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Non-Necrotizing Abdominal Wall Fasciitis: A Rare Complication of Percutaneous Endoscopic Gastrostomy (PEG) and Its Successful Management

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Abstract

Background: We report a case of non-necrotizing abdominal wall fasciitis as a post-operative complication of percutaneous endoscopic gastrostomy insertion.

Main Observations: A 57 year old man undergoing chemo-radiotherapy for head and neck cancer required a PEG tube insertion. The procedure was uneventful but he developed this complication associated with tube displacement into the anterior abdominal wall. The patient required multiple theatre visits for wound debridement, stayed in the intensive care unit but made a good recovery.

Conclusion: All clinicians need to be aware of possible gastrostomy tube displacement, development of this life-threatening complication and be familiar with the appropriate management options.

Keywords: Head and neck cancer; Chemoradiotherapy; PEG; Fasciitis; Postoperative complications

Introduction

Percutaneous Endoscopic Gastrostomy (PEG) is a commonly performed procedure in patients with upper aerodigestive tract malignancies as well as in a range of other swallowing disorders. This is generally regarded as a safe intervention to enable long-term enteral feeding. Procedure related mortality is reported at around 1% [1,2] and incidence of life threatening complications is low. The procedure is simple and quick to complete [3].

Necrotizing fasciitis is one of the most severe complications of abdominal surgery but is rare in association with PEG tube insertion [4,5]. Certain factors such as external pressure on the PEG tube may predispose to this major complication but the aetiology is complex, with both aerobic and anaerobic microorganisms commonly implicated [6]. Use of prophylactic antibiotics has been found to reduce the risk of complications from PEG insertion [7], but treatment of necrotizing fasciitis also involves surgical debridement [6]. The aim of our report is to present a unique case of non-necrotizing fasciitis of the abdominal wall as a post-operative complication of PEG insertion in our patient. We also describe the successful management of this potentially life threatening condition in our patient.

Case Report

A 57-year-old Caucasian man with a past history of alcohol excess, hypertension and hypercholesterolemia presented to us with right sided throat discomfort. Flexible nasendoscopy revealed an ulcerating tumour extending from right vallecula to aryepiglottic fold. This lesion was confirmed to be a squamous cell carcinoma on histopathology and staged as T4 N1M0 on radiology. He underwent transoral de-bulking of the tumour with temporary tracheostomy. The post-operative recovery was smooth and he was discharged home. Post-operatively he started a course of chemoradiotherapy which was interrupted due to acute airway compromise necessitating emergency re-insertion of his tracheostomy tube. During his admission, a PEG tube was inserted for feeding purposes. Ten days after the PEG tube insertion, the patient complained about abdominal pain and became septic. His haematological screen showed Haemoglobin=120 gram per litre (range 140-180), White cell count = 17.1 (range 4.0-10.0), and Neutrophil count= 4.7 (range 1.5-7.0). The biochemical screen was normal. Clinically, an intra-abdominal leak was suspected. He was investigated with a Computed Tomographic (CT) scan of his abdomen and pelvis using contrast intravenously as well

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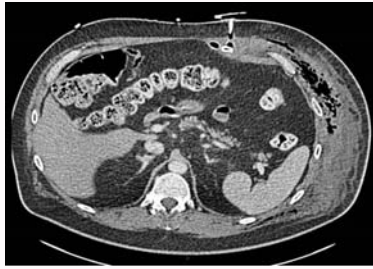


Figure 1: The tip of the gastrostomy tube could be seen lying out with the stomach within the tract.

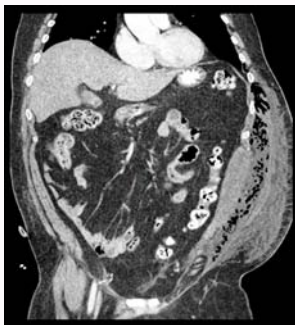


Figure 2: Extra-peritoneal – abdominal wall collection.



Figure 3: Wound management - Foley's catheter placed down the PEG track.

as via the gastrostomy tube. The scan revealed a well-formed tract between the percutaneous opening and the stomach. However, the tip of the gastrostomy tube was lying out with the stomach within the tract (Figure 1). The contrast introduced *via* the tube went into the stomach without any evidence of leak. Also noted was a left sided gas and fluid-containing, extra-peritoneal, abdominal wall collection measuring 18x20 cm in axial dimensions and extending from the level of the gastrostomy down to the left inguinal region (Figure 2). The patient underwent surgical exploration of the abdominal wall which confirmed the PEG tube to have become displaced from the stomach into the anterior abdominal wall. The abdominal wall was debrided and pus was found in the deeper plane under the oedematous subcutaneous tissue. However, no frank necrosis was noticed. Foley's catheter was placed down the PEG track. The patient required multiple theatre visits for wound management (Figure 3 & 4) and each time viable abdominal wall tissue was noted. The patient stayed in the intensive care unit for 2 weeks requiring inotropic support. The debrided abdominal wall tissue was sent for microbiological assessment: the microscopy showed no pus cells but gram positive cocci were seen, and on culturing profuse growth of *Staphylococcus aureus* was noted. The patient was managed in a multidisciplinary team setting and made a steady progress. A new PEG was re-inserted



Figure 4: Wound management – The PEG was reinserted and used for feeding.

after 4 weeks and successfully used for feeding. The patient completed his chemo-radiotherapy and was discharged home.

Discussion

Percutaneous Endoscopic Gastrostomy insertion is a common intervention. The procedure is associated with few potentially life threatening complications. Major complications following PEG tube insertion have been found to be no higher in head and neck cancer patients than in patient groups of varied pathologies [8]. Malignancies of the upper aerodigestive tract can frequently lead to dysphagia impairing nutritional intake throughout management of the cancer. Since endoscopic examination is often otherwise required in such management, PEG is convenient and performed in preference to other methods such as surgical or radiological gastrostomy [7]. Furthermore, studies suggest that PEG is associated with fewer complications and lower mortality risk than these other techniques [7,8].

Studies have found prophylactic antibiotics to be effective in reducing the risk of wound infection following PEG tube insertion, with penicillin-based prophylaxis being preferable [9]. Treatment of infective fasciitis must include immediate surgical debridement which may need to be repeated [10]. This case was associated with dislodgement of the PEG tube, the risk of which should be minimised through the use of “bumpers” during insertion to ensure stable adherence to the stomach wall [8]. Co-morbidities and the timing of tube insertion are also important considerations for the prevention of complications [8]. While displacement of the tube is a risk for PEG dependant patients, this generally results in either peritonitis or indeed complete removal of the tube. This case highlights the rare but important risk for partial displacement of the tube into the layers of the anterior abdominal wall with serious consequences.

Conclusions

The head and neck cancer patients requiring help with feeding need to be fully assessed and appropriately referred for PEG. The patients need to be counselled and an informed consent should be taken. After the procedure, patients should be closely monitored to identify PEG related complications at an early stage. Once suspected, these patients need to be reviewed by the surgical team for timely intervention to prevent any fatal outcome. While uncommon, non-necrotizing abdominal wall fasciitis developing as a complication of PEG tube insertion is potentially life-threatening. A high index of suspicion and adequate knowledge of its management is vital.

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