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Buried bumper syndrome, a rare and severe complication of percutaneous endoscopic gastrostomy: importance of early diagnosis in post-stroke patients

Abstract

Introduction: Percutaneous Endoscopic Gastrostomy (PEG) is considered a low-risk procedure; however, side effects may happen, the majority being of mild severity. Among the severe complications, few cases entitled "Buried bumper syndrome" (BBS) have been described. BBS corresponds to the migration of the internal fixation along the stoma tract, becoming lodged between the external wall of the stomach and the skin, which can be associated with local infection, peritonitis, and/or necrotizing fasciitis.

Case description: On 06/03/2021 at 29 years old male patient, with no relevant medical history is admitted to the São João Hospital with an extensive midbrain and brainstem hemorrhagic lesion, shown on CT scan. The patient lost his oral route and ability to communicate. Due to severe dysphagia, a PEG was placed without immediate complications. 3 days later, the nursing team reported peri-stomal food losses and local inflammation, with the patient unable to verbalize any complaint. Although there was an adjustment of the PEG by the gastroenterologist, these reports recur for the next week, being detected by the medical team after a routine full body evaluation of the patient. After a new evaluation, a CT was performed, reporting "PEG, whose balloon is located between the median abdominal wall and the anterior surface of the left hepatic lobe", compatible with the complication described as "buried bumper syndrome".

Discussion: The present case emphasizes the importance of correctly identifying the complications after undergoing PEG, as well as the risk factors and consequences associated with this syndrome, namely in patients with post-stroke status, whose communication is often compromised, and special attention must be given.

Keywords: gastrostomy, CT scan, dysphagia, left hepatic lobe, buried bumper syndrome

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Abbreviations: PEG, percutaneous endoscopic gastrostomy; BBS, buried bumper syndrome; CT, computer tomography

Introduction

Dysphagia is reported as one of the most common conditions after a stroke, being associated with an incidence ranging between 37 and 78% depending on the assessment method; lower incidence was detected using an initial screening test (37–43%) compared to clinical assessments (30–55%) and videofluoroscopy (VFS; 64–78%).[1]

These numbers pose a challenge in the management of the surviving victim, being imperative to find a way to provide the adequate nutritional intake needed to prevent severe protein catabolism, without the imminent risk of complications resulting from the inefficacy of the oral route, namely aspiration. Aspiration Pneumonia is reported to affect nearly 14% of post-stroke patients associated with an increased risk of hospital mortality and so an early dysphagia screening test is important, being advised to be done prior to oral intake.[2–4]

When facing with inefficient oral route and risk of aspiration, a nasoenteric (nasogastric, nasoduodenal and nasojejunal) tube is initially considered, namely until further evaluation and the introduction of more secure long-term solutions, namely the use of Percutaneous Endoscopic Gastrostomy. Compared to PEG tubes, nasoenteric tubes result in more complications (irritation, ulceration, bleeding, esophageal reflux, and aspiration pneumonia), lower subjective comfort, and even lower feeding efficacy.[5]

Percutaneous Endoscopic Gastrostomy (PEG) is considered a low-risk procedure, where a gastrostomy is performed, and a tube is inserted with the assistance of endoscopy to confirm the correct communication between the outside and the stomach. However, relatively safe, side effects may happen, the majority being of mild severity like granuloma formation, leakage around the tube, blockage of the tube, nausea/abdominal distension, constipation and diarrhoea. These complications can generally be classified into three major categories: endoscopic technical difficulties, procedure-related complications and late complications associated with PEG tube use and wound care. Among the severe complications associated with PEG components, cases entitled "Buried bumper syndrome" (BBS) have been described. BBS corresponds to the migration of the internal fixation along the stoma tract, becoming lodged between the external wall of the stomach and the skin, which can be associated with local infection, peritonitis, and/or necrotizing fasciitis Figures 1&2.[5–8]

Clinical case description

On 06/04/2021 at 29years old male patient, with no relevant medical history is admitted to the São João Hospital, in Porto, with an extensive midbrain and brainstem haemorrhagic lesion, shown on a CT scan. The patient lost his oral route and ability to communicate. After the initial stabilization, the patient was transferred to a stroke care unit for continuous monitoring and assessed by the speech and language therapist, with the screening being done before the first oral intake. Due to severe dysphagia, a nasogastric tube was placed.

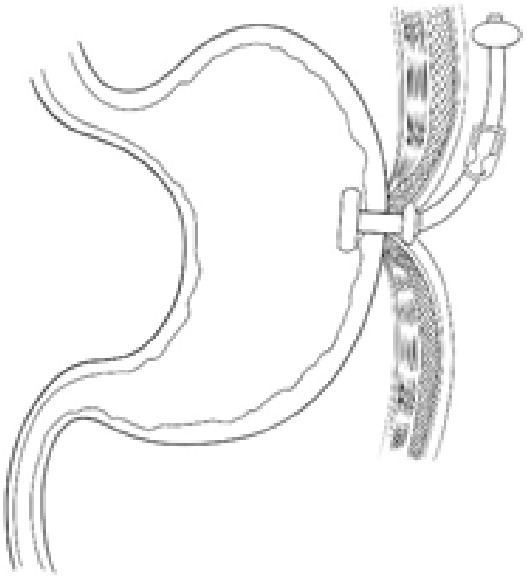

Figure 1 Normal PEG placement

Illustrations designed by beatriz custódio ribeiro

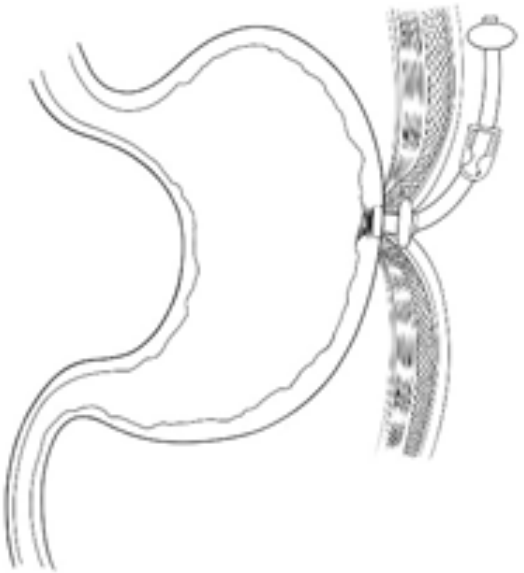

Figure 2 Migration of the bumper "BBS"

On 31/05/2021 and after 7weeks of the event, in order to secure a more reliable long-term solution, ta PEG was placed, without immediate complications. 3days later, on 3/06/2021, the nursing team reported peri-stomal food losses and local inflammation, with the patient unable to verbalize any complaint. Although there was an adjustment of the PEG by the gastroenterologist, these reports recur for the next two weeks. After a new evaluation by the medical team responsible for the case, a CT was performed on June 23, reporting: "PEG, whose balloon is located between the median abdominal wall and the anterior surface of the left hepatic lobe", compatible with the complication described as "buried bumper syndrome". The PEG was removed.

Due to the lack of improvement by the patient and the prediction of a long-term severe dysphasia, on August 30th, a new PEG was placed. The nursing team reported the same complications as before, 3 days after the procedure. A control CT was requested, which reported the exteriorization of the PEG, with its inner end located in the epigastric abdominal wall. The second PEG was removed, and the patient was left with a nasogastric tube.

Discussion

Although Percutaneous Endoscopic Gastrostomy device is considered a safe long-term alternative to the nasogastric tube, with very low mortality rate, associated with the procedure and device itself, a special attention should be given to the techniques used and efficiency of the insertion, being important to administer adequate pain relief in the first few days due to the inflation of the stomach during the procedure and inability by the patient to accurately report their complains.[5–8]

Conclusion

The present case emphasizes the importance of correctly identifying the complications after undergoing PEG, as well as the risk factors and consequences associated with this syndrome, namely in patients with post-stroke status, whose communication is often compromised.

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Conflicts of interest

The authors have no conflicts of interest to declare.

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