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Review Article

BURIED BUMPER SYNDROME: A RARE COMPLICATION OF PERCUTANEOUS ENDOSCOPIC GASTROSTOMY

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ABSTRACT

Percutaneous endoscopic gastrostomy (PEG), is thought to be a, relatively safe and effective procedure of providing nutrition to patients with neurologic deficits with irreversible swallowing problems or proximal esophageal pathology. Although considered as a safe method, PEG may be complicated by "buried bumper syndrome", in which the internal fixation device of PEG (bumper) migrates alongside the tract of the stoma outside the stomach, usually an infrequent and late complication with lethal results.

In this article, we report a case of BBS that presented in a 76-year-old female, five months after having a PEG tube placed.

Keywords: Percutaneous endoscopic gastrostomy; buried bumper syndrome; migration; necrotizing fasciitis.

CASE REPORT

A seventy six year old female patient, presented to our hospital for persistent swallowing disorder, four months after severe craniofacial injury.

The patient was well conscious, oriented and hemodynamically stable but was experiencing generalized weakness, fatigue and weight loss. Placement for PEG tube was made and a 22F MIC PEG system was placed without difficulty. Subsequently, the patient was discharged 10 days following the procedure without any complications.

Five months later, the patient experienced abdominal pain and presented to the emergency department of our hospital. The nurses noticed slow flow during PEG feeding.

On examination, the patient was febrile, erythematous circumferential induration with localized tenderness was observed around the PEG tube.

Blood samples were taken in the emergency department and the patient was admitted to the hospital under IV antibiotics and symptomatic treatment. Routine blood tests showed leukocytosis (14500/mcL) with unremarkable other laboratory studies. Subsequently, endoscopy was done, which showed a whitish linear ulcer with surrounding inflammation and no bolster was found (Fig. 2). Abdominal CT scan with IV and PO contrast was done, which showed the internal bolster medially at the sub-umbilical level in the subcutaneous fat in front of the rectus abdominis muscle without contrast extravasation (Fig. 2). No any fistula, hematoma or abscess was observed. Internal bolster was surgically extracted and jejunostomy tube was placed. The postoperative period was uneventful and the patient was discharged after 1 week post surgery.

Figure 1: Surrounding inflammation along the Whitish Linear Ulcer without internal bolster.

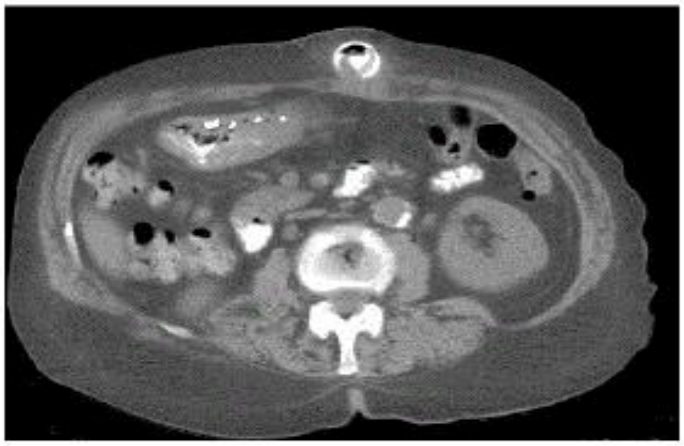

Figure 2: Anterior abdominal wall with internal bolster in the subcutaneous tissue.

DISCUSSION

Percutaneous endoscopic gastrostomy (PEG) is considered as a safe method of feeding patients with swallowing disabilities, requiring long term enteral nutrition. However, complication rate of this procedure varies from 0.4%-22.5% of cases with minor complications three times more than the major complications [1]. A full spectrum of consequences exists related to the PEG placement, with the most frequent one being wound infection up to 40% [2]. The incidence of serious complications requiring specific management is only 0.4%-4.4%, which includes insertion site leakage, necrotizing fasciitis of the anterior abdominal wall, bleeding, perforation or laceration, peritonitis [3].

Buried bumper syndrome (BBS) represents an infrequent but major complication of PEG, in which the internal fixation device (bolster) of the PEG tube migrates alongside the stoma tract out of the stomach, to the gastric wall and even to the abdominal wall. Its incidence ranges between 0.3%-2.4% of the adult patients with PEG [4].

Several risk factors like excessive traction of the tube, placement of multiple gauze pads between the external bumper and the skin, characteristics of PEG are associated with BBS [1]. Apart from it, ulceration and necrosis of the gastric mucosa at the bumper site are also favoured by gastric acid secretion [5].

Clinical presentation of BBS varies from mild abdominal discomfort or pain to abdominal wall cellulitis, fasciitis, abscess, peritonitis, bleeding and death [6].

The diagnosis is usually made by physical examination, showing a fixed PEG tube with a palpable internal bolster and a protruding external bolster [7]. Imaging examinations like CT scan, MRI or Ultrasound can be done to confirm the diagnosis and locate the exact position of the PEG tube [8]. However, upper GI

endoscopy is preferred as it can be used as diagnostic as well as therapeutic tools [5].

Removal of the PEG tube, along with antibiotic administration and wound care is the mainstream treatment [9]. The PEG tube can be removed externally with or without abdominal incision or internally using endoscopic measures, depending on its type [10]. In worse cases, surgical interventions are indicated. A replacement tube can be inserted through same tract, if the original site is salvageable, if not a new location need to be identified for the new tube [1].

Preventive measures like regular wound cleaning, allowing 1 to 2 cm between the external bumper and the skin, placing the gauze pads over and not under the external bumper should be adhered and recommended to the patients and the caregiver to avoid the risks of complication [11].

CONCLUSION

The endoscopists must be aware of the spectrum of complication related to placement of PEG tube. Attention at the time of placement and careful follow-up is utmost necessary to prevent the development of more serious complications. Urgent endocopy and initiation of multiple therapeutic strategies should be effective in preserving the PEG site, at the onset of the first sign of an adverse event or injury to the PEG tract.

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