

**Enteral Nutrition: Percutaneous Endoscopic Gastrostomy (PEG) in Older People with  
Dysphagia**

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## Percutaneous Endoscopic Gastrostomy (PEG) in Older People with Dysphagia

## Introduction:

Percutaneous Endoscopic Gastrostomy (PEG) is a method that is used to provide nutrition to the patients who have impaired swallowing or unable to swallow food due to dysphagia. Dysphagia is one of the common problems that is found in the elderly population. Evidence demonstrates that approximately about 40 percent of the people who are over the age of 60 years, experience dysphagia up to some extent. PEG is a minimally invasive procedure where enteral nutrition is delivered via a feeding tube from the abdominal wall and into the stomach. It provides support for patients with long-term enteral feeding, and advantages over parenteral nutrition. In this paper, we will present a patient's diagnosis, past medical history, assessments, and laboratory results relevant to patient's condition, explore the potential risks and complications related to PEG feeding, and the best nursing practice based on evidence supported in the research literature.

## Assessment, History and Laboratory Results:

RT, a 76-year-old, male patient who came from long-term care cerebral palsy center was admitted for the malfunction of enterostomy. He sustained aspiration pneumonia with clogged PEG. He has past medical history of cerebral palsy, spastic quadriplegia, dysphagia, hypoxia, AKI, anemia, hyperlipidemia, and seizure disorder. He is not alert nor oriented, and non-verbal. Vital signs were: T 100.8°F, PR 97, RR 22, BP 160/38, and SpO<sub>2</sub> 91% on high flow 50% nasal cannula. He has diminished breath lung sounds in all lung fields, heart sounds, RR sinus tachycardia, S1 and S2 present with no murmur. IV access on right antecubital #20, left and right upper arms #20. His bowel sounds were normoactive, all four quadrants, on PEG feed - Jevity at

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35 ml/hr. His last bowel movement was today afternoon (02/14), incontinent, is on external catheter with urinary output of 20 ml/hr. Skin: sacral pressure injury, stage 2 with allevyn dressing. Musculoskeletal: spastic quadriplegia, and contracture of lower extremities with Braden scale score of 10. The post-op diagnosis for this patient was adult failure to thrive. His relevant laboratory results from 2/14 are: RBC 3.01, Hemoglobin 8.9, hematocrit 26.9, platelet 95, Na 151, K 4.1, Ca 8.1, Albumin 1.7, Cl 119, CO2 22, Glucose serum 165, Bun 33, Crt 1.9, bilirubin 0.2, eGFR 66, AST 54, ALT 59. The laboratory results show that patient is not responding to the treatment very well. For low serum blood levels, the patient was given blood transfusion of 2-unit packs of PRBC on 02/12 (Hgb/Hcrt 9.5/29.2). However, blood serum levels have been depreciating since then. High BUN and creatinine levels are indicative of his existing acute kidney injury. High levels of AST and Alt demonstrates some type of liver damage. All of the above information is evident of the severity of patient's worsening conditions and the failure to thrive.

**Evidence Based Nursing Interventions, Care and Management:**

A cohort study compared the long-term outcomes between PEG and TPN which concluded that PEG was associated with a significantly longer survival time, a higher incidence of severe pneumonia, and a lower incidence of sepsis compared to TPN (Masaki & Kawamoto, 2019). Higher incidence of pneumonia via PEG was an expected and clinically plausible result because it poses a risk of gastroesophageal reflux and consequent aspiration pneumonia owing to the underlying pharyngeal and laryngeal dysfunction of the patients who require feeding through this modality (Masaki & Kawamoto, 2019). This information helps us to understand our patient RT's diagnosis of aspiration pneumonia related to the PEG. Even though, RT has dysphagia, and

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failure to thrive but PEG has aided in his survival for longer period by meeting his nutritional demands.

Complications of PEG tube insertion includes infection, swelling, bleeding, leakage, peritonitis, and blockage. These complications can be prevented with meticulous nursing care and management (Catangui et al., 2014). Peristomal site infection can occur if the stoma is not clean or gets contaminated. Patients who have PEG tube placed are more susceptible to infection due to age, compromised nutritional intake, weakened immunity or underlying disease. Nurses should assess for signs of infection such as increased erythema, tenderness, induration and purulent discharge (Boeykens et al., 2022). Another important nursing management for PEG is to maintain the tube patency. The greatest reason for blocked or clogged tubes is insufficient flushing (Anderson, 2019). Our patient, RT acquired aspiration pneumonia due to clogged tube. In order to prevent this problem, evidence-based-practice shows that nurses should use following methods: replace the tube feeding set every 24 hours, flushing the tube with at least 30 ml of pure water every 4 hours for patients that are on continuous tube feeding, before and after intermittent feedings and after checking gastric residuals, use sterile water in immunocompromised or critically ill patients (Boeykens et al., 2022). For adults, at least 30 ml of water should be flushed before and after the administration of the medication to clear the tube (Anderson, 2019). Manage by first assessing the tube for any kinks or compression in any way. If clogged, try to unclog using a lukewarm water-filled syringe (20 ml) using back-and-forth motion for about five minutes. Do not use cranberry juice or sodas instead consider the use of commercial unclogging devices like enzyme cocktails, a brush, or corrugated plastic rod. Finally,

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replace the tube if occlusion is caused due to fungal infection or previous methods have been unsuccessful (Boeykens et al., 2022).

The nurse should monitor the patient's vital signs, intake and output, and bowel movements to assess the response of the patient to the PEG feeding. The patient should be positioned upright during feeding and for at least 30 minutes after feeding to reduce the risk of aspiration. When performing oral care, if there is feeding contents present in mouth, it is due to reflux and that increases aspiration risk. Thus, to prevent aspiration, keep the head of the bed elevated at 30 degrees or higher during the hospitalization (Houston & Fuldauer, 2023). Problems such as infection and skin breakdown can be prevented by monitoring for signs of infection, skin breakdown every four hours. Collaborative team work with a dietitian ensures that the patient achieves adequate nutrition and hydration via PEG tube, with regular assessments to monitor weight, electrolyte balance, and nutritional status. Most patients need supplementary free-water flushes to maintain adequate hydration, approximately 30 ml/kg of water per day needs to be given via flushes or IV hydration therapy (Houston & Fuldauer, 2023). After the initial placement of the tube is confirmed, it may later become dislodged fully or partially which leads to other problems such as bleeding, tracheal or parenchymal or GI tract perforation. In order to prevent dislodgement, it is essential that nurses check the integrity of the tube at the start of each shift. Verbal patients may present with complains of pain while non-verbal patients like RT may respond with changes in the vital signs such as increased blood pressure, or increased heart rate, increased agitation, and restlessness (Houston & Fuldauer, 2023).

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PEG feed has been shown to be effective in improving nutritional status, reducing complications, and improving quality of life in older people with problem of dysphagia. It aids in overall improvement of the patient's health, nutritional outcomes, including increased weight, albumin levels, and reduced mortality rates. With enteral feedings, it is important for nurses to monitor for feeding tolerance. Although evidence depicts that PEG feed aids in increase of weight, in RT's condition, he did not gain any weight because he could not tolerate the required feed amount. He was not tolerating the feeding as evidenced by emesis of feed via mouth. Thus, the physician ordered to decrease the feeding rate to 20 ml/hr. The patient remained malnourished with BMI 14.4, weight 89 lbs, and height 5 feet 6 inches.

### Conclusion:

PEG feed is a safe and effective treatment option for older adults with dysphagia who are unable to meet their nutritional needs through oral intake. Although the procedure has been shown to improve nutritional status, reduce complications, and improve quality of life, it is vital that the nurses recognize the potential risks and ways to mitigate them. Further research is needed to better understand the long-term outcomes associated with PEG feed in older adults with dysphagia. However, implementing the evidence-based-practice along with multidisciplinary approach to patient care have proven to give better outcome by preventing risks and complications of PEG, and improvement in overall health and quality of life of the patients.

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