

# Palliative Stenting for Malignant Large Bowel Obstruction: Stents for All?

Jorge Canena

Centro de Gastrenterologia do Hospital Cuf Infante Santo, Nova Medical School – Faculdade de Ciências Médicas da UNL, Lisbon, Serviço de Gastrenterologia do Hospital Amadora-Sintra, Amadora, and Serviço de Gastrenterologia do Hospital de Santo António dos Capuchos, CHLC, Lisbon, Portugal

## Keywords

Metallic stent · Malignant large bowel obstruction · Palliative stenting

## Tratamento Paliativo da Obstrução Maligna Colo-Rectal com Próteses Metálicas: Próteses Para Todos?

## Palavras Chave

Próteses metálicas · Obstrução maligna colo-retal · Tratamento paliativo com próteses

Life, like scientific knowledge, is most of the time a rollercoaster, meaning that a subject can go up and down in the course of time. This is also true with respect to the application of a self-expandable metallic stent (SEMS) as a definitive palliative treatment in obstructive colorectal cancer. In the last years of the first decade of the 21<sup>st</sup> century, papers concerning SEMS, as a nonsurgical palliative treatment for malignant colorectal obstruction, always asked the same question in the introduction: “the question remains: are SEMS used for definitive palliation of malignant colorectal obstruction as successful as those

used as a bridge to surgery?” [1–5]. It is clear that 8 years ago, the use of a stent preoperatively was considered the standard of care and highly recommended in every tertiary center [6, 7]. Furthermore, the use of a stent as a definitive palliative treatment for the remaining life of a patient was still a matter of debate.

However, today, in December 2016, everything is reversed. In 2014, the European Society of Gastrointestinal Endoscopy (ESGE) presented guidelines for the use of metallic stents in obstructive colorectal cancer [8]. The special focus is on 2 items: (a) SEMS placement as a bridge to elective surgery is not recommended as a standard treatment of symptomatic left-sided malignant colonic obstruction. For patients with potentially curable but obstructing left-sided colonic cancer, stent placement may be considered as an alternative to emergency surgery in those who have an increased risk of postoperative mortality, i.e., American Society of Anesthesiologists (ASA) physical status  $\geq$ III and/or age  $>$ 70 years. In addition, to create the perfect scenario for a huge debate, the so-called poor son returned in glory: (b) SEMS placement is recommended as the preferred treatment for palliation of malignant colonic obstruction, except in patients treated or considered for treatment with antiangiogenic drugs (e.g., bevacizumab). How did we arrive at this conclusion?

Colorectal cancer is one of the leading malignancies worldwide [4, 9]. One of the most common complications is obstruction, which can occur in up to 20% of the patients [4, 7]. The majority of patients presenting with obstruction have advanced disease, are often elderly individuals, and have overall a poor medical condition [4, 7, 10, 11]. Curative treatment is not feasible, and therefore palliation is the primary aim in these patients [1, 4, 10, 12]. Emergency surgery in patients with an unprepared colon leads to significant morbidity and mortality [4, 13, 14]. Furthermore, surgery often involves creation of a colostomy, which is not reversed in up to 50% of the patients, leading to a profound negative impact on the quality of life [1, 4, 13, 14].

In 1990, an unknown Berlin surgeon used a metallic stent to treat a patient with obstructive rectal cancer, and without foreseeing the future, he initiated an endless debate [15]. Two recent meta-analyses have created a robust case for SEMS in the palliative scenario [16, 17]: (1) Liang et al. [16] conducted a meta-analysis of 9 studies (3 randomized controlled trials as well as 2 prospective and 4 retrospective trials) comparing SEMS to surgery for palliative treatment of colorectal obstruction. A combined analysis revealed that the SEMS group had similar short-term complication and mortality risks as the surgical group. However, the SEMS group was associated with a shorter hospitalization time followed by a quick recovery. (2) Zhao et al. [17] conducted a new meta-analysis concerning 13 relevant articles (prospective, retrospective, and controlled), representing 837 patients (SEMS group,  $n = 404$ ; surgery group,  $n = 433$ ). The authors found that compared to the surgery group, the SEMS group showed lower clinical success but shorter durations of hospital stay, shorter time to initiation of chemotherapy, and a lower rate of stoma formation. Both meta-analyses reported a successful relief of obstruction when palliative SEMS placement was concerned (with a >90% rate). Additionally, the SEMS group experienced a significantly lower rate of 30-day mortality. Finally, the rate of total complications was similar between these 2 groups. Short-term complications occurred more often in the palliative surgery group, while late complications were more frequent in the SEMS group. Stent-related complications (34%) mainly included colonic perforation (10%), stent migration (9%), and reobstruction (18%), far from the disastrous numbers that some papers reported in the past; the results were questioned due to the poor experience of the endoscopists included in the studies [11, 18]. A recent large prospective study prospectively followed 255 patients submitted to SEMS placement in the palliative set-

ting. After 1 year of follow-up, clinical success was obtained in 96% of the patients still alive and reporting a rate of complications of 36.8%, namely a perforation rate of 5.1% [19]. In previous retrospective series, we observed that sustained relief of obstruction without reintervention was obtained in approximately 75% of the patients until death, and this result could be further enlarged to 80–90% of the cases using a second stent [2, 4, 12]. Furthermore, other recent studies suggested that placing a second stent in patients previously submitted to palliative stenting was a viable option [20, 21].

One important issue in delivering SEMS in the palliative scenario is the evaluation of risk factors for complications. In a large retrospective series, Small et al. [12] identified complete obstruction, operator experience (<20 procedures), stricture dilatation, stent diameter  $\leq 22$  mm, and bevacizumab as predictors of complications. In a retrospective series of 39 patients, Jung et al. [2] found that the location of the obstruction and the length of the stent were significant factors associated with a good outcome. Shorter stents (<10 cm) had better outcomes than longer stents ( $\geq 10$  cm), and patients with a distal colorectal obstruction had better outcomes than those with a proximal colorectal obstruction. Interestingly, some authors affirm that when the placement of a stent in the proximal colon (i.e., proximal to the splenic flexure) is compared to a stent placed in the left colon, there were no differences in the technical and clinical success rates for both procedures, suggesting that the through-the-scope technique makes all tumor locations accessible from a technical perspective [4, 12, 22].

Another study retrospectively analyzed 201 consecutive patients undergoing stenting for incurable malignant obstruction [3]. Extrinsic and long colorectal stenoses were associated with higher rates of technical and clinical failures, migration was associated with a stent diameter <25 mm, and bevacizumab therapy increased the risk of perforation by 19.6-fold. Concerning factors associated with survival, a Karnofsky performance status of  $\leq 50$  was associated with shorter survival and a 3.7-fold higher risk of death within 6 months after the stent was placed. One important issue is the success of stenting extrinsic malignant stenosis. The technical and clinical success rates of placing SEMS in extracolonic malignancies have been reported to range from 67 to 96% and from 20 to 96%, respectively [23–27], which are poor results when compared to those reported for stenting of colorectal cancer [28, 29]. One retrospective study comparing SEMS placement for primary colonic tumor versus extracolonic malignancies reported an increased complication rate in the

extracolonic malignancy group (33 vs. 9%) [27]. However, other studies did not report extrinsic obstruction as a risk factor for complications [28, 29]. The recent ESGE guidelines suggest that it is generally advisable to attempt palliative stenting of extracolonic malignancies in order to avoid surgery in these patients who have a relatively short survival [8].

In this issue of the *GE Portuguese Journal of Gastroenterology*, Sousa et al. [30] retrospectively analyzed 45 patients submitted to SEMS for palliation of obstructing malignant colorectal cancer over a 10-year period. As expected, experienced endoscopists (>20 procedures) reported a technical and clinical success rate of >90%. Additionally, relief of obstruction without intervention was maintained until death in 77.8% of the patients, and this rate was improved with reintervention, namely placing another stent in obstructed patients previously submitted to palliative stenting. In line with the literature, they reported a 17.8% rate of complications including a 8.9% rate of perforations. The authors also analyzed possible predictors of complications, namely gender, age, location of tumor, presence of metastasis, and the Eastern Cooperative Oncology Group (ECOG) stage, which were not statistically significant predictors of complications. This is no surprise, as most of these factors have not emerged in the literature as predictors of complications, except the location of the tumor, namely a proximal location, which is a conflicting predictive factor as discussed before. However, in the study by Sousa et al. [30] only 4 patients had their strictures located in the proximal colon, and therefore, it was impossible to draw conclusions from this low number of patients. Interestingly, the above-mentioned study identified the length of stenosis as an independent

predictor of complications. This has been previously debated in several studies with conflicting results: (1) 3 studies reported that stenting of a long obstructed segment was not associated with clinical failures [31–33]; (2) however, in 2 retrospective studies, a better outcome was observed in short colon strictures [2, 3]. One of these retrospective studies reported more technical failures in strictures >4 cm (OR 5.33) and even clinical failures (OR 2.40) [3].

Taken together and in conclusion, the study by Sousa et al. [30] shows what experienced endoscopists have learned in the last 15 years, without the need of illuminating guidelines which have a lot of weak points and should be reopened for discussion. Definitive palliation of malignant large bowel obstruction using metallic stents is associated with clinical success (including restenting) until death in 80–90% of the patients; it avoids colostomies and improves quality of life. The procedure provides rapid and effective relief of obstruction and is associated with acceptable morbidity and need for reintervention, as well as minimal mortality. It should be performed by experienced endoscopists. Even in clinical situations with known risk factors (e.g., extrinsic, long, and total obstructions), stenting is an acceptable first option. So, in conclusion, for palliation of malignant large bowel obstruction the answer is: stents for all.

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