

Palliative treatment of upper gastrointestinal obstruction using self-expansible metal stents

F. FIOCCA, V. CECI, G. DONATELLI, M.G. MORETTA, A. SANTAGATI,
G. SPORTELLI

Department of Surgical Endoscopy, "P. Stefanini" Department of General Surgery,
"La Sapienza" University, "Umberto I" General Hospital – Rome (Italy)

Abstract. – Gastric outlet obstruction is either a late event in the natural history of bilio-pancreatic tumors or the result of recurrent gastric or pancreatic tumors. Self-expansible metal stents, inserted under endoscopic and fluoroscopic control, can be used for palliative treatment. The present study was aimed at evaluating both the feasibility and the results of stenting in patients with malignant gastric outlet obstruction; in addition, some technical suggestions are presented.

A total of 33 patients, who had a metal stent positioned, were retrospectively evaluated; 20 of them were women and 13 were men, aged from 45 to 94 years, with a mean age of 75 years. Twentyseven patients had a pancreatic adenocarcinoma, 4 had a stricture of a gastrojejunal anastomosis due to recurrent pancreatic tumor, 2 had a stricture of a gastrojejunal anastomosis secondary to gastric cancer surgery. No postoperative complications were observed. Improvement in the quality of life was obtained in all patients. Following the stenting procedure, the median duration of hospitalization was 8 days (range: 6-20 days), and the mean survival rate was 12 weeks (range: 2-66 weeks).

Endoscopic stenting for the palliation of malignant gastric outlet obstruction is feasible and is well tolerated by most patients. In some cases a period of enteral nutrition had to be necessarily carried out; nonetheless, the insertion of the stent improved the quality of life.

Key Words:

Gastrointestinal obstruction, Bilio-pancreatic tumors, Self-expansible metal stents.

Introduction

Obstruction of the gastric outlet is a late complication of inoperable bilio-pancreatic tumors or

the result of local tumor recurrence following surgical removal. It is observed in 10-15% of the cases at the time of diagnosis of pancreatic tumors in the form of a stenosis of the duodenum: up to date the treatment of this complication has been based exclusively on a surgical gastrointestinal (GI) bypass¹⁻³. Local tumor recurrence is a complication involving often the gastrojejunal anastomosis after a Whipple's procedure for cancer and, less frequently, after a gastric resection for cancer. High mortality and morbidity following palliative surgery is observed in patients with advanced disease, poor general conditions, prolonged hospitalization, and digestive tract dysfunctions, such as delayed gastric emptying or bilious vomiting⁴.

For the endoscopic management of malignant duodenal stenosis, large bore, self-expansible metal stents have been recently developed as a less invasive procedure allowing the patient a prompt recovery as well as a prompt discharge from the hospital⁵.

In the present study we report the results obtained in our case series by the use of expansible metal stents for the palliation of upper digestive tract obstruction caused by malignant strictures.

Patients and Methods

A total of 33 patients were retrospectively evaluated; 20 of them were women and 13 were men, aged from 45 to 94 years, with a mean age of 75 years. Twentyseven patients had a pancreatic adenocarcinoma, 4 patients had a stenosed gastrojejunal anastomosis for pancreatic tumor recurrence, and 2 patients had a stricture of the gastrojejunal anastomosis following surgery for gastric cancer.

Patients with advanced cancer and symptomatic malignant upper GI obstruction were taken into consideration for stent implantation. All the patients had symptomatic obstruction characterized by nausea, vomiting, reduced oral intake and weight loss. None of the patients had been previously submitted to either chemotherapy or radiotherapy.

The degree, nature, length and site of the obstruction were assessed by endoscopic procedures, CT scans, and oral contrast opacification.

Endoscopic Procedure

With the patient under sedation obtained by 5-10 mg of Midazolam administered IV, a duodenal stent, or anastomotic stent, was positioned. After a gastroscopy the stricture was negotiated under fluoroscopic and endoscopic control using a 5 F catheter and a 0.035" guide wire. The stricture length was assessed by injecting radiopaque contrast medium; in most cases a stiff guide wire was left in place through the stricture and the expansible metal stent was positioned along the stenosis, under fluoroscopic control (Figure 1). Whenever the stenosis was found to be angulated, a dilatation was performed by a TTS balloon along the wire. Then the stent was left in place.

When the stenosis was located at the third duodenal portion, the stent was inserted along

the wire through the endoscope using a lateral view therapeutic duodenoscope with a 4.2 mm channel (Figure 2).

In 3 patients, after the duodenal stenting, a biliary stent was positioned by passing with the duodenoscope through the duodenal stent (Figure 3).

The Enteral Wallstent (Boston Scientific) was used, measuring from 18 to 22 mm in diameter and ranging 6 or 9 cm in length.

Following the procedure, an oral contrast opacification was obtained to assess the quality of the passage of liquid contrast media. The patients were allowed a liquid and soft diet on the day after the procedure and a regular solid diet after the discharge from the hospital.

Stent dysfunction was entertained when symptoms of upper digestive tract obstruction were present following a normal oral intake.

Results

Twenty patients with pancreatic cancer were already carriers of a biliary stent that had been positioned under either endoscopical or radiological control: the duodenal stent was applied even if the stricture involved the second duodenal portion. No problems were encountered with respect to biliary drainage. Seven patients with jaundice

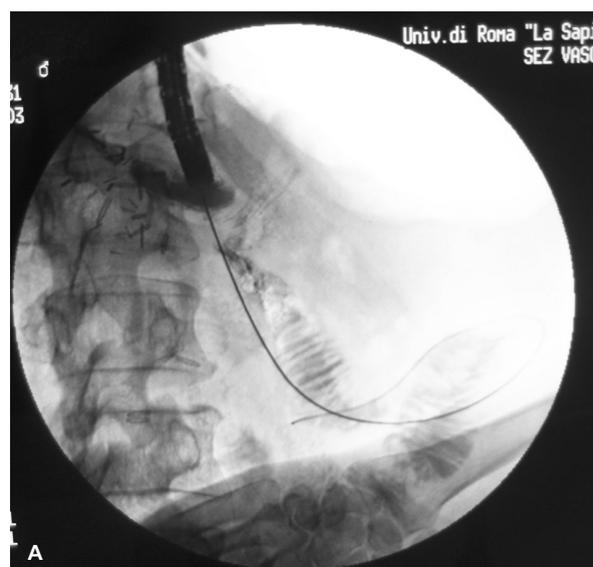


Figure 1. Stenting of gastrojejunal stricture.



Figure 2. Duodenal stenting by means of the therapeutic endoscope.

at the time of the duodenal occlusion were treated: 2 of them had duodenal dilatation and biliary prosthesis prior to the duodenal implantation of the endoprosthesis, while the remaining 5 patients had the biliary prosthesis implanted after the duodenal prosthesis, by passing through it with the operative endoscope.

No complications related to the procedure were observed.



Figure 3. Biliary stenting through a previously positioned duodenal stent.

Twelve patients in poor nutritional conditions received enteral nutrition by means of a feeding tube inserted through the endoprosthesis; they were allowed to drink.

Ten patients were evaluated for occlusion of the endoprosthesis: 2 of them had overgrowth of the tumor, while the remaining 8 patients had food impaction inside the endoprosthesis. The former were treated endoscopically with Argon plasma coagulation of tumor overgrowth, while the latter underwent washing of the stent. Two of the patients received also enteral nutrition by a tube driven through the prosthesis.

No stent migration was observed.

Following the stenting procedure, the median duration of hospitalization was 8 days (range: 6-20 days), and the mean survival rate was 12 weeks (range: 2-66 weeks).

Discussion

The present study was aimed at assessing the feasibility, clinical outcome and complications of palliative treatment by duodenal or anastomotic stenting for a) gastric outlet obstruction due to pancreatic tumors invading the duodenal wall, and b) anastomotic recurrence of pancreatic or gastric cancer. The main symptoms of nausea, vomiting, gastric distention and starvation were relieved by allowing the patients with advanced disease to resume an adequate oral intake or to undergo a temporary enteral nutrition through a naso-enteral tube⁶⁻⁸.

Until recently, the conventional management of gastric outlet obstruction was based exclusively on a surgical GI bypass (open or laparoscopic), that could be associated with a biliary bypass. However, in patients with advanced disease, prolonged hospitalization and digestive tract dysfunctions, such as delayed gastric emptying, the shortcomings of such procedures are high mortality and morbidity.

Self-expansible metal stents, developed for endoscopic insertion, allowed us to obtain, by means of a minimally invasive procedure, a good palliation of upper digestive tract obstruction secondary to malignant strictures.

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