

Nursing notes: pre-surgery fasting and anaesthesia

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Categories : [Clinical](#), [RVNs](#)

Date : December 7, 2016

The occurrence of gastro-oesophageal reflux (GOR) during the pre-anaesthetic, peranaesthetic and post-anaesthetic period has been well-documented in dogs and cats, with occurrence rates ranging between 17-50%.



A different approach to fasting has been recommended, says Louise. IMAGE: Fotolia/vectorass

This occurs due to a reduction in lower oesophageal sphincter pressure, and the effects can range from oesophageal inflammation and stricture to death or euthanasia.

During anaesthesia, GOR often occurs unnoticed and the incidence can be related to the:

- surgical procedure being undertaken
- age of the patient
- drugs used for premedication and induction of anaesthesia
- volume and acidity of gastric contents
- length of time the patient has been fasted prior to anaesthesia

How to fast

In human patients undergoing anaesthesia, one common cause of death is related to pulmonary aspiration of gastric contents.

Previously, because of this risk, patients were fasted of solids overnight, or for six to eight hours prior to induction of anaesthesia, to try to ensure an empty stomach.

More recently, a different approach to fasting has been recommended that permits the consumption of clear liquids until two hours before anaesthesia and a light meal up to six hours pre-anaesthesia.

In veterinary patients, similar confusion exists, with most clinicians recommending free access to water until just before anaesthesia (pre-med) or withholding it for two to four hours pre-anaesthesia. Withholding food has similar variations, with fasting times ranging from 6 to 12 hours preoperatively.

Much of the issue around preoperative fasting times, in animal and human patients, is associated with the volume and acidity of gastric contents at induction of anaesthesia, which depends on the length of fasting time and type of food ingested.

In humans, no correlation was found between the volume of gastric contents and incidence of reflux following induction of anaesthesia in humans, and a prolonged fasting time did not necessarily result in a reduction in gastric content volume.

Even having a light meal two to three hours prior to anaesthesia did not change the volume or pH of gastric contents in adults at induction of anaesthesia.

Exploring solutions

So, what does this mean for our patients? As in humans, it was found extending the duration of preoperative fasting was associated with increased gastric acidity and an increased occurrence of reflux.

In studies in dogs fed 2 to 4 hours prior to the induction of anaesthesia, no reflux was observed, whereas patients fasted for 12 to 18 hours or 24 hours saw an increase in GOR from 14.8 to 26.9%, respectively.

This suggests an extensive fasting time may actually be detrimental.



When considering the surgical list in the morning, those likely to be last into surgery should be given one teaspoon or tablespoon of food, depending on the size of the patient. IMAGE: Fotolia/tverkhovinets

A study¹ looked at feeding a reduced volume of canned food three hours before anaesthesia and this did not significantly increase the gastric contents compared to other diet types.

In this patient group, the pH of the gastric contents remained high (more neutral), which may be more beneficial in terms of reducing GOR during anaesthesia.

Overall, this suggested fasting time of around six hours may be beneficial in veterinary patients – a length of time that may be hard to achieve in patients that would have last been fed the evening before.

What may be useful is to consider the surgical list, and in patients likely to be last on the list, administering a small volume of food, one teaspoon or tablespoon depending on the size of the patient, on the morning of surgery, if they are unlikely to undergo anaesthesia until later in the afternoon.

References

1. Savvas I et al (2009) The effect of pre-anaesthetic fasting time and type of food on gastric content volume and acidity in dogs, *Vet Anaesth Analg* **36**(6): 539-546.