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Case Study Open Access

# Metastatic Implantation of Esophageal Cancer at PEG Tube Site: Case Report and Review of Literature

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## Abstract

Percutaneous Endoscopic Gastrostomy (PEG) is a common procedure done in patients with Carcinoma Esophagus whose nutritional status is compromised due to the primary disease and treatment related side effects. A rare and serious complication of this procedure is the metastatic spread of tumour from the esophagus to the gastrostomy site. We discuss a case of 70-year-old lady with Stage IVA (T4bN0M0) Squamous cell carcinoma esophagus who underwent PEG insertion prior to radical radiation treatment. 9 months later, she presented with a painful, ulceroproliferative growth at stomal site. It was histopathologically proven to be a metastasis from the primary. Palliative radiation with a dose of 30 Gy in 10 fractions by 3D conformal technique was delivered and good clinical response was achieved. However preventive methods such as surgical gastrostomy tube insertion procedures and delaying the timing of insertion of PEG tube to after commencing definitive treatment might help to decrease the risk. Positron Emission Tomography-Computed Tomography (PET/CT) scan is an effective tool for early detection of PEG site metastasis.

**Keywords:** PEG site metastasis; Carcinoma esophagus; Tumour implantation

## Introduction

Nutritional support is of prime importance in carcinoma esophagus and percutaneous endoscopic gastrostomy (PEG) placement is a recommended option for successful completion of definitive treatment. However, it is associated with a small risk of developing metastasis at the stomal site. We present such a case and discuss early detection, treatment options and possible preventive measures to avert this risk.

## Case Report

A 70-year-old lady with no known comorbidities was diagnosed to have Stage IVA squamous cell carcinoma lower third esophagus in September 2017. She had no relevant family and psychosocial history. She was planned for radical radiation and prior to starting treatment, PEG placement was done by pull string technique to maintain nutritional status. She received a dose of 5400 cGy/30F to lower third esophagus and draining lymph node stations with Intensity Modulated Radiotherapy technique (IMRT). First clinical assessment done at 6 weeks post radiation revealed symptomatic improvement. In February 2018 (3 months post radiation), Oesophago-gastroduodenoscopy (OGD) showed stricture with ulceration at 34 cm, stomach showed PEG tube bumber *in situ*, otherwise unremarkable. Biopsy from the stricture was reported as squamous cell carcinoma, moderately differentiated. A whole body Positron Emission Tomography-Computed Tomography (PET/CT) scan done revealed 18F-fluorodeoxyglucose (FDG) avid active residual primary lower esophagus extending upto the gastro-esophageal (GE) junction. There was also an abnormal increased FDG uptake with a maximum Standardized Uptake Value (SUV) of 8 at the PEG site on the anterior abdominal wall suggestive of inflammation (Figure 1).

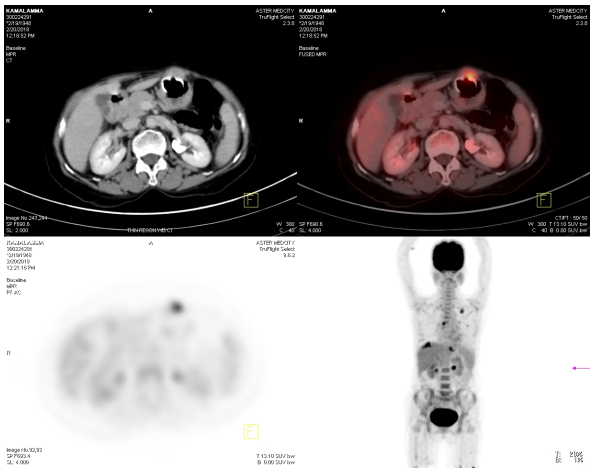

**Figure 1:** Whole body PET CT scan showing abnormal FDG uptake at PEG site suggestive of inflammation.

In view of advanced age and residual disease, she was offered palliative chemotherapy. Due to poor tolerance, chemotherapy was discontinued after 2 months. She underwent PEG removal in view of discomfort at the stomal site.

In June 2018, she came with complaints of painful ulcero-proliferative growth at PEG site with mild discharge. There was a friable ulcerative growth at gastrostomy site (Figure 2). A whole body PET/CT scan showed a metabolically active residual primary in the lower esophagus extending to the GE junction, a 5.6 x 2.9 x 3.5 cm lesion with maximum SUV 29.5 at the anterior wall of stomach with soft tissue deposit in the anterior abdominal wall at the PEG site (Figure 3). Biopsy of the growth was reported as moderately differentiated squamous cell carcinoma identical to the primary histology (Figure 4). As she was symptomatic for the PEG site recurrence, palliative radiation therapy of 3000 cGy in 10 fractions by 3D conformal technique was delivered to the local site. Clinical assessment one month after the palliative radiation showed complete resolution of the exophytic growth on the abdominal wall with complete relief of pain and discharge from the PEG site (Figure 5). CT imaging showed decrease in the size of soft tissue density lesion in the epigastriumto a size of 3.5 x 2.6 x 1.8 cm. She is currently asymptomatic and on regular follow up.

**Figure 2:** Metastatic implantation at PEG site 2 x 2.5 cm friable ulceroproliferative growth.

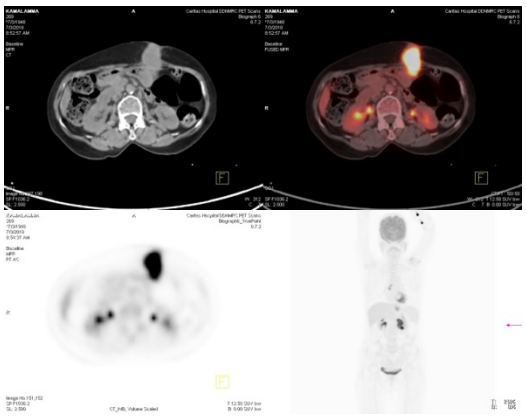

**Figure 3:** Whole body PET CT scan showing metabolically active disease at the anterior wall of stomach and soft tissue deposit in the anterior abdominal wall at the PEG site.

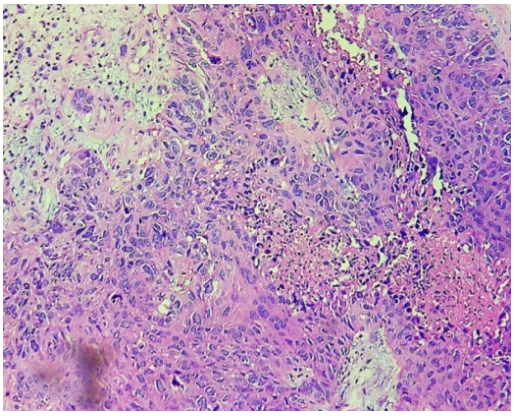

**Figure 4:** Showing infiltrating squamous cell carcinoma identical to the primary histology (20X H&E stain)

**Figure 5:** Resolving phase of the exophytic growth after palliative radiation.

## Discussion

This case shares our institution's first experience with carcinoma esophagus metastasizing to the gastrostomy site. Though PEG is a universally accepted means of enteral feeding, stomal metastasis from primary cancer is an alarming concern [1]. PEG site must be evaluated at regular intervals with careful attention to the patient's complaints and unusual skin changes at the stomal site. When needed, a biopsy must be done to distinguish a tumour from an exophytic granulation tissue. PET-CT imaging might help to detect an early asymptomatic stomal metastasis [2]. Synchronous distant metastasis and coexisting disease at the primary site can also be assessed. De Monès et al. [3] pointed out that even a hypermetabolic uptake seen in PET-CT images near or around the gastrostomy site must be carefully monitored for metastasis. Retrospectively analyzing, the increased uptake noted in the initial PET/CT scan of our patient must have been an indication of early recurrence which was considered as inflammatory change.

The prognosis and outcome of this rare occurrence is poor. A study by Fonseca et al. [4] showed a good two year survival following bloc resection of PEG site recurrence including a total gastrectomy. Even subtotal gastrectomy with removal of a part of abdominal wall has also

been tried in earlier cases. Though surgical resection has shown good curative result, it can only be considered when there is complete regression of the primary with no evidence of metastasis elsewhere. Palliative radiation to the PEG site metastasis can be an effective tool in patients with residual primary lesion as in our patient.

Risk factors studied by Cappel et al. [5] were poorly or moderately differentiated squamous cell carcinoma histology, advanced stage at presentation, pullstring technique of PEG placement, untreated primary cancer before insertionand time more than and equal to 3 months after insertion. This case had all the above factors. To prevent direct implantation, contact of gastrostomy tube with the tumour must be avoided by using a sheath or overtube. Though prophylactic PEG (insertion before definitive treatment) decreases malnourishment and weight loss, it is not favoured, as the risk of tumor seeding seems to be higher in cases with active tumor load [6]. Deferring PEG insertion till the initiation of radiation or chemotherapy therefore will help to decrease this risk. Despite this potential risk, we should not defer PEG placement in nutritionally compromised cancer patients but instead explain and discuss this risk with the patient and relatives in their treatment consent.

## Conflicts of Interest

None.

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