Recommended that it is safe to feed patients (Earley, 2005). The NPSA (2005b) checked using pH paper, not litmus paper. The NG tube is aspirated and the contents are pH test inaccurate and should not be used. The correct intragastric position is then verified (see below). The tube is fixed to the nose and forehead using adhesive tapes. The stomach is decompressed by attaching a 60ml syringe and aspirating its contents. Blocked tubes can be flushed open with saline or air.

**VERIFYING CORRECT INTRAGASTRIC POSITIONING**

The intragastric position of the tube must be confirmed after its initial insertion, and this must be documented in the patient’s notes. There are two ways of confirming the tube’s position currently recommended. These are by pH test (Stock et al, 2008; NPSA, 2005a; 2005b) and X-ray. Other methods can be inaccurate and should not be used.

**pH test**

The NG tube is aspirated and the contents are checked using pH paper, not litmus paper (Earley, 2005). The NPSA (2005b) recommended that it is safe to feed patients (infants, children and adults) if the pH is 5.5 or below. This advice does not apply to neonates (preterm to 28 days). See the NPSA’s (2005b) advice and the update (2007) for more information. Note that taking proton pump inhibitors or H₂-receptor antagonists may alter the pH. Similarly, intake of milk can neutralise the acid.

**Chest X-ray**

When in doubt, it is best practice to use X-ray to check the tube’s location (Stock et al, 2008). Patients who have swallowing problems, confused patients and those in ICU should all be given an X-ray to verify the tube’s intragastric position. This involves taking a chest X-ray including the upper half of the abdomen. The tip of the tube can be seen as a white radio-opaque line and should be below the diaphragm on the left side.

**Syringe test**

This test is mentioned here for historic interest only. Also known as the whoosh test, it has been shown to be an unreliable method of checking tube placement, and the NPSA (2007; 2005a; 2005b) has said that it must no longer be used.

**Confirming position**

Correct intragastric positioning should be confirmed:

- Immediately after initial placement;
- Before each feed;
- Following vomiting/coughing and after observing decreased oxygen saturation;
- If the tube is accidentally dislodged or the patient complains of discomfort.

Never insert the guide wire while the nasogastric tube is in the patient.

**Advantages**

There are several advantages associated with the use of NG tubes. They will decompress the stomach by releasing air and liquid contents. This is important for those patients with ileus, intestinal and gastric outlet obstruction.

These conditions can cause vomiting, and patients are at risk of aspirating their stomach contents, which can lead to potentially lethal pneumonitis.

Nasogastric tubes may also be useful for feeding patients who have dysphagia, for example after experiencing a stroke, and also for those who have undergone a tracheostomy.

Nasojejunal tubes are longer versions of NG tubes. They are inserted under endoscopic guidance to lie further in the jejunum and may be useful in feeding patients with pancreatitis.

**REFERENCES**


Table 1. Difficulties while inserting nasogastric tubes and possible solutions

<table>
<thead>
<tr>
<th>Difficulty</th>
<th>Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clogging of the tube in throat</td>
<td>This can be avoided by using a stiff tube and passing it along the floor of the nasal cavity (Dougherty and Lister, 2008).</td>
</tr>
<tr>
<td>Coughing</td>
<td>This indicates the tube is going into the airway. Remove and reinsert it.</td>
</tr>
<tr>
<td>Stressed patient</td>
<td>Ensure good explanations are given and reassure the patient.</td>
</tr>
<tr>
<td>Intubated patient</td>
<td>Use a Magill’s forceps to direct the tube from the mouth into the oesophagus. Always check its position with an X-ray.</td>
</tr>
<tr>
<td>No aspirate after insertion</td>
<td>Stomach may be empty or the tube may be in the oesophagus. Try to change its length by pushing or pulling 3–4cm.</td>
</tr>
<tr>
<td>Tube is blocked</td>
<td>Try to instil 100–200ml of saline or water to irrigate and remove food particles from the stomach.</td>
</tr>
<tr>
<td>Failure</td>
<td>A sip of water and a stiff tube may help. Try to reinsert after 30 minutes.</td>
</tr>
</tbody>
</table>

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