

Self Expanding Metallic Stent Placement as a Palliative Therapy for an Advanced Gastric Cancer Patient

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ABSTRACT

Patients with gastric cancer which infiltrates distal esophagus often complain of dysphagia. Stenting is currently the therapy of choice for malignant dysphagia. Self expanding metallic stent (SEMS) placement has become the standard stenting therapy.

We reported a case of 63 year old male patient with an advanced gastric adenocarcinoma which infiltrated distal esophagus who complained of dysphagia. The diagnosis was made based on esophago gastro duodenoscopy (EGD), histopathology study and contrast enhanced abdominal computed tomography (CT) scan. Patient underwent esophageal stenting successfully. This case report demonstrates SEMS placement as an effective palliation therapy in patient with an advanced gastric cancer which infiltrated distal esophagus.

Keywords: *gastric cancer, self expanding metallic stents, malignant dysphagia*

ABSTRAK

Pasien kanker lambung yang meluas ke esofagus distal seringkali mengeluh sulit menelan. Saat ini prosedur stenting merupakan terapi pilihan untuk disfagia yang disebabkan adanya keganasan saluran cerna. Self expanding metallic stent (SEMS) merupakan terapi stenting standar.

Dilaporkan pasien laki-laki 63 tahun dengan adenokarsinoma lambung stadium lanjut yang meluas ke esofagus distal. Pasien mengeluh sulit menelan. Diagnosis ditegakkan berdasarkan esofago gastro duodenoscopy (EGD), pemeriksaan histopatologi dan CT-scan abdomen dengan kontras. Pasien berhasil menjalani prosedur stenting esofagus. Laporan kasus ini memperlihatkan penggunaan SEMS sebagai terapi paliatif yang efektif pada pasien kanker lambung stadium lanjut yang meluas ke esofagus distal.

Kata kunci: *kanker lambung, self expanding metallic stent, disfagia maligna*

INTRODUCTION

One of the most prevalent malignancies in the world is gastric cancer. Worldwide, gastric cancer is the fourth most common cancer after lung, breast, and colorectal cancer.^{1,2} Gastric cancer, as any other cancer, affects patient's physical and emotional conditions. Physical problems are dysphagia, epigastric pain, weight loss, bloody vomit, melena, nausea, vomiting, indigestion, anorexia, and post prandial fullness.¹⁻⁴ From the

emotional aspect, patient is often depressed because of the complicated diagnostic and treatment problems and also the fear of death. Overall, the whole problems described above can impair the patient's quality of life.

The treatment for gastric cancer has evolved. Early gastric cancer can be cured by invasive methods and surgery. For advanced gastric cancer, the therapy is mainly palliative.¹⁻⁴ Stenting is currently the therapy of choice for the palliation of malignant dysphagia

caused by gastric cancer which extends to esophagus. Self expanding metallic stent (SEMS) placement has become the standard therapy which provides quick relief of dysphagia and further improves quality of life.

CASE ILLUSTRATION

A 63 year old male patient came to Cipto Mangunkusumo Hospital complained of difficulty in swallowing that has worsened since one week prior to admission. Since 4 months before admission, he often complained of epigastric pain. He was given medications in rural general hospital but had no improvement. Since 2 months before admission, he complained of difficulty in swallowing, nausea, vomiting, and decrease in appetite. He denied any bloody vomit. Sometimes he defecated black tarry stools. Epigastric pain persisted. Since 1 month before admission, he felt the passage of either solid or liquid food in upper digestive tract was obstructed. Since one week before admission, the difficulty of swallowing had worsened. Body weight decreased from 70 to 56 kg in 4 months. He was admitted to private hospital but there was no improvement. He denied any history of previous cancer or history of cancer in the family. He worked as a construction labour worker. He had a history of smoking 1 pack of cigarette per day for 40 years and seldom ate food with preservatives.

From the physical examination, patient looked moderately ill and fully alert. The vital signs were normal. Body weight at admission was 54 kg, and height was 170 cm. Body mass index was 18.7 kg/m². Performance status was Eastern Cooperative Oncology Group (ECOG) 1. Eye, ear, nose, throat, mouth, neck, lungs, cardiac, abdominal and extremities examination revealed no abnormalities except there was an enlargement of left supraclavicular lymph node with size 2 x 2 cm, hard consistency, fixed and no signs of inflammation.

The laboratory result on admission was hemoglobin (Hb) 9.7 g/dL, hematocrite (Ht) 30.7%, mean corpuscular volume (MCV) 83 fL, mean corpuscular hemoglobin (MCH) 29 pg, mean corpuscular hemoglobin concentration (MCHC) 31 g/dL, leukocyte 9,650/uL, thrombocyte 556,000/uL. Liver and kidney function was normal. A gastric cardia mass which infiltrated distal esophagus was found in EGD examination (Figure 1). After the mass biopsy was done, a nasogastric tube (NGT) was also placed per endoscopic to provide nutrition intake for the patient (Figure 2).

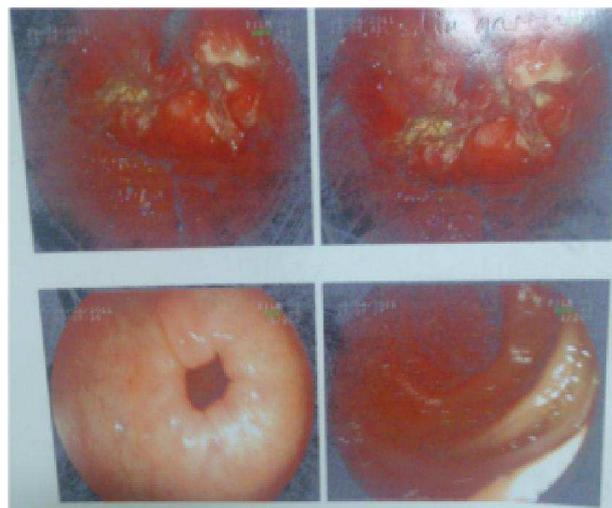


Figure 1. A gastric cardia mass which infiltrated distal esophagus



Figure 2. Per-endoscopic naso gastric tube placement

Pathology examination revealed intestinal type gastric adenocarcinoma and *Helicobacter pylori* (*H. pylori*) positive. The contrast enhanced abdominal CT scan revealed a mass in gastric cardia which infiltrated distal esophagus and perigastric fat, enlargement of paraaortic lymph node and multiple nodules in liver. Contrast enhanced thorax CT scan did not show any abnormalities.

He was diagnosed advanced gastric cancer which extended to distal esophagus and metastasized to the liver. Thus, the therapy of this patient was mainly palliative.

For the dysphagia relief, he underwent SEMS placement (Figure 3). Right after the placement of SEMS, dysphagia score from 3 increased to 0. He could eat liquid and solid diet normally without NGT. He refused chemotherapy and decided to go home.

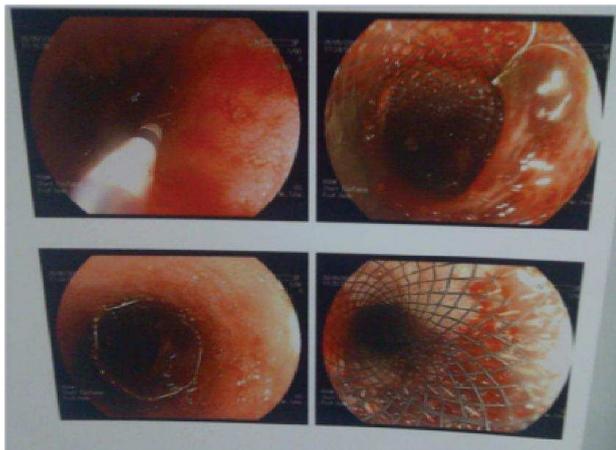


Figure 3. Placement of self expanding metallic stent in distal esophagus

Patient was advised to visit gastroenterology clinic of Cipto Mangunkusumo Hospital within one week after he was discharged home. On the first visit, he still felt chest discomfort but denied any bloody vomit, melena, or difficulty in breathing. He could still eat normally. He did not come regularly to gastroenterology clinic. Four months after the procedure, he was reported passed away at home.

DISCUSSION

Gastric cancer is still one of the most common malignancies. Data from American Cancer Society shows that in 2007, there were one million new cases.^{1,2} The incidence of gastric cancer was higher in Asian and South American countries than in the United States. This malignancy occurs mostly in elderly. Male have twice the risk of gastric cancer than female.^{1,2} Risk factors for gastric cancer are consumption of food with preservatives, *H. pylori* infections, and genetic predisposition.

This patient was diagnosed advanced stage gastric cancer. The overall data of the patient fitted with the theory described above. The patient was 63 years old, male, and Asian. Pathologic examination of the gastric tissue revealed the presence of *H. pylori*. These factors may contributed to the development of the gastric cancer in this patient

For palliative therapy, there are many options for gastric cancer that infiltrated distal esophagus. Those are laser ablation, photodynamic therapy and stenting. Dysphagia caused by malignant obstruction has the benefits from SEMS placement. The goal is to minimize the symptoms and promote oral intake of food, water and medications, seal fistulas or anastomotic leaks following surgical interventions, minimize hospital

stay, and ultimately to improve quality of life.⁵⁻¹³ This method also has low complication rate and potential long term relief.⁶

This patient underwent an EGD soon after the admission. Based on thorough examination in the ward and 7th American Joint Committee on Cancer Staging System, this patient's problem was an advanced gastric cancer that had metastasized to the liver.¹⁴⁻¹⁶ Patient mainly had swallowing difficulty. Based on clinical manifestations, this patient was a candidate for SEMS placement.

Before SEMS placement, every physician must perform pre-procedure evaluation. This includes evaluation of indications, contra-indications and the preparation of the stent. The common indications for the placement of SEMS are palliation of malignant dysphagia in patients with tumors of the esophagus and gastric cardia, extra esophageal tumors (such as lung cancer and malignant lymphadenopathy), tracheoesophageal fistulas (in advanced esophageal and lung cancer), esophageal perforation (usually iatrogenic from direct endoscopic trauma or following stricture dilatation), anastomotic tumor recurrence following surgery, and benign esophageal strictures refractory to balloon dilatation and not suitable for surgery.^{12,13,16-19}

The indication of SEMS placement for this patient was malignant dysphagia caused by an advanced gastric cancer which infiltrated distal esophagus. It was inoperable.

Currently, there are no absolute contra indications for SEMS placement. There are some relative contra indications, such as platelet count less than 50,000/mm³ and international normalized ratio (INR) over than 1.5, recent high dose of chemotherapy or radiotherapy (3-6 weeks) because of increased hemorrhage and perforation rates, severely ill patients, obstructive lesion of stomach due to peritoneal seeding, severe tracheal compression that would be worsened by esophageal stenting, and extremely high stenosis close to vocal cords.^{12,16,17}

There were no contraindications of SEMS placement in this patient. INR and platelet count were within normal limits. The patient also had not undergone any chemotherapy or radiotherapy. Patient was not severely ill. There was no peritoneal seeding clinically and radiologically. Patient did not have any complain of breathlessness. Based on pre-procedure evaluation, the patient was a perfect candidate for SEMS placement.

The choice of stent depends on many factors, such as tumor length and position, presence of fistula, potential

airway compromise, and personal preference of the individual inserting the stent. The diameter and length of the stent should be determined after measuring the length of the obstruction using endoscopy. The length of the stent chosen should be at least 3 to 4 cm longer than the obstruction to allow an adequate margin of stent on the side of obstruction.¹⁷ Placement of metallic stent for tumor in gastric cardia and distal esophagus is associated with specific problems because the distal part of the stent projects freely into the fundus of the stomach and cannot fix itself to the wall. Uncovered stents are preferred for tumors in the cardia because they are less likely to migrate. Covered stents are advocated for tumors with high risk of fistula formation or when a fistula already exists. These are also used to avoid ingrowth of tumor through the metal mesh. A metallic stent placed across the gastroesophageal junction leads to gastroesophageal reflux in patients.¹⁷

The chosen metallic stent in this patient was the uncovered type to minimize the migration risk of the stent. Metallic stent length was 15 cm with the diameter of 2 cm.

After the stent placement, physicians need to evaluate the dysphagia score, any other symptoms, and complications related to procedure. Dysphagia score should improve. Patients will occasionally feel chest pain, which can be controlled by analgesics and opiates. It is important to make sure whether the chest pain is related to acid reflux or not. Additional precautions should be taken, such as elevating the head of the bed and avoiding recumbence within 3 hours after the meal.¹⁷ Complications caused by metallic stent placement are immediate, early, and late complications. Immediate (at the time of placement) complications encompass aspiration, airway compromise, malposition, delivery system entrapment, stent dislodgement, incomplete deployment and perforation. Early (up to 1 week after stent placement) complications include bleeding, chest pain, and nausea. Late complications (beyond 1 week of successful stent placement) include recurrent dysphagia due to obstruction from tumor or food impaction, migration, tracheoesophageal fistula, bleeding, and gastroesophageal reflux disease.²⁰⁻²³

The dysphagia score before SEMS placement was 3 (dysphagia to solid and liquids). After the SEMS placement, the dysphagia score was 0. Patient felt relieved and could eat and drink normally. This patient was instructed to elevate his head in the bed and was prescribed intravenous analgetics. Patient was also prescribed proton pump inhibitor to suppress acid secretion.

At the time of deployment, patient did not have any complications. There were no aspirations, breathlessness, malposition, delivery system entrapment, stent dislodgement, incomplete deployment nor perforation. Within 1 week, patient complained a chest pain which was relieved by analgetics. To evaluate bleeding, we asked the patient whether there was any bloody vomit or melena. He denied any bloody vomit and melena. We also evaluated serial complete blood count to evaluate if there was any decrease in hemoglobin. From the result of complete blood count, we did not find any decrease in hemoglobin and hematocrite. Patient also did not feel any nausea. Late complications are also the one that we should seek. After 1 week, when the patient visited the gastroenterology clinic, he did not complain difficulty in swallowing or bleeding. However, he complained of slight chest pain which was relieved by analgetics. Patient did not complain any sour taste in his mouth. Overall, the SEMS placement was successful for the palliation of his malignant dysphagia.

Management of advanced gastric cancer is mainly palliative. The options of palliative therapy are widely available. One of the effective palliative therapies for dysphagia symptoms are placement of SEMS. SEMS placement requires thorough examination which encompasses pre-procedure assessment, deployment, and post-procedure observation.

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