Nasogastric tube insertion

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Insertion of nasogastric tubes is a relatively common procedure in many clinical areas. Inexperienced or inaccurate insertion may not only be distressing to patients but could cause significant harm or even death (NPSA, 2005).

**Contraindications**
Tube insertion in some situations is contraindicated and requires expert advice/techniques:
- Basal skull fracture;
- Maxillofacial surgery/neoplasm;
- Oesophageal tumours/surgery or varices.

**Tube type**
There are two main types of tube. Wide bore (Ryles) tubes are used predominantly in the short term for gastric drainage as part of surgical/medical management. For artificial feeding, fine bore tubes are recommended.

**Complications of insertion**
Complications may include distress/discomfort associated with the procedure and mucosal and structural damage as a result of poor technique.

Most complications are related to tube misplacement, particularly into the respiratory tree (the risk of misplacement continues during subsequent care).

Ensuring that a tube is in the correct position before use is of paramount importance (Metheeny and Meert, 2004). Ensuring that the tube is in the correct position regularly and before any related intervention also forms an integral part of ongoing care.

The National Patient Safety Agency (NPSA, 2005) has recommended the following procedures to confirm correct tube placement:
- Measuring the pH of aspirate using pH indicator strips;
- Radiological imaging.

**Equipment required**
- Appropriate tube for purpose.
- Clean gloves/apron.
- pH indicator sticks.

Fig 1. Fine and large bore NG tubes and equipment set-up

Fig 2. Measure the distance between the tip of the nose to the angle point of the jaw, to the epigastrium noting the distance to which the tube is to be passed

Fig 3. Insert the tube into the patent nostril, easing it along the floor of the nasal passage in a horizontal plane. Stop if resistance is felt, adjusting the direction slightly before retrying
The procedure
- Obtain informed consent from the patient. Make sure to explain each step of the procedure to allay anxiety. It may be useful to arrange a signal by which the patient can communicate if she/he wants the nurse to stop (Dougherty and Lister, 2004).
- Position the patient sitting up and well supported. The head may be tilted forwards slightly as this will facilitate swallowing.
- Measure the distance between the tip of the nose and the angle point of the jaw to the epigastrium noting the distance to which the tube is to be passed. Tape may be used to identify this measure on the tube.
- Wash hands, don clean apron.
- Assess nostril patency.
- Lubricate the tip of the tube with water.
- Insert the tube into the patent nostril, easing it along the floor of the nasal passage in a horizontal plane. Stop if resistance is felt and adjust the direction slightly before retrying. If resistance is still felt, obtain consent again and attempt the other nostril if patent.
- It is possible that at approximately 12–20cm, a slight resistance may or be felt. Request that the patient swallows (using drinking water via a straw, if possible).
- Advance the tube as the patient swallows to the distance previously measured. Remove the tube if signs of respiratory distress are noted (the tube may not need to be completely removed – withdraw to the oropharynx if tolerated by the patient). This may make another attempt more acceptable to the patient.
- Secure the tube according to the organisation’s policy.
- Confirm the tube position, aspirating from the tube with a large volume syringe and testing with pH sticks. Radiological confirmation should be performed if required, in line with recommendations from the NPSA.
- If a stylet was used with the tube, remove this (ascertain the tube’s radio-opacity prior to doing this if radiological confirmation of position is required).

Professional responsibilities
All nurses who practise nasogastric tube insertion must have received approved training and demonstrated competence under supervision. Nurses should undertake this role in accordance with each organisation’s protocols, policies and guidelines.

REFERENCES

Fig 4. Advance the tube as the patient swallows
Fig 5. Confirm the tube position, aspirating from the tube with a large volume syringe
Fig 6. Test aspirate with pH sticks and in line with NPSA guidelines
At approximately 12-20 cm a slight resistance may or may not be felt ask the patient to swallow (using drinking water via a straw, if possible)

Advance the tube as the patient swallows to the distance previously measured. Remove the tube if signs of respiratory distress are noted (the tube may not need to be completely removed, withdraw to the oropharynx [oropharynx?] if tolerated by the patient) as this may make a reattempt more acceptable to the patient.

Secure the tube according to the organizations policy using hypoallergenic tape

Confirm the tube position, aspirating from the tube with a large volume syringe and testing with pH sticks. Radiological confirmation should be performed if required, in line with NPSA recommendations.

If a stylet was used with the tube, remove (ascertain the tubes radio-opacity prior to doing this if radiological confirmation of position is required)

Variations
Variation to the procedure may be required in situations such as swallowing dysfunction and the unconscious patient and if difficulty in confirming tube position is experience. Practice should always be guided by NPSA/local policy.

Professional responsibilities
All nurses who practice nasogastric tube insertion must have received approved training and demonstrated competence under supervision. The onus is also on the individual to ensure knowledge and skills are maintained both from a theoretical and practical perspective. Nurses should also undertake this role in accordance with an organisation’s protocols, policies and guidelines.