

# Gastrostomy ('PEG') tubes and the ED

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Percutaneous endoscopic gastrostomy (PEG) and radiology-inserted gastrostomy (RIG) have become the modality of choice for providing enteral access to patients who require long-term enteral nutrition and or administration of medication. In many such as those patients with chronic neurological dysfunction from traumatic brain injury, stroke and or cerebral palsy, the gastrostomy tube is the sole route nutrition and timely administration of medications is delivered in the community and is therefore dependent on the functioning of the gastrostomy tube.

Patients may present directly to the ED rather than through the Nutrition Team with problems with their gastrostomy tube. This guideline may help with managing the patient with gastrostomy tube problems presenting to the ED.

## Approach to gastrostomy problems

To help manage the patient presenting to the ED with a problem with their gastrostomy tube, it is often helpful to consider these two questions:

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| <ol style="list-style-type: none"><li>1. What is the gastrostomy tube used for?</li><li>2. What is wrong with the gastrostomy?</li></ol> |
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### 1. What is the gastrostomy tube used for?

Options:

1. Complete dependence on gastrostomy tube for nutrition and administration of medication
2. Prophylactic insertion as **may** run into problems in the future but oral enteral route is working just fine e.g. patient with throat cancer due to start radiotherapy

Regardless of the problem with the gastrostomy and or its tube, if the gastrostomy tube does not work in those patients with complete dependence on the gastrostomy tube for nutrition and administration of medication:

- Emergency admission to the Gastroenterology take at QMC is required in order for:
  - *immediate intervention of providing supportive nutrition and alternative means of administering medication*
  - *electively re-establishing definitive gastrostomy access*

### 2. What is wrong with the gastrostomy tube?

Possibilities:

1. Tube is blocked
2. Tube has fallen out
3. Tube is split and leaking fluid
4. Painful to administer stuff through the gastrostomy
5. Tube is stuck in the gastrostomy and won't move in and out of the gastrostomy

## 1. The gastrostomy tube is blocked

Thick enteral nutrition feed, medications (thick gloopy syrups versus crushed tablets), and other things can clog the PEG tube which itself predisposes to being blocked by being such narrow caliber. This complication occurs in up to 45% of patients. Prevention is the key to avoiding this problem. Medications should be crushed and dissolved completely in water before administering through the PEG tube. The PEG tube should be flushed with 30-60 mL of free water using a large syringe after medication administration and every 4 hours. Use of saline to irrigate can cause crystallization and promote clogging.

### How to unblock the blocked gastrostomy tube

Infusion of warm water from a running tap (no need for sterile water) to unclog the PEG (or RIG) tube is superior to other agents and as such should be the only intervention in association of aspiration of the gastrostomy tube contents with a syringe.

Do not infuse coca cola, saline, whatever fluid that is not warm water down the gastrostomy tube. Do not insert a guidewire down the lumen of the gastrostomy tube.

Obtain a gastrostomy tube syringe from the 'Sorting out a PEG' box held in the ED store cupboard. Gastrostomy tube syringes have purple plunges and are the only syringes that have the required tip to fit the gastrostomy tube end. Do not use 'normal' non-purple syringes such as those with a luer lock or slip tip as these tips will not fit onto the gastrostomy tube end.



Purple nutrition syringes with ends that specifically fit the gastrostomy tube end

Using a 10ml, 20ml or 50ml purple nutrition syringe firstly try to aspirate the crud that is blocking the lumen of the gastrostomy tube. After attaching the purple nutrition syringe to the gastrostomy tube end, repeatedly withdraw the syringe plunger and gently push the plunger pack in using air alone. If this intervention does not work, then fill the purple nutrition syringe with warm water from a running tap and try to infuse warm water through the gastrostomy tube to unclog the lumen.

If you are successful in unblocking the blocked gastrostomy tube, confirm its correct placement inside the stomach by measuring the pH of (hopefully the gastric) contents aspirated. Gastric aspirates have a pH of 5.5 and below. Use the gastric pH indicator strips / paper that are found in the 'Sorting out a PEG' box held in the ED store cupboard. If the aspirate has a pH of 5.5 or below, then the PEG (or RIG) is safe to use, safe for the feed to be reconnected and safe for medication to be administered.

## If the blocked gastrostomy tube remains blocked

If the patient has complete dependence on gastrostomy tube for nutrition and administration of medication:

1. Admit as an emergency to the acute gastroenterology take to ward C31 (or if a bed is available on F21) by contacting the acute gastroenterology registrar on-call
2. Establish IV access and prescribe, start IV crystalloid such as 0.9% saline 1L at a maintenance rate e.g. 8 hourly
3. Prescribe essential medications such as anti-epileptics using an alternative route to the enteral / oral route e.g. IV, PR
4. Using generic ED email address, email the nutrition nurses [tracy.buchanan@nuh.nhs.uk](mailto:tracy.buchanan@nuh.nhs.uk) or [maxine.tinker@nuh.nhs.uk](mailto:maxine.tinker@nuh.nhs.uk) with the name of the patient, hospital number

If the patient has the gastrostomy tube as a prophylactic measure as they **may** run into problems in the future but oral enteral route is working just fine e.g. patient with throat cancer due to start radiotherapy:

1. Allow the patient home if they are otherwise well. Advise the patient to not use the blocked gastrostomy tube until they have further instruction to do so from the nutrition nurses and to use the oral enteral route only for nutrition and medication use.
2. Using generic ED email address, email the nutrition nurses [tracy.buchanan@nuh.nhs.uk](mailto:tracy.buchanan@nuh.nhs.uk) or [maxine.tinker@nuh.nhs.uk](mailto:maxine.tinker@nuh.nhs.uk) with the name of the patient, hospital number

## 2. The gastrostomy tube has fallen out

Accidental dislodgement of the PEG tube occurs in typically 5% of cases. Patients with confusion or those who are combative are at higher risk. Maturation of the PEG (or RIG) tube track occurs in 7-10 days, but in the presence of poor wound healing, malnutrition, ascites, and corticosteroid treatment, it may be delayed up to 4 weeks.

### Management of the patient with the tube fallen out

Follow each step in turn:

#### 1. What is the gastrostomy tube used for?

Options:

- a. Complete dependence on gastrostomy tube for nutrition and administration of medication
- b. Prophylactic insertion as **may** run into problems in the future but oral enteral route is working just fine e.g. patient with throat cancer due to start radiotherapy

If the patient has complete dependence on gastrostomy tube for nutrition and administration of medication:

1. Admit as an emergency to the acute gastroenterology take to ward C31 (or if a bed is available on F21) by contacting the acute gastroenterology registrar on-call

2. Establish IV access and prescribe, start IV crystalloid such as 0.9% saline 1L at a maintenance rate e.g. 8 hourly
3. Prescribe essential medications such as anti-epileptics using an alternative route to the enteral / oral route e.g. IV, PR
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If the patient has the gastrostomy tube as a prophylactic measure as they **may** run into problems in the future but oral enteral route is working just fine e.g. patient with throat cancer due to start radiotherapy:

1. Allow the patient home if they are otherwise well AND the gastrostomy tube has been in for at least 2 weeks.
2. Admit the patient to the acute gastroenterology take if the gastrostomy tube has been inserted in the preceding 2 weeks
3. Using generic ED email address, email the nutrition nurses [tracy.buchanan@nuh.nhs.uk](mailto:tracy.buchanan@nuh.nhs.uk) or [maxine.tinker@nuh.nhs.uk](mailto:maxine.tinker@nuh.nhs.uk) with the name of the patient, hospital number

## **2. When was the gastrostomy tube inserted?**

Options:

- a. In the past fortnight
- b. Over two weeks ago

*Asking the patient, the patient's carer and or looking on NOTIS may help yield this information.*

Patients whose gastrostomy tube was inserted in the past fortnight require IV antibiotics (such as IV Augmentin 1.2g) to be given in the ED to help reduce the risk of peritonitis related to leakage of gastric contents into the peritoneum through the iatrogenic hole made in the anterior stomach wall. These patients whose gastrostomy tube was recently inserted and now fallen out require emergency admission to the acute gastroenterology take.

## **3. How was the gastrostomy tube inserted?**

Options:

- c. PEG (endoscopically)
- d. RIG (radiology-guided)

*Asking the patient, the patient's carer and or looking on NOTIS may help yield this helpful but not essential information.*

## **4. Maintain the gastrostomy stoma by inserting urinary catheter into the stoma**

Insert an urinary catheter of similar Fr caliber into the gastrostomy stoma site. It does not matter whether you insert a female or male catheter into the gastrostomy stoma site. If there is resistance / difficulty in inserting the urinary catheter into the gastrostomy stoma site then do not continue to try. After the urinary catheter has been inserted into the gastrostomy stoma and its tip is lying inside the stomach, confirm its correct placement inside the stomach by measuring the pH of (hopefully the gastric) contents aspirated.

Gastric aspirates have a pH of 5.5 and below. Use the gastric pH indicator strips / paper that are found in the 'Sorting out a PEG' box held in the ED store cupboard.

Once the correct placement of the urinary catheter has been confirmed, inflate the urinary catheter balloon using sterile water to the volume stipulated on the urinary catheter. Apply a simple dressing over the catheter to help it keep in the gastrostomy stoma. DO NOT ADMINISTER ANY FEED NOR ANY MEDICATION THROUGH THE LUMEN OF THE URINARY CATHETER THAT IS IN THE GASTROSTOMY STOMA. The sole purpose of the urinary catheter is to help maintain the stoma track for a gastrostomy tube to be re-inserted electively by the nutrition team. The urinary catheter is not to be used as an 'ad hoc gastrostomy tube' for administering feed nor medication.

### **3. The gastrostomy tube is split and or leaking fluid**

PEG (or RIG) tubes degrade over time, presenting as cracking, puncture or brittleness and typically driven by chronic low-grade fungal infection within the tube. The gastrostomy tubes are electively replaced to try and prevent them reaching the cracked and or puncture stage but patients may still present complaining of the tube leaking fluid due to a split in the tube.

One approach to the split tube / tube leaking fluid includes:

#### ***Where is the leak coming from in the tube?***

Options:

- a. Very near the bung at the external end of the gastrostomy tube
- b. Very near the skin where the tube passes into the gastrostomy stoma

If the leak is due to a discrete crack very near the bung at the external end of the gastrostomy tube and there is sufficient length of tube, consider cutting the tube proximal to the crack and then re-attaching the bung to the external end of the gastrostomy tube. Using generic ED email address, email the nutrition nurses [tracy.buchanan@nuh.nhs.uk](mailto:tracy.buchanan@nuh.nhs.uk) or [maxine.tinker@nuh.nhs.uk](mailto:maxine.tinker@nuh.nhs.uk) with the name of the patient, hospital number. Confirm its correct placement inside the stomach by measuring the pH of (hopefully the gastric) contents aspirated. Gastric aspirates have a pH of 5.5 and below. Use the gastric pH indicator strips / paper that are found in the 'Sorting out a PEG' box held in the ED store cupboard. If the aspirate has a pH of 5.5 or below, then the PEG (or RIG) is safe to use, safe for the feed to be reconnected and safe for medication to be administered.

If the leak is due to splitting / cracking very near the skin where the tube passes into the gastrostomy stoma and or leakage of gastric contents contact the acute gastroenterology registrar on-call with the view of admission under the acute gastroenterology take. Using generic ED email address, email the nutrition nurses [tracy.buchanan@nuh.nhs.uk](mailto:tracy.buchanan@nuh.nhs.uk) or [maxine.tinker@nuh.nhs.uk](mailto:maxine.tinker@nuh.nhs.uk) with the name of the patient, hospital number.