Successful Self Expandable Metallic Stent Placement for Inoperable Prostatic Carcinoma causing Rectal Obstruction - A Case Report

Sethu Babu, Bhupender Singh, Jasleen Kaur*

Departments of Medical Gastroenterology Global Hospitals and *Anesthesia and Intensive Care Nizam’s Institute of Medical sciences, Hyderabad India

ABSTRACT

Prostate carcinoma unlike colonic malignancy is a slow growing tumor with tendency for late metastasis. Rectal obstruction in prostatic carcinoma is rare and occurs when the tumor infiltrates or causes extrinsic mass effect on the bowel. Considering the high morbidity, mortality and poor outcome associated with surgery in such cases, non-operative restoration of luminal patency is desirable. We report a case, who had inoperable prostatic carcinoma causing rectal obstruction, which was relieved by placement of self expandable metal stent (SEMS), thus avoiding the need for a major surgical procedure with improvement in quality of life. (J Dis Endosc 2010;1(4):186-88)

Key Words: Prostate carcinoma - Rectal obstruction - Self expandable metallic stent

Introduction

Maintenance of gastrointestinal luminal patency is of paramount importance in the treatment of patients with malignant obstruction. Placement of endoprothesis is not only effective for keeping the bowel lumen patent but also for palliation of obstructive symptoms and enhancing the quality of life of the patient. Hence, self expandable metallic stents (SEMS) are commonly being used by the endoscopists’ for establishing luminal patency and also as bridge to surgery.

Case Report

A 61-year-old gentleman, presented with features of sub-acute intestinal obstruction of 3 weeks duration. He had undergone surgery for benign hypertrophy of prostate 2 years ago. His evaluation confirmed distal large bowel obstruction and radiological imaging revealed infiltrating prostatic mass in peri-rectal area with narrowing of rectum and features of colonic obstruction (Figure 1). His colonoscopic examination showed luminal narrowing of the rectum due to extrinsic compression with normal rectal mucosa. His serum prostrate specific antigen (PSA) level was elevated to five times the upper limit of normal. He was diagnosed to be having locally advanced prostate carcinoma causing extrinsic rectal compression leading to distal large bowel obstruction. As he was unsuitable for curative surgery, the option of placement of self expanding metal stent (SEMS) was considered for palliation and achievement of intestinal luminal patency. Under fluoroscopy and colonoscopic guidance, 12cm long SEMS with a shaft diameter of 25 mm (Colonic Z-Stent by Wilson-Cook, USA) was deployed at the level of luminal narrowing (Figure-2). The reason for choosing this particular stent was the longer length and greater diameter of shaft and flared ends as compared to the other available stents. Following SEMS placement, his intestinal obstruction got relieved and he was followed for 11 months subsequently, during which he had no recurrence of intestinal obstruction.
been reported include – Type I -32%, Type II -45%, Type III -20% and Type IV 3%.1

Bowrey et al in 2003, analysed nine studies with rectal involvement by prostatic adenocarcinoma and reported that median survival for the 86 patients (for whom outcome data was available) was 15 months, while mean survival was 19 months. Survival beyond 30 months was rare.1

Treatment in these cases is mainly surgical to bypass the obstruction. However, considering the high morbidity and mortality outcomes associated with surgery, non-operative restoration of luminal patency is desirable and SEMS has found increasing use in the palliation of malignant large bowel obstruction.

In the case reported here, patient had symptomatic rectal obstruction due to advanced, inoperable prostatic carcinoma, which was effectively relieved by placement of SEMS across the obstruction. The primary indications for expandable metal stent placement in the colon and rectum is pre-operative decompression of inoperable malignant obstruction, to allow bowel cleansing for a single-stage surgical resection and long-term colonic decompression for patients with unresectable malignant obstruction.9,10 Placement of a colorectal stent enables bowel preparation, stabilization of the patient and an elective one-stage surgical procedure.11

The Wallenteral stent was first approved for use in malignant colorectal obstruction in 1996.12 Although esophageal stents have been used in the left colon and rectum, they can prove problematic in navigating the tortuous distal colon.11,13,14 Because of increased role of colonic stents in the preoperative and palliative setting, an increasing number of dedicated colonic stents have been introduced into the clinical setting. As a result of issues relating to stent complications including occlusion with fecal matter, migration and even perforation, newer colonic stent designs have been introduced. These include a dedicated Wallflex colonic stent and the Ultraflex Precision Colonic Stent system (Boston Scientific, USA) which have a larger diameter to prevent occlusion with fecal matter, a 30-mm proximal flare to prevent migration, are made of a more flexible Nitinol stent to maintain lumen integrity despite tortuous anatomy and contain a looped ending to decrease the risk of colonic perforation. The other commercially available stent is the Colonic Z-stent (Wilson-Cook, USA), which is made from stainless steel. It also has a flare (35 mm) and an increased diameter (25 mm) and comes in a variety of lengths (40,60,80,100 and 120 mm).15

The Nd:YAG laser can be used to increase luminal diameter prior to stent placement,16 but the added efficacy and safety of this approach is unproven. Neither balloon dilation nor laser therapy is universally recommended prior to colorectal stenting.17

The efficacy of SEMS in palliating or allowing preoperative preparation in patients with malignant colorectal

Discussion

Less than 200 cases of prostatic carcinoma with rectosigmoid involvement have been reported in the literature.1,2,3 The frequency of rectal involvement by prostatic adenocarcinoma in various studies has been found to be 4% with a range of 1–12%. The low frequency of this occurrence, given the anatomical proximity of the two organs, has been considered to be due to Denovilliers’ fascia acting as a barrier to local spread.

Rectal obstruction in prostatic carcinoma is rare and occurs when tumor infiltrates or causes extrinsic mass effect on the bowel wall. The form of rectosigmoid involvement was categorized by Lazarus in 1935 into the following three types: type I – an anterior rectal mass; type II – an annular rectal stricture; and type III – an ulcerating anterior rectal mass. In 1957, Winter added a type IV to the above classification to denote separate metastasis to the rectosigmoid. On review of literature various types of infiltration which have
obstruction approaches 90%. Stents can also be placed in the setting of benign obstruction to re-establish luminal patency and allow bowel cleansing prior to surgical resection. Stenting of known benign strictures is otherwise discouraged.

Earlier, uncovered (bare metal) designs allowed ingrowth of tumor through wire mesh, causing the stents to anchor in place. In contrast, covered versions effectively prevent such tumor in growth but have a higher rate of migration. The goal of SEMS is to maintain luminal patency, there must be a favorable balance between migration rates and prevention of tumor ingrowth. Current designs generally incorporate a covered mid section with uncovered flared ends that provide an anchoring mechanism. Due infrequent circumferential involvement of rectum in prostatic carcinoma, SEMS migration in these patients is more likely. However, no study is available where outcome of SEMS placement in case of primary colorectal obstructive tumour was compared with that with rectal obstruction secondary to prostatic carcinoma.

Complications associated with stent placement include perforation, bleeding, stent migration, tumor ingrowth and fistula formation. Placement of a colonic stent carries a 5% perforation rate. Dilation of the malignant colorectal stricture is not recommended because this action can increase risk of perforation. The decreasing diameters of delivery systems make perforation a rare occurrence and are generally related to pre-stent dilation. Stent migration is reported to be higher in the colon up to 40%, secondary to increased peristalsis. Tumor ingrowth rates are obviously higher with uncovered stents, but overgrowth at the distal or proximal ends can occur with covered versions. Tumor ingrowth and overgrowth depends on tumor proliferation, length of follow-up, stent design, and possibly prior therapy. This complication may be treated by coaxial placement of another stent, laser therapy, argon plasma coagulation, photo dynamic therapy and dilation.

Conclusions

This case reported here underscores a number of important points. First, rectal infiltration by prostatic adenocarcinoma, is of uncommon occurrence. Second, in such patients with malignant rectal obstruction, diagnostic confusion may occur, resulting in treatment for primary rectal rather than primary prostatic pathology and inappropriate colorectal resection. Finally, rectal obstruction by prostatic adenocarcinoma though rare, when it occurs, relief of symptoms can be managed with placement of self expanding metal stents with high success rate for relief of symptoms.

References


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