

Assisted feeding techniques for the hospitalised canine

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Sarah Collins DipAVN (Medical), RVN, VTS (ECC), CertSAN, discusses various methods for encouraging patients to eat and the options for when they can't or won't

VETERINARY nurses are best placed within the veterinary practice to both provide and monitor nutritional requirements for in-patients. It is therefore important that nurses not only understand basic nutrition, but are also familiar with nutrition for specific conditions and diseases. This article assumes an underpinning knowledge of basic nutrition, and will focus on assisted feeding techniques for the hospitalised canine patient.

Assisted feeding

As a general rule, assisted feeding is indicated if the patient has been (or is likely to be) anorexic for more than two days or if there has been a recent weight loss of more than 10 per cent.

Methods of administration

There are a variety of techniques that can be used to provide assisted feeding, but there are also many factors that may influence the method chosen. These include the nature of the disease, the length of time nutritional support is required, available equipment and whether the patient is a suitable candidate for general anaesthesia. It is important to be aware of the indications, complications and contraindications of the various methods, as well as having an understanding of how different feeding tubes are placed and how they should be used and cared for.

Oral feeding

In most patients it is wise to begin by offering food orally, and many methods can be used to encourage eating. Firstly, it is important to find out what the animal normally eats, whether it has any particular likes and dislikes, and what its normal feeding habits are. It is common for wet food to be offered to an anorexic in-patient; however, some animals do prefer dry food, so this should also be offered. A critical care diet that is balanced to provide all the essential nutrients for recovery is ideal. Such diets are highly palatable due to an increased fat content and are also very energy-dense, meaning that smaller volumes are required. A variety of pet food brands, textures and flavours can also be tried. Freshly cooked meat such as chicken, beef or even sausages can be used to try to kick-start the appetite, hopefully allowing a suitable, balanced diet to be introduced as soon as possible ([Figure 1](#)). Lots of TLC is required to try to tempt the patient to eat. Warming the food to body temperature to maximise the odours may help, as may hand feeding with plenty of praise and encouragement. Some dogs may associate the kennel or ward area with unpleasant experiences, and moving them away may encourage them to eat.

Consideration should be given to how the food is presented – some animals may not eat from a stainless steel bowl, but will happily eat from a plastic or earthenware bowl, and some may only eat from a plate or even from a fork or spoon. Some dogs may allow you to place small boluses of food into their mouth that they will then swallow, and as long as the calorific requirement is met, this is acceptable.

Syringe feeding is another technique that is often well tolerated. A liquid diet that will easily fit through the syringe without blocking it should be selected, or the food can be blended with water to achieve the correct consistency. With dogs, the syringe should be placed between the molar teeth and the cheek. The head should be kept in a normal position to prevent inhalation of the food, which can lead to aspiration pneumonia. Catheter-tipped syringes are ideal as they have a larger hole than standard syringes. This can be quite a messy procedure, but if it is tolerated and sufficient food can be administered then this is also acceptable. However, if syringe feeding is resented, it should be stopped. Force feeding should not be carried out as it can create a food aversion that will complicate the situation.

Contra-indications for oral/syringe feeding include the absence of a gag reflex and severe vomiting. Complications include aspiration pneumonia and food aversions.

Naso-oesophageal tubes

Naso-oesophageal tubes are ideal for short-term nutritional support (up to seven days), and can be easily placed in a conscious/sedated dog ([Figure 2](#)). They are placed so the tip lies in the caudal oesophagus, and are used in preference to nasogastric tubes in which the tip would be placed directly into the stomach. Placing the tip of the tube into the stomach creates a small opening in the cardiac sphincter that can allow gastric reflux to occur, leading to oesophagitis, and also increase

the occurrence of vomiting and aspiration pneumonia. Small-bore tubes must be used due to the size of the nostrils, which means that a liquid food of suitable consistency should be used to prevent the tube from blocking. When using a naso-oesophageal tube it is important to check its position prior to each feed as it can be regurgitated and either chewed off or inhaled. Once correct positioning is confirmed, the food can be administered slowly via the tube. The food should be at body temperature to prevent vomiting. After feeding, the tube should be flushed with 2ml to 5ml water to clear it of any food that may cause a blockage. Blockages can be dealt with by instilling a carbonated cola drink into the tube and leaving it for a few hours to break down the blockage before attempting to flush the tube again. As the tube does not interfere with food intake, it is still possible for the patient to eat voluntarily, so it is easy to assess when an animal is eating enough food and the tube can be removed.

Contraindications for naso-oesophageal tube feeding include oesophagitis, megaesophagus, vomiting or regurgitation, lack of gag reflex, surgery involving the mouth/ pharynx/oesophagus, oesophageal transit/ deglutition disorders, delayed gastric emptying, surgery to hepatic ducts, altered state of consciousness, fractures of the nasal cavities, rhinitis, severe thrombocytopaenia/pathy, and brain trauma or intracranial hypertension. Complications include local irritation of the nasal passages, vomiting and aspiration.

Oesophagostomy

Oesophagostomy tubes can be used for short to medium-term nutritional support. They are well tolerated, but must be placed under general anaesthesia. As these tubes are placed directly into the oesophagus they have a larger diameter than naso-oesophageal tubes, which makes administration of food easier, with a decreased chance of blockages ([Figures 3](#) and [4](#)). Placement technique is explained in [Table 1](#).

A stoma should be allowed to form, which usually takes about five days, after which the tube can be removed if it is no longer required. As these tubes bypass the upper respiratory tract, they are suitable for use in patients with trauma or disease of the nasal/oral cavities. However, they are contraindicated in animals that have primary or secondary oesophageal disorders, vomiting, delayed gastric emptying, surgery to the hepatic ducts or no gag reflex.

Complications include dislodgement of the tube due to vomiting or regurgitation, risk of jugular puncture during placement and infection at the insertion site.

Gastrostomy

Gastrostomy tubes are suitable for providing medium to long-term nutritional support. The tube must be left in place for a minimum of seven days to allow a stoma to form, but can then remain for months or even years with good management. As the tube is placed directly into the stomach, a much wider-bore tube can be used, making administration of food and medication much easier,

with a lower incidence of tube blockage ([Figure 5](#)). Gastrostomy tubes are indicated when the upper gastrointestinal tract must be bypassed – for example, in oesophageal disease such as a stricture or oesophagitis, or when long-term anorexia due to trauma or systemic disease is expected. These tubes are very well tolerated, and often patients are able to be discharged and managed at home. They also allow the animal to eat normally (if indicated), so the anorexic patient can still be tempted to eat.

Gastrostomy tubes are available in kit form for percutaneous placement, and singly for surgical placement. There are three techniques used to place a gastrostomy tube, all of which require general anaesthesia.

Surgical gastrostomy tube placement

The tube is placed surgically during laparotomy. This method has been largely superseded by endoscopic placement, which is less invasive. However, surgical placement is indicated if laparotomy for other reasons is planned – for example, hepatic biopsies or exploratory surgery, in which case it is wise to place the gastrostomy tube during the same procedure if indicated.

Percutaneous endoscopic gastrostomy (PEG) tube placement

This is probably the most popular technique for placing a gastrostomy tube as it is fairly non-invasive and allows visualisation of the oesophagus and stomach. The patient should be positioned in right lateral recumbency. The area approximately 10cm to 15cm caudal to the last rib is clipped and surgically prepared. Following placement, the area should be cleaned and a light dressing applied. A stockinette vest is useful for protecting the tube.

Blind percutaneous gastrostomy tube placement

This technique can be used if an endoscope is not available. It is similar to endoscopic placement, but involves using a rigid orogastric tube.

The technique chosen will depend on the experience of the surgeon and on the equipment available, but once these techniques have been mastered, they provide a quick and efficient way of placing a long-term feeding tube.

Gastrostomy tube management

As gastrostomy tubes are often used for long-term nutritional support, it is important that they are managed correctly to prevent complications. The tube must not be used for the first 24 hours after placement as it is imperative that a seal forms between the stomach wall and the body wall. This helps prevent peritonitis. Maintenance and use of gastrostomy tubes is explained in [Table 2](#).

Gastrostomy tubes can be removed in a variety of ways. However, they must not be removed within the first seven days of placement as a stoma must be allowed to form prior to removal, to reduce the risk of peritonitis occurring once the tube has been removed. In large dogs it may be possible to simply cut the tube close to the body wall and allow the tip to be passed in the faeces, with the risks being fully assessed by the clinician managing the case. This is not recommended in smaller patients as the tip may cause an obstruction. The tube can also simply be pulled out with a sharp tug, making sure it is empty of food before doing so. If repeat endoscopy to check progress is necessary, the tube tip can be grasped with the endoscopic forceps and cut off close to the body wall. The tip can then be retrieved and removed with the endoscope. The wound can be left to heal by granulation.

Gastrostomy tubes are contraindicated in patients that have stomach disorders, ascites, peritonitis, risk of dehiscence of the abdominal wall, persistent vomiting or a gastrointestinal obstruction. Complications include vomiting, peritonitis and local infection at insertion site.

Enterostomy

Enterostomy tubes involve the placement of a small-bore feeding tube into either the duodenum (duodenostomy) or jejunum (jejunostomy). Such feeding tubes are rarely used, but may be indicated in conditions when the stomach and/ or duodenum need to be bypassed, and are an alternative to total parenteral nutrition in such cases. These tubes are placed surgically at laparotomy. As they bypass the stomach, food should be administered as a constant-rate infusion. Due to the small bore of the tube the diet must be liquid, and because the food is to be infused directly into the small intestine, special isotonic diets should be used. However, such diets are not available for veterinary patients, and human preparations are not suitable.

Complications include diarrhoea, tube displacement, blockage and kinking of the tube, and possible perforation of the small intestine by the tube tip.

Conclusions

Once a patient has been identified as requiring assisted feeding, it is important to begin feeding as soon as possible to provide optimal nutrition. The most appropriate technique should be selected; however, this choice may change as the condition or disease changes, and it is important to consider nutritional support as an ongoing treatment that requires frequent evaluation.

Please note that this article is intended as a guide only and each case should be assessed on its own merits by the clinician managing the case.

• With thanks to Anderson Moores Veterinary Specialists for permission to use the photographs.

Further reading

- Pibot P, Biourge V and Elliott D (eds) (2006). *Encyclopedia of Canine Clinical Nutrition*. Royal Canin, Aimargues.
- Battaglia A (2007). *Small Animal Emergency and Critical Care for Veterinary Technicians* (2nd edn). Saunders, St Louis.