



Is stent insertion for obstructing colon cancer a good prognostic factor in long-term oncologic outcomes in symptomatic obstructive colon cancer?

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Although obstructive colon cancer can often be treated with first-stage resection with primary anastomosis, the results of the oncological outcome of using stenting as a bridge of surgery in the literature are still controversial. Stent insertion for obstructed cancer provides an opportunity for bowel preparation and makes preoperative work-up and clinical staging possible. However, although stenting is becoming a more frequent treatment modality, studies with a significant number of patients acting as a bridge between surgery are still lacking. In this issue of *Journal of Minimally Invasive Surgery*, the study by Kim et al. highlights the efficacy of stent insertion as the initial treatment and analyzed the prognostic factors in symptomatic obstructive colon cancer. The study demonstrated that emergent surgery, vascular invasion, and omitting adjuvant chemotherapy were independent poor prognostic factors in long-term oncologic outcomes suggested that stent insertion should be considered an initial treatment for symptomatic obstructive colon cancer.

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Approximately 80% of colonic obstruction is due to colorectal malignancy [1,2], and 10% to 30% of patients with colorectal carcinoma present with acute obstruction that requires urgent decompression at initial presentation [3,4]. The mortality and morbidity rates of emergency operation in such cases are 7% and 30%, respectively, and only 60% of patients who underwent Hartmann procedure can achieve colostomy closure [1,5].

After the introduction of colonic stents to relieve acute colonic obstruction by Dohmoto [6] in 1991, self-expanding metal stents (SEMS) have been increasingly used as a bridge to subsequent elective surgery. SEMS measure stabilization time, the detailed examination required for patient health, improvement of patient nutritional status, appropriate preoperative staging time to avoid

unnecessary surgical exploration, evaluation of the proximal colon via colonoscopy, and selective definitive surgery to increase the likelihood of primary anastomosis.

SEMS for obstructed colon cancer provides an opportunity for bowel preparation and makes preoperative workup and clinical staging possible. However, although stenting is becoming a more frequent treatment modality, studies with a significant number of patients are still lacking. In this issue of the *Journal of Minimally Invasive Surgery*, the study by Kim et al. [7] highlights the efficacy of stent insertion as an initial treatment and analyzes the prognostic factors in symptomatic obstructive colon cancer.

Although obstructive colon cancer can often be treated by first-stage resection with primary anastomosis, results demon-

strating the oncological outcomes of using stenting as a bridge to surgery are still controversial. A preclinical study reported a significant increase in cytokeratin 20 messenger RNA expression and suggested that stenting could spread malignant cells into the circulation [8]. The European Society of Gastrointestinal Endoscopy clinical guidelines recommend the use of stents in young, healthy patients with potentially treatable left malignant colonic obstruction. This was recommended because stenting without reducing postoperative mortality in the general population may be associated with an increased risk of tumor recurrence [9]. According to a meta-analysis published in 2015, the 5-year overall survival (OS) rates in the bridge-to-surgery group and the emergency surgery group were 57.2% and 67.1%, respectively [10]. In addition, the 5-year progression-free survival of the stent insertion and emergency surgery groups in the five studies was 48.4% and 59.0%, respectively, and there was no significant difference between the two groups. In Kim et al.'s study [7], SEMS insertion showed a similar rate of 5-year disease-free survival (DFS) and recurrence and better OS compared to those of emergent surgery (5-year DFS rate: 74.4% vs. 71.4%, $p = 0.464$; recurrence: 26.2% vs. 28.6%, $p = 0.755$; OS rate: 58.7% vs. 71.4%, $p = 0.024$). These results reflected the oncologic safety of the surgery following the stent approach and suggested that surgery following stent insertion could be a promising alternative strategy for obstructed colon cancer.

Colonic obstruction was considered a relative contraindication to laparoscopic surgery due to the poor surgical field from intestinal distension and the potential for damage to the fragile intestine. In Kim et al.'s study [7], the rate of left-sided colon cancer (83.9% vs. 54.8%, $p < 0.001$), laparoscopic approach (55.4% vs. 23.8%, $p < 0.001$), and an adequate lymph node harvest number of more than 12 (93.5% vs. 69.0%, $p < 0.001$) were significantly higher in the stent insertion group than the emergent surgery group. Kim et al. [11] reported that the laparoscopic group received adjuvant chemotherapy at a somewhat greater rate than the open group (66.2% vs. 59.4%, $p < 0.01$). They also reported a better 2-year OS rate for laparoscopic surgery than open surgery (81.9% vs. 73.2%, $p < 0.01$) in the treatment of colon cancer. These results suggest that the stent-laparoscopy approach seemed to be associated with greater rates of compliance for adjuvant chemotherapy.

For patients who have undergone resection, which could potentially cure colon cancer, the benefits of adjuvant therapy have been most clearly demonstrated in stage III disease [12,13]. In Kim et al.'s study [7], the rate of adjuvant chemotherapy (81.5% vs. 61.9%, $p = 0.006$) was significantly higher in the SEMS insertion group, and emergent surgery, vascular invasion, and omitting adjuvant chemotherapy were independent poor prognostic factors in the 5-year OS. These results suggest that adjuvant chemotherapy plays a significant role in the setting of stent insertion

following curative resection for obstructed colon cancer. Recent publications, including Kim et al.'s study [7] on this issue, support the use of stent insertion as an initial treatment for symptomatic obstructive colon cancer and suggest that adjuvant chemotherapy should be performed after surgery, especially when lymph node metastasis or vascular invasion is identified.

NOTES

Conflict of interest

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REFERENCES

1. Deans GT, Krukowski ZH, Irwin ST. Malignant obstruction of the left colon. *Br J Surg* 1994;81:1270-1276.
2. Rault A, Collet D, Sa Cunha A, Larroude D, Ndobu'epoy F, Masson B. Prise en charge du cancer colique en occlusion [Surgical management of obstructed colonic cancer]. *Ann Chir* 2005;130:331-335.
3. Phillips RK, Hittinger R, Fry JS, Fielding LP. Malignant large bowel obstruction. *Br J Surg* 1985;72:296-302.
4. Serpell JW, McDermott FT, Katrivessis H, Hughes ES. Obstructing carcinomas of the colon. *Br J Surg* 1989;76:965-969.
5. Wong RW, Rappaport WD, Witzke DB, Putnam CW, Hunter GC. Factors influencing the safety of colostomy closure in the elderly. *J Surg Res* 1994;57:289-292.
6. Dohmoto M. New method: endoscopic implantation of rectal stent in palliative treatment of malignant stenosis. *Endosc Dig* 1991;3:1507-1512.
7. Kim CH, Bae JH, Lee CS, et al. Which prognostic factors are important for long-term outcomes in symptomatic obstructive colon cancer? A multi-institutional retrospective cohort study. *J Minim Invasive Surg* 2021;24:128-138.
8. Maruthachalam K, Lash GE, Shenton BK, Horgan AF. Tumour cell dissemination following endoscopic stent insertion. *Br J Surg* 2007;94:1151-1154.
9. van Hooft JE, van Halsema EE, Vanbiervliet G, et al. Self-expandable metal stents for obstructing colonic and extracolonic cancer: European Society of Gastrointestinal Endoscopy (ESGE) Clinical Guideline. *Gastrointest Endosc* 2014;80:747-761.E75.
10. Matsuda A, Miyashita M, Matsumoto S, et al. Comparison of long-term outcomes of colonic stent as "bridge to surgery" and emergency surgery for malignant large-bowel obstruction: a meta-analysis. *Ann Surg Oncol* 2015;22:497-504.
11. Kim RH, Kavanaugh MM, Caldito GC. Laparoscopic colectomy for

- cancer: improved compliance with guidelines for chemotherapy and survival. *Surgery* 2017;161:1633-1641.
12. André T, Boni C, Navarro M, et al. Improved overall survival with oxaliplatin, fluorouracil, and leucovorin as adjuvant treatment in stage II or III colon cancer in the MOSAIC trial. *J Clin Oncol* 2009;27:3109-3116.
 13. Yothers G, O'Connell MJ, Allegra CJ, et al. Oxaliplatin as adjuvant therapy for colon cancer: updated results of NSABP C-07 trial, including survival and subset analyses. *J Clin Oncol* 2011;29:3768-3774.