ESOPHAGEAL STENT FRACTURE, AN UNCOMMON COMPLICATION: A CASE REPORT

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ABSTRACT

Esophageal stent placement is widely used for palliative treatment of esophageal carcinoma, gastric cardia cancers and in conditions causing extrinsic compression on esophagus. It can also be used in benign conditions of esophagus causing esophageal narrowing and dysphagia. As esophageal carcinoma is diagnosed in later stage and cure is unlikely as the patients already have locoregional and metastatic disease, therefore esophageal stent placement is an excellent option for improving quality of patients life. Esophageal stent is associated with number of complications like chest pain, bleeding, stent migration, stent occlusion, tumor ingrowth, perforation and fistula formation. A rare complication which has been infrequently reported in literature is esophageal stent fracture. Different management strategies have been attempted for retrieval of fracture fragment of the stent. Some opted for surgical approach and interventional radiology. Common method so far opted is endoscopic retrieval of the fractured segment which is commonly seen in stomach. We report a 65 year old lady with known Ca esophagus and stent placement 2 years back which resulted in improvement of her caloric intake.. She had also underwent chemotherapy. She presented with lower abdominal pain and was advised CECT abdomen by a gastroenterologist. Her CT revealed fractured piece (4.4 cm) of stent in ileum.

Key words: Esophagus, stent, stent fracture, carcinoma

Introduction

As esophageal carcinoma is an aggressive cancer it is usually seen in advanced stage at the time of diagnosis with poor prognosis and low 5 year survival rate. Majority of the patients (more than 50%) at the time of diagnosis are not suitable candidates for surgery whether diagnosed with squamous or adenocarcinoma. Therefore esophageal stent placement as a palliative treatment is widely used. Other treatment options can be brachytherapy and thermal ablative treatment.[1] Esophageal stents are associated with early and delayed complications. Most common complication is stent migration with incidence of 7% - 75%. A rare complication of esophageal self expandable metallic stent (SEMS) is stent fracture. The reintervention rate is as high as 50%. Approximately 0.5% - 2% patients die as direct result of expandable stent placement. Esophageal stents in past were made of rigid polyvinyl plastic prostheses. Currently SEMS are used which are associated with fewer complications.[2] Early complications can be seen immediately or within 2-4 wks. Whereas delayed complications which are more common are seen after 2-4 wks. These complications include esophageal fistulae, tumor ingrowth, stent occlusion, stent migration, recurrence of strictures.[3] Previously patients had short survival after diagnosis, long-term survival is now beginning to become more common and complications though uncommon but are frequently diag-

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nosed. Its important to see long-term performance and stent integrity through different investigations. The gastric acid has been reported to be the precipitating factor in the fracture of stent.[4] We report a case of a spontaneously fractured esophageal stent which is the first recorded instance in Balochistan, Pakistan.

Case

A 65 years old female patient resident of Pishin, Quetta was diagnosed as a case of esophageal carcinoma (squamous cell carcinoma) two years back. As she was diagnosed on late stage she didn't undergo surgery and was kept on palliative treatment. An esophageal stent was placed endoscopically and she subsequently underwent two cycles of chemotherapy in CENAR hospital to relieve dysphagia. Her current lab investigations were normal including renal function and liver function tests. Her complete blood count showed reduced hemoglobin count of 8.5 mg/dl with slightly raised white blood count of 12000/dl. She presented to Gynaecologist with lower abdominal pain and discomfort. She was menopausal since last 18 years. Her ultrasound pelvis was unremarkable and further she was referred to her primary treating Gastroenterologist who advised a CECT abdomen with oral contrast. Her CT scan showed circumferential thickening of visualized distal thoracic esophagus measuring 14.5 mm (Fig. 1). Esophageal stent was seen in place in lower thoracic esophagus extending into the distal gastric body (Fig. 2a). Esophageal thickening was extending into gastroesophageal junction and posterior wall of gastric fundus. Distal esophageal mass was abutting and partially encasing the descending thoracic aorta and making an interface of more than 90 degrees. Along its anterior aspect it was abutting the left atrium without any infiltration. Gastric folds were also minimally thickened measuring 3.5 mm. Evidence of tubular structure measuring 4.4 cm in length was noted in ileal loop (Fig. 2b). Minimal focal dilatation of ileal loop was also noted along with minimal wall thickening (4 mm) and few air foci (Fig. 2c). This tubular structure was giving the same configuration to the esophageal stent raising suspicion of stent fracture and distal migration of fracture fragment of the stent. Liver was enlarged measuring 17.8 mm in craniocaudal dimension. Mild splenomegaly was also noted with splenic index of 520. Minimal pericardial effusion was also noted. Few enlarged nodes were noted along the celiac axis. Septal thickening was noted in lower lung lobes giving a hexagonal configuration and suspicion of lymphangitis carcinomatosis was given. Rest of the abdominal scan including kidneys, gall bladder and pelvic organs were normal. After CT scan report the gastroenterologist planned an endoscopy but it was an unsuccessful attempt. Later patient denied any further treatment and investigations. As the fracture stent fragment was not causing any serious problem in patient therefore no attempt was made to remove the distal fragment from the ileum and patient was discharged.

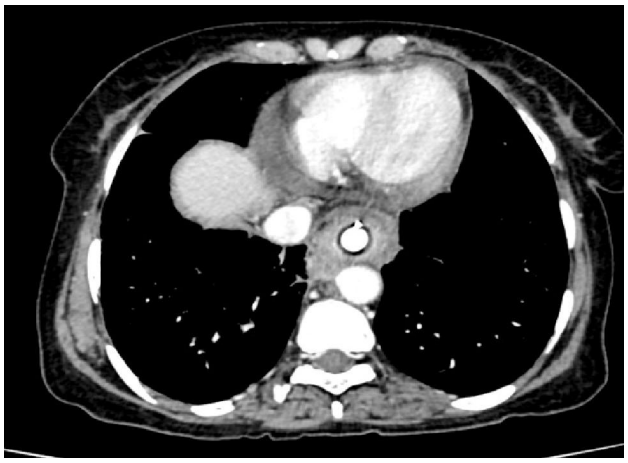

Figure 1: CECT with oral contrast showing esophageal stent with contrast filling its lumen. circumferential thickening is noted along the distal esophagus which is abutting the descending thoracic aorta and IVC. Mild pericardial effusion is also noted.

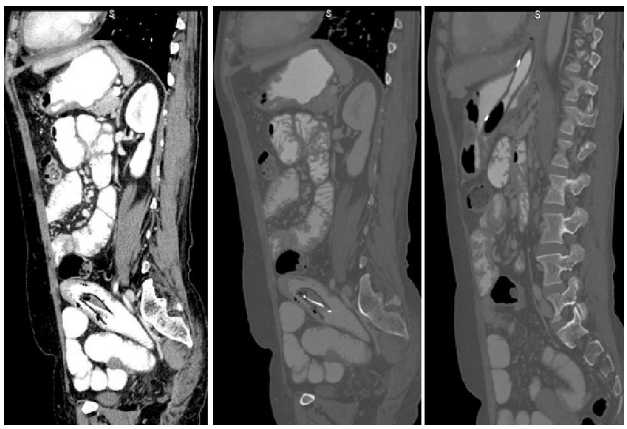

Figure 2 a,b,c: Sagital reconstructed image of CECT showing bone and soft tissue windows. esophageal stent extending to the gastric body **(2a).** A 4.4 cm tubular structure with few air bubbles along its walls is noted in ileal loop along with minimal mural thickening **(2b & c).**

Discussion

Few cases of complete esophageal stent fracture has been reported in literature. The timings from placement and fracture of stent is variable anywhere from 8 to 40 wk. In our case time interval between esophageal stent placement and stent fracture was two years. Different approach is carried out in different cases for management of broken stent fragment. In some cases, the fractured stent piece were removed endoscopically and a new stent was placed. In few surgical approach was carried out.[5] In our case an unsuccessful endoscopy was done after which patient denied further treatment and stent fracture piece was left without any intervention. Patient had been followed on phone however no complications relating to stent fracture has been stated.

SEMS have increasingly been used for palliation of malignant dysphagia and are currently the most common means of palliation. Stents usually after fracture migrate to stomach from which they are retrieved through endoscope. In case it travel to ileum it caused obstruction.[5]

There has been fractures of two esophageal SEMS occurring in the same patient according to Anand Venkata Reddy et al Fracture of the first stent resulted in intestinal obstruction.[6] In our patient the fracture stent was causing only minimal focal dilatation of ileal loop without any obstruction.

Another study stated an esophageal stent fracture which was seen by endoscope. The proximal fragment was embedded in the upper esophagus and the distal migrated fragment wedged in the hiatal hernia.[7]

Another case of 61 years old male with esophageal stent fracture presented with dysphagia, however was successfully treated by interventional radiologist and another stent was placed.[8] There has been a reported case of migration of esophageal stent piece into the stomach and formation of.[9]

According to Ilker Turan et al placement of esophageal stent is also done in advanced lung carcinoma causing invasion of esophagus. In their case patient also developed complication of spontaneous stent fracture 8 months after esophageal SEMS placement.[10]

SEMS fracture is a dangerous and serious condition. It should be suspected in a patient who presents with recurrent dysphagia despite successful placement of an esophageal SEMS.[7] Our patient presented with lower abdominal pain and no complaints relating to dysphagia were seen.

The incidence of esophageal carcinoma vary, based on region with highest rates found in Asia and Africa. USA is relatively low incidence area. Our patient was an Asian.[11]

Therefore whenever an esophageal stent is placed these rare but important complications shall be considered so that there is prompt management and patient is saved from further problems.

Conflict of Interest: None

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