

CLINICAL GUIDELINE · PEDIATRIC COMPLEX CARE PLATFORM

Gastrostomy Tube Complications

Recognition and management of tube-related and stoma/peristomal complications of gastrostomy tubes in children

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<i>Intended for healthcare professionals as a clinical reference. Apply with clinical judgment and in line with local protocols.</i>		

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1 Tube-Related Complications

1.1 Accidental Dislodgement

First: Determine when the G-tube was inserted and when it became dislodged. The gastrostomy tract can begin to narrow within **1 hour** of tube removal.

Immature/Recent Tract — <12 weeks

- **Do not attempt blind bedside replacement** (risk of false tract, intraperitoneal placement, and peritonitis).
- Keep NPO via G-tube, cover the stoma with clean, dry gauze and obtain **urgent surgical assessment** as soon as possible.

Mature/Established Tract — ≥12 weeks

- Replace as soon as possible, **ideally within 4 hours**, by a healthcare professional competent in G-tube replacement.
- A dislodged PEG may be replaced with an appropriate balloon-retained G-tube/button through an established tract.
- If the appropriate replacement tube is unavailable or cannot be inserted, consider an appropriately sized **Foley catheter** temporarily to maintain tract patency, and obtain specialist assessment.
- Do not use the replacement G-tube or Foley catheter for feeding or medications **until position is confirmed**.
- **Do not force** the G-tube or Foley catheter if resistance is encountered.

If replacement is difficult/unsuccessful, position is uncertain, or there is significant pain, abdominal distension, or bleeding following replacement, **stop further manipulation, do not use the tube, and obtain urgent specialist assessment**.

1.2 Blocked G-Tube

Prevention

- Flush with water after each feed, before and after medications, and between individual medications.
- For continuous feeds, flush the G-tube with water every 4 hours to maintain tube patency.
- Use liquid medications when appropriate. If tablets are used, ensure they are suitable for crushing, finely crushed, and well dissolved.
- Give medications separately; do not mix medications together or with formula.

Troubleshooting

- Check for kinks, closed clamps, or a blocked extension set; replace the extension set if needed.
- Flush with warm water using a ≥10 mL syringe and a gentle push-pull (pulsatile) technique.
- Allow warm water to dwell briefly, then repeat as needed.
- Do not use excessive force or a small syringe to generate higher pressure.
- Do not use carbonated beverages or juice; warm water is preferred.

→ **If blockage persists:** consider tube replacement if appropriate and within the clinician's competency; PEG tubes require Pediatric Gastroenterology/Surgery assessment for replacement.

1.3 Loose / Poorly Fitting G-Tube

Low-Profile Balloon G-Tube

- Check balloon integrity and volume; refill to the manufacturer-recommended volume if underfilled. Do not overinflate.
- If the tube is too long/loose, measure the gastrostomy tract using a stoma measuring device and replace with the appropriate tube length.
- Persistent looseness despite appropriate balloon volume and tube length → Pediatric Gastroenterology/Surgery assessment.

PEG Tube

- Adjust the external fixation plate so that it is secure but not excessively tight against the skin.
- Persistent looseness despite appropriate positioning → Pediatric Gastroenterology/Surgery assessment.

1.4 Damaged G-Tube / Connector

Assess

- Inspect for tube or connector damage/leakage.
- Determine whether the damage involves a replaceable external component (e.g., extension set/Y-connector) or the G-tube itself.

Management

- If a replaceable external component is damaged, replace it.
- If the G-tube itself is damaged/leaking, do not use it until repaired/replaced.
 - Low-profile balloon G-tube:
 - Established tract (≥12 weeks): replace by a healthcare professional competent in G-tube replacement.
 - Recent tract (<12 weeks): do not attempt blind replacement; obtain urgent Pediatric Gastroenterology/Surgery assessment.
 - PEG tube: arrange repair/replacement by Pediatric Gastroenterology/Surgery.
- Do not use adhesive tape as a definitive solution.

1.5 Suspected Buried Bumper Syndrome

PEG tubes

Suspect If

- PEG tube cannot be freely rotated or advanced inward.
- Pain or tenderness around the stoma.
- Bulging or swelling around the stoma.
- New or increased peristomal leakage.
- Difficulty/pain with feeding/flushing.

Management

- **Stop using the tube** and avoid further manipulation.
- Obtain **urgent** Pediatric Gastroenterology/Surgery assessment.

1.6 Tube Migration / Malposition

PEG tubes

Suspect If

- Change in external tube length/markings compared with baseline.
- New vomiting, abdominal pain/distension, or feeding intolerance.
- Difficulty or pain with feeding/flushing.
- New or increased peristomal leakage.

Management

- Check external tube length/markings and fixation plate position against the documented baseline.
- If malposition is suspected, **stop using the tube** and avoid further manipulation.
- Obtain Pediatric Gastroenterology/Surgery assessment; confirm position with imaging when indicated.
- After repositioning/replacement, secure the external fixation plate appropriately to prevent recurrent migration.

1.7 Gastrocolocutaneous Fistula

PEG tubes

Suspect If

- Diarrhea shortly after G-tube feeding.
- Feculent drainage or odor from the G-tube/stoma.
- Passage of gas or stool-like material through the gastrostomy.

Management

- **Stop using the tube** and avoid further manipulation.
- Obtain **urgent** Pediatric Gastroenterology/Surgery assessment.
- Confirm anatomy/position with contrast imaging, as directed by the specialist team.

2 Stoma & Peristomal Complications

2.1 Peristomal G-Tube Leakage

Check the tube/device

- Low-profile balloon G-tube:
 - Check balloon integrity/volume.
 - Ensure the tube length is appropriate.
- PEG tube:
 - Ensure the external fixation plate is appropriately positioned.
 - Check for tube migration/malposition, particularly if there is a change in external tube length/markings.
 - Consider buried bumper syndrome if the tube cannot be freely rotated or advanced inward, particularly with pain/difficulty feeding/flushing → **stop using the tube and obtain urgent Pediatric Gastroenterology/Surgery assessment**.

Identify and treat contributing factors

- Treat constipation, delayed gastric emptying, and factors causing increased intragastric pressure (e.g., vomiting, coughing, or crying).

Manage the leakage

- Consider slower feeds and/or G-tube venting when appropriate.
- Protect surrounding skin with a barrier preparation; use an absorbent dressing if needed.
- Consider a PPI if acidic gastric leakage is contributing to significant peristomal skin irritation.
- Do not routinely upsize the G-tube, as this may enlarge the tract and worsen leakage.

→ **Escalate:** Persistent or high-volume leakage → Pediatric Gastroenterology/Surgery assessment.

2.2 Granulation Tissue

Reduce friction, tube movement, and moisture

- Ensure the G-tube is appropriately fitted and stabilized.
- For button devices, remove the extension set when not in use.
- Keep the stoma clean and dry and address any leakage.

Local treatment

Normal saline soaks

Apply for 5 minutes, up to 4 times daily, then dry thoroughly. Before silver nitrate application, rinse off any residual saline with water and dry thoroughly.

Topical corticosteroid

One off-label regimen is fluticasone propionate (Flixotide®) **125 mcg, 1 puff** directly onto the granulation tissue **twice daily for 7–10 days**.

Silver nitrate

Clean the area with water (not saline) and dry thoroughly. Protect the surrounding healthy skin with petroleum jelly/barrier ointment, then apply silver nitrate to the granulation tissue only. Application should be performed by trained personnel.

→ Persistent, recurrent, extensive, or atypical granulation tissue → Pediatric Gastroenterology/Surgery assessment.

2.3 Irritant / Contact Dermatitis

Features

- Peristomal erythema, often well-demarcated and corresponding to areas exposed to gastric leakage, moisture, adhesive, or friction.
- May be sore, excoriated, or weeping, but without spreading cellulitis or systemic features.

Management

- Identify and correct the underlying cause, particularly leakage, moisture, friction, or an irritant product.
- Keep the skin clean and dry.
- Apply barrier preparation (e.g., zinc-based barrier cream).
- Use an absorbent dressing if significant moisture/leakage is present.
- Avoid unnecessary topical antibiotics.

2.4 Bacterial Infection / Cellulitis

Features

- **Localized superficial infection:** localized erythema with tenderness and/or purulent discharge.
- **Cellulitis:** spreading erythema, warmth, swelling, and tenderness; may be associated with fever or systemic features.

Management

- Assess for abscess/collection.
- If purulent discharge is present, obtain a wound swab for culture before antibiotics when feasible.
- Localized superficial infection: consider a topical antibiotic (e.g., mupirocin).
- Cellulitis: start systemic antibiotics according to local antimicrobial guidelines (e.g., oral cephalexin [Keflex®] for mild cellulitis).

→ Abscess, rapidly progressive infection, severe pain, or systemic illness → **urgent** Pediatric Gastroenterology/Surgery assessment.

2.5 Fungal Infection

Features

- Typically, bright-red, moist erythema with well-defined/scalloped margins and satellite papules or pustules.
- Risk factors: persistent moisture/leakage or recent antibiotics.

Management

- Keep the area clean and dry and address underlying moisture/leakage.
- Apply a topical antifungal (e.g., nystatin or clotrimazole).
- If not improving → reassess the diagnosis and consider microbiological testing/specialist assessment.

2.6 Peristomal Ulceration

Assess

- Assess for pressure/friction from inappropriate tube fit:
 - Low-profile balloon G-tube: ensure appropriate tube length and balloon volume; the button should sit comfortably without excessive pressure.
 - PEG tube: ensure the external fixation plate is not excessively tight.
- Look for other contributing factors, including persistent leakage/moisture or infection.

Management

- Correct the underlying cause, including pressure/friction, leakage/moisture, or infection.
- Gently cleanse the area and keep it dry.
- Apply appropriate protective wound dressing; consider a silver-containing dressing for an exudative ulcer or when local infection is suspected.

→ Deep, enlarging, non-healing, significantly painful, or bleeding ulceration → Pediatric Gastroenterology/Surgery.

2.7 G-Tube–Related Bleeding

Assess

- Determine whether bleeding is peristomal or coming from within the G-tube.
 - **Peristomal bleeding:** look for granulation tissue, local trauma/friction, skin breakdown, or infection.
 - **Blood within the G-tube:** consider gastric mucosal injury/ulceration, tube-related trauma, or another source of upper GI bleeding.

Management

- **Minor peristomal bleeding:** apply gentle direct pressure and treat the underlying local cause.
- **Significant peristomal bleeding:** apply firm direct pressure and obtain urgent Pediatric Gastroenterology/Surgery assessment.
- **Any blood within the G-tube:** stop using the G-tube and obtain urgent Pediatric Gastroenterology/Surgery assessment.

Significant ongoing bleeding or hemodynamic instability: initiate resuscitation/emergency management and obtain immediate specialist assessment.

3 References

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