue litmus paper to check the acidity of aspirate is insufficiently sensitive to distinguish between levels of acidity⁽⁴⁾. An endotracheal tube and nasogastric tube as seen on CXR. Both in good position. This is the most reliable means of ensuring proper placement of an NG tube⁽⁵⁾.

Confirmation of NGT

- If patient cough then tube in respiratory tract.
- Gurgling sound when air injected through the tube and heard on stomach end, tube in right place.
- No bubble when proximal end of tube dip in water, procedure is perfect.
- Plain x-ray is also good diagnostic.

Indications

- Stop Aspiration of gastric contents / emptying of the stomach.
- Gastric decompression of intestinal obstruction.⁶
- For feeding or medication.
- For radiographic contrast to the GI tract

Contraindications

- Any suspected base of skull fractures, due to the possibility of inserting the tube intracranially.
- Maxillofacial injuries or disorders.
- Recent oropharyngeal surgery.
- High risk of aspiration.
- Gastric stasis

- Gastro-oesophageal reflux/LPR
- Diagnosed Upper gastrointestinal stricture
- Nasal injuries

Complications

Although often considered an innocuous procedure, blind placement of a feeding tube can cause serious and even fatal complications^(7,8,9). While styleted small-bore tubes are most often associated with complications, large-bore unstyleted tubes are not without risk^(10,11,12).

- Aspiration and tissue trauma.
- Induce gagging or vomiting
- Nasal trauma & Epistaxis
- Rhinitis
- Pharyngitis
- Esophageal complication like ulceration, infection.

Types of Tube in Children

Mainly two types of nasogastric tube:

- **Short Term-** Made of polyurethane and are available in a variety of lengths dependent on the age and size of your child. These tubes are designed to be used for a period of up to 7 days.
- **Long Term-** These tubes are made of polyurethane and often can be referred to as a 'silk tube' and are available again in a variety of lengths. These tubes are designed to last for up to 30-60 days. Levin tube which has a single lumen, and the Salem-sump which has two lumens-one for drainage and a smaller one that is left open to the atmosphere to provide ventilation.

Results

100 patients are studied for NGT insertion technique. Each divided in equal part but blindly. 25 each are from OPD & IPD in both position sitting & supine position. 25 patient which are in sitting position in OPD are the best results means success rate is high. Out of 100 patient 25 patient tried in each group, in which some are conscious or some are unconscious. Conscious patient easily swallow and success rate is good while in IPD unconscious patient are more, success rate is low. But in IPD some patients tried to sit for procedure then NGT more easily then in supine position. In OPD out of 25 patient in sitting position RTF procedure success in first time try then 22 patient easily done this procedure while in supine position this was 18 in number. In IPD, NGT success in first time 19 in sitting position while in supine position this number is only 15. In second attempt in OPD it was 2 in numbers while in supine position 4 was processed. In IPD in sitting position it was 5 numbers or in supine position 3 in numbers. In further attempts was also done for resting patients. Some succeeded or some refer for the gastrostomy or jejunostomy. In sitting position in OPD

there are no one for gastrostomy procedure while maximum patients are from IPD in supine position. Thus conclusion is that sitting & conscious patient are good for procedure of NGT success.

NGT Procedure Depends

- Doctor & patient.
- Site & stage of cancer.
- Radiotherapy dose & how much completed.
- Sex (will power).
- Age of patient.
- Type, shape & size of NGT.
- Preparation and counselling.
- Position of patient.
- Lignocaine jelly.

Doctor is valuable factor for the NGT insertion, if the doctor tried well in manner with proper counselling then most of the procedure done in first time. Procedure also depends on patient's will power that he/she want to live or not. Patient has good will power or not.

Site also play an important role for NGT insertion. In pharyngeal carcinoma make the procedure difficult while oral cavity carcinoma comparatively easily. Stage of the cancer also important role. In primary stages cancer doesn't interfere the procedure while advance or huge growth make the procedure hard or bleeding full. In primary timing of Radiotherapy don't so much interfere the procedure as the last doses of therapy because of xerostomia etc.

Female have good will power but hesitate for the procedure while male cooperative in nature so procedure easily done. Children have much more difficult for the procedure while in adult easily. As we describe before the type, shape, size of NGT important role for procedure. Procedure preparation and counselling of the patients make the procedure easily.

As we studied that sitting position with good counselling, with lignocaine jelly in adult patient in primary stage of malignancy make the procedure very easy. My wife Deepti Ramchandra Meena is very helpful nature & always ready to help anytime to the patients. She is gold hearted & she is always listen in vacant time out of her service period. She specially help cancer, Tubercular or end stage disease patients. She counsell the patient for the treatment & other various method like palliative procedure to end stage patients.

Discussion

Conscious & sitting patients are more eligible candidate for procedure. The modern NG tubes are made up of polyurethane which become soft and atraumatic, softer on exposure to patient's body. Additionally, several non-opposing lateral eyes like opening near the tip make the NG tube more prone for kinking. Moreover, a curved NG tube (when it is in the

packet) promotes coiling in the mouth than going straight into the esophagus. There are few techniques described previously for difficult nasogastric tube insertion.

References

1. Stroud M, Duncan H, Nightingale J; Guidelines for enteral feeding in adult hospital patients. *Gut*. 2003 Dec;52 Suppl. 7:vii1-vii12.
2. Williams TA, Leslie GD; A review of the nursing care of enteral feeding tubes in critically ill adults: *Intensive Crit Care Nurs*. 2005 Feb;21(1):5-15.
3. Dehn, R.W. and Asprey, D.P (2007) *Essential Clinical Procedures*. 2nd ed. Saunders Elsevier, Philadelphia.
4. Phang JS, Marsh WA, Barlows TG 3rd, et al; Determining feeding tube location by gastric and intestinal pH values. *Nutr Clin Pract*. 2004 Dec;19(6):640-4.
5. Thomas B, Cummin D, Falcone RE (1996). "Accidental pneumothorax from a nasogastric tube". *N Engl J Med*. 335 (17): 1325-1326.doi:10.1056/NEJM199610243351717. PMID 8992337.
6. Nutrition support in adults: oral nutrition support, enteral tube feeding and parenteral nutrition; NICE (2006).
7. Metheny NA, Meert KL, Clouse RE. Complications related to feeding tube placement. *Curr Opin Gastroenterol*. 2007;23:178-82.
8. Aguilar-Nascimento JE, Kudsk KA. Use of small-bore feeding tubes: successes and failures. *Curr Opin Clin Nutr Metab Care*. 2007;10:291-6.
9. Pillai J.B., Vegas A, Brister S. Thoracic complications of nasogastric tube: review of safe practice. *Interact Cardiovasc Thorac Surg*. 2005;4:429-32.
10. Metheny NA. Inadvertent intracranial nasogastric tube placement. *Am J Nurs*. 2002;102:25-7.
11. Harris CR, Filandrinos D. Accidental administration of activated charcoal into the lung: aspiration by proxy. *Ann Emerg Med*. 1993;22:1470-3.
12. El-Gamel A, Watson DC. Transbronchial intubation of the right pleural space: a rare complication of nasogastric intubation with a polyvinylchloride tube--a case study. *Heart Lung*. 1993;22:224-5.