Nasogastric tubes are used in a range of clinical situations. In postoperative surgical patients they are usually inserted for the following reasons:

- To decompress the stomach of its contents, usually after abdominal surgery;
- To provide enteral feeding;
- To administer liquid medication (Makama, 2010).

Nasogastric tubes come in a variety of sizes 8, 10, 12, 14, 16, and 18 French gauge (usually abbreviated as Ch after its inventor, Charriere, or Fr.). This is the same system used to measure urinary catheters. Ryles tubes, used to decompress the stomach, are usually a wider bore 12-18Ch, while enteral feeding tubes are usually a fine-bore size 8-10Ch, although smaller bore tubes are available for paediatric or neonatal patients.

This article focuses on NG tubes used to drain the stomach of surgical patients experiencing transient impairment of intestinal motility following abdominal surgery, known as postoperative ileus (Hans-Geurts et al, 2007). Box 1 lists its signs and symptoms.

**Risks and complications**

In recent years, much attention has been placed on the importance of ensuring NG tubes are correctly placed to avoid serious complications or death; misplaced NG tubes are one of 25 never events for the NHS (NHS England, 2013). The National Patient Safety Agency issued an alert to facilitate the safe insertion of NG feeding tubes, advising healthcare providers to implement a range of policies and procedures to minimise the risk of incorrect tube placement, including staff training, competency frameworks and supervision to ensure all health professionals involved with NG tube placement checks have been assessed as competent (NPSA, 2011).

Reported complication rates for insertion of NG tubes varies widely, with figures of 0.3-15% quoted in the literature (Smith et al, 2012). A number of complications can occur during insertion of an NG tube:

- The tube may coil in the patient’s throat;
- Epistaxis (nosebleed);
- The tube may enter the lungs.

Other problems that occur much less frequently but nurses should be aware of are:

- Aspiration;
- Perforation of the oesophagus;
- Parotitis;
- Sinusitis;
- The tube entering the brain;
- Death from feed entering the lung (Durai et al, 2009).

Although the nursing literature places much emphasis on the correct and safe insertion of NG tubes to minimise the risk of complications (Dougherty and Lister, 2011), there is little information and no clear guidance on the safe removal of NG tubes used in a range of clinical situations, and are associated with a range of complications. Nurses caring for patients with nasogastric tubes should be aware of how to recognise and respond to knotted tubes.

**In this article...**

- Complications associated with nasogastric tubes
- Case study of a knotted nasogastric tube

**Box 1. Symptoms of Postoperative Ileus**

- Abdominal distension
- Abdominal pain
- Delayed passage of flatus/stool
- Inability to eat
- Nausea
- Vomiting

Source: Barletta and Senagore (2014)
Removal of NG tubes should be undertaken with a slow, controlled withdrawal rather than a rapid, uncontrolled motion. This allows the procedure to be stopped if resistance is encountered (Dinsmore and Benson, 1999). If there is any resistance removal should stop immediately and the oral cavity should be assessed for a knot or lariat loop. If either is discovered the procedure should be discontinued and the patient reassured. The patient should then be reviewed immediately by a doctor for endoscopic removal (Tapiawala et al, 2008).

**SAVES** mnemonic

On reviewing the available literature on complications relating to safe NG tube removal, no aide-memoire or similar mnemonic could be found. We felt that this would be useful for nursing staff, to help the safe removal of NG tubes when resistance is felt, and devised the mnemonic SAVES. This has been adopted within our area of clinical practice to facilitate the safe removal of NG tubes:

- **S** – Stop immediately if resistance is felt;
- **A** – Ask patient to open their mouth;
- **V** – Visualise oral cavity;
- **E** – Evaluate what you see – knot or lariat in the NG tube;
- **S** – Summon help from a doctor to facilitate safe removal.

By using this mnemonic when contemplating removal of NG tubes nurses can ensure that if a problem arises it can be dealt with safely and effectively.