

# Gastrostomy feeding tubes

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James talks to Anastasia Volovets about gastrostomy feeding tubes, which can be used in patients with prolonged inadequate or absent oral intake to provide a route for enteral feeding, hydration, and medication administration. Gastrostomy feeding tubes are an appropriate long-term solution in appropriate patients. However, they have significant morbidity so they may not be in the best interest of the patient. Learn more about enteral feeding and feeding tubes in this podcast.

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## About Dr Anastasia Volovets

Dr Anastasia Volovets is a consultant [gastroenterologist and hepatologist](#). After completing her advanced training at [Royal Prince Alfred Hospital](#), she took off for the green pastures of Edinburgh in Scotland to complete a fellowship in advanced [liver disease](#) and [liver transplantation](#). On return she did some more liver transplantology as a consultant before settling into a part-time staff specialist duties at RPA as well as some private practice locally.

Anastasia loves teaching patients, nurses, medical students and other doctors almost as much as she loves the liver. She is currently involved in developing a statewide curriculum on gastrostomy feeding in her spare time and can often be found wandering the hospital with a cup of coffee and a [toxicology](#) textbook.

## Gastrostomy feeding tubes

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*With Dr Anastasia Volovets, Gastroenterologist and Hepatologist, Royal Prince Alfred Hospital, Sydney, Australia*

### Introduction

In patients with prolonged inadequate or absent oral intake gastrostomy tubes can be used to provide a route for enteral feeding, hydration, and medication administration.

### Case

**You are a junior doctor on the wards and you're called to see a 65-year-old male, who is day 5 post-stroke with an impaired swallow. He is unable to tolerate oral feed and his family is worried he will starve to death.**

## 1. Management of this patient

IV fluids do not provide the caloric support or nutrients needed by patients, after 48 hours of impaired oral feeding, enteral feeding should be considered.

- Short term this would be a nasogastric tube
- Longer term (greater than 6 weeks) a gastrostomy or jejunostomy should be considered

## 2. Indications for enteral feeding

- Neurological disorders causing impaired swallowing and aspiration of food
  - Stroke (most common)
  - Traumatic brain injury
  - Parkinson's disease
- Structural problems
  - Malignancy obstructing the gastrointestinal tract, this can include upper GI, head, nose or throat. Gastrostomy insertion can be done prophylactically prior to treatment that will impair the functioning or path of the tract such as surgery or radiotherapy

## 3. Contraindications to gastric feeding tubes

- Absolute
  - High bleeding risk - uncorrected coagulopathy, thrombocytopenia
  - Chronic liver disease - varices and ascites
  - Peritonitis or abdominal perforation
  - Cellulitis at selected PEG site
  - Gastric outlet obstruction or gastroparesis, these patients will require jejunostomy tubes
- Relative
  - Severe oropharyngeal dysphagia
    - These patients are at risk of aspirating on their own saliva which is not ameliorated by gastrostomy tube insertion

- Anatomical considerations such as morbid obesity, significant hepato/splenomegaly, previous abdominal surgery
- Peritoneal dialysis, these patients are at an increased risk of spontaneous bacterial peritonitis
- Ventriculoperitoneal shunt, these patients are at an increased risk of meningitis
- Throat malignancy or oesophageal malignancy, potential risk of seeding along PEG tract
- Severe/uncontrolled gastro-oesophageal reflux, risk of aspiration of gastric contents/feeds
- Patients on anti-coagulation or anti platelet agents
- Significant medical comorbidities making the patient unsuitable for sedation/anaesthetic

#### 4. Optimisation prior to procedure

- Ensure a feeding tube is indicated and ethically appropriate
- Consent the patient or guardian
- Ensure the bleeding risk is minimized
  - Aspirin can usually be continued, however dual antiplatelet therapy is inadvisable
  - Warfarin/NOACs will need to be stopped/reversed, in patients with risk of thromboembolism this should be discussed with seniors

#### 5. How are gastrostomy tubes inserted

- Percutaneous endoscopic gastrostomy (PEG) - most common
  - These are inserted with endoscopy guidance under sedation. During the endoscopy a suitable internal site is visualised within the stomach, a cannula is then passed percutaneously to this site over which the gastrostomy tube is inserted
- Radiological inserted gastrostomy (RIG)
  - In these procedures patients are prepared with contrast down a nasogastric tube the night prior. The following day a tube is inserted percutaneously with contrast allowing the colon to be visualised by fluoroscopy and avoided
  - This can be done awake or with minimum sedation
- Jejunostomy
  - These can be used in cases where the stomach has been removed. They are usually done by the upper GI surgical team laparoscopy

- requiring a general anaesthetic
- In some centres they can be inserted percutaneously, PEG-J
- Laparoscopy/laparotomy inserted Gastrostomy
  - These are less common as they require a general anaesthetic

## 6. Intra-procedural risks

- Aspiration pneumonia secondary to lying flat on their back
- Cardiovascular collapse secondary to sedation
- Catastrophic bleeding secondary to trauma to vessels
- Damage to of adjacent organs e.g. colon, liver

## 7. Post-procedural healing

- Over a period of 6-8 weeks the stomach is pulled to lie adjacent to the abdominal wall and adhesions/scar tissue forms around the tube creating a mature tract.

## 8. What are the usual post-insertion gastrostomy complications to watch out for on the wards?

- Abdominal pain, secondary to incision site and diaphragmatic irritation
  - AXR may show air under diaphragm, this may be due to insufflation of the abdominal cavity and is not always confirmation of perforation
- Peritonitis
  - Consider if the pain is very severe
  - A CT will be needed to exclude perforation or collection
- Bleeding/ooze at site of insertion
  - A small amount of bleeding/ooze is expected after the procedure

## 9. Longer term complications?

- Accidental removal or dislodgement, this is an emergency, even in a mature tract the skin can begin to close over within 2-4 hours. These can be managed on the ward promptly but only for gastrostomy tubes (not jejunostomy).
  - If the tract is immature (less than 6 weeks old), inform gastroenterology/surgical team immediately and do not attempt to reinsert the tube yourself. Inserting new tubes into the tract can displace the stomach from anterior abdominal wall and disrupt the adhesions
  - If the tract is mature (over 6 weeks), try to replace the gastrostomy as soon as possible. If you do not have access to a gastrostomy tube you can place an IDC to keep the tract open and maintain access until the correct tube is located
- Incorrect fit, the bolster should lie 2-5mm away from the skin
  - If the bolster is too tight it can cause pressure ulcers and cellulitis
  - If the bolster is too loose there is leaking of gastric contents onto adjacent skin causing irritation or excoriation
  - If the bolster is very loose the tube can migrate into the stomach and cause a bowel obstruction by blocking the pylorus
- Granulation tissue can grow around the site, this is not painful but it can bleed and the appearance may be distressing to patients
- Tube blockage, if unsuitable contents passed through
- Tube degradation, if not changed

## 10. Ethical consideration

- There is a group of patients with poor prognosis due to their underlying diseases, such as dementia or malignancy. It is important to understand that in these patients there is no evidence that a feeding tube increases quality of life or prolongs survival. The appropriateness of a gastrostomy should be carefully considered in these patients with multidisciplinary team involvement and senior medical guidance.

## Take home messages

- Gastrostomy tubes are an appropriate long-term solution to inadequate oral intake in appropriate patients.
- However, they have significant morbidity and may not be always in the best interest of the patient.

## Related Podcasts

- [Nasogastric tubes](#)
- [Nutrition](#)
- [Stomas](#)

**Tags:** #aspiration of food,#endoscopy,#feeding tube,#gastroenterology,#Gastrostomy,#gastrostomy feeding tubes,#general medicine,#impaired oral feeding,#impaired swallowing,#jejunostomy,#nutrition,#Percutaneous endoscopic gastrostomy (PEG),#Radiological inserted gastrostomy,#stroke,#Upper GI Surgery