Stenting and colorectal cancer

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Colorectal cancer (CRC) is the second commonest cancer in the United Kingdom. It affects 35 000 individuals each year in England and Wales alone. Although the age adjusted mortality from CRC remains close to 50 per cent, recent developments in diagnosis and adjuvant therapy have improved survival rates. These quantifiable survival benefits have all resulted from randomized controlled trials.

Up to 30 per cent of CRCs present as an emergency with large bowel obstruction. The mortality rate following emergency surgery for obstructing lesions is high, between 15 and 30 per cent; the mortality rate following elective surgery for CRC is 5 per cent. Furthermore, emergency surgery is associated with a prolonged hospital stay, a greater requirement for critical care and a high frequency of stoma formation, all of which compromise the patient’s quality of life and recovery. For those who survive an emergency operation, early survival (according to stage) is similar to that associated with the elective setting. Patients treated in the emergency setting, however, may have their subsequent care compromised as they are often unable to tolerate adjuvant chemotherapy. These features suggest that it is the process of care, rather than the disease itself, that influences survival adversely in the emergency setting.

Published reports suggest that stenting of obstructing lesions may allow emergency surgery to be avoided. This should permit a full assessment and preparation of the patient for an ‘elective’ operation, thereby reducing operative morbidity and improving quality of life and survival. Self-expanding metal stents were initially deployed in patients with incurable disease. More recently they have become popular as a ‘bridge to surgery’ in those with obstructing CRC. Stenosing lesions in the rectum and rectosigmoid region can be treated by a radiologist working alone, but the more proximal the lesion, the greater the need for a combined endoscopic/fluoroscopic approach. Following the introduction of a guide wire beyond the obstruction, the stent is inserted either through the endoscope or, after removal of the endoscope, over the guide wire. Stent delivery systems require an endoscope working channel of 3–7 mm. For left-sided lesions, the therapeutic gastroscope is most often used; for right-sided lesions a therapeutic colonoscope is required. A number of non-randomized studies have compared different stent designs but no single design has yet been shown to be superior.

Nearly a hundred articles have been published on stent insertion for malignant colorectal obstruction. Sebastian and colleagues in 2004 performed a pooled analysis of 1198 patients from 54 heterogeneous cohort studies. They reported median technical and clinical success rates of 94 (i.q.r 90–100) and 91 (i.q.r 84–94) per cent, respectively. The clinical success when used as a bridge to surgery was 71–9 per cent. Early complications relating to stent placement included perforation (3–7 per cent) and stent migration (11–8 per cent). Stent-related mortality was 0–58 per cent. No meaningful data exist on the long-term effect of stenting on CRC survival. This is important because recent evidence suggests that the endoscopic insertion of colonic stents results in increased levels of CK20 mRNA in the peripheral circulation and may result in tumour cell dissemination. It is also unfortunate that these small, non-randomized, series are subject to significant selection bias between the study populations. This calls their conclusions into question and should restrict dissemination of their findings into clinical practice.

Despite these undoubted limitations in evidential quality, stent insertion is becoming more widely practiced, both in the palliative and the emergency setting. To date, no randomized controlled clinical trial comparing emergency colorectal stenting with emergency surgery for CRC has been undertaken. Importantly, the recent Dutch Stent-in-1 Study was closed prematurely. This was a multi-centre, prospective controlled trial designed to assess the potential benefit of endoluminal stenting compared to surgery in patients with incurable CRC. The trial was stopped because of the high rate of stent-related complications. By the end of the trial, six of nine stented patients had a perforation, resulting in operative intervention or death. Two of the perforations occurred 12 days after stent insertion, and the other four at a later stage following chemotherapy. The closure of this study highlights the considerable uncertainty about the role of endoluminal stenting. In addition, in 2007 the National...
Bowel Cancer Audit Project reported an 11 per cent mortality after colonic stenting for obstructing cancers; the authors commented that this was higher than in previously published reports and needed further study. Stent insertion needs to be properly evaluated in a randomized controlled trial. Cancer Research UK has recently funded a multi-centre randomized trial of stenting in obstructing left-sided CRC (CReST). This trial aims to randomize 400 patients to answer the following questions. First, is there a worthwhile net benefit (length of hospital stay, 30-day mortality and presence and duration of a stoma) from endoluminal stenting for patients presenting with an obstructing colonic cancer? Second, if such a benefit exists, is this identifiable in patients undergoing attempted curative treatment, palliative treatment, or both?

For those who are already convinced of the benefits of stent deployment for obstructing CRC, the story of stenting for carotid artery stenosis is noteworthy. Initial enthusiasm for carotid stenting led to its use in many centres. Yet as Beebe and Kritpracha pointed out ‘Because no prospective randomized trial has yet been published comparing carotid endarterectomy with carotid angioplasty and stenting, we must use data from statewide, population-based, and single-center reports to compare the procedures’; such data led to their concluding that ‘current evidence does not indicate the use of carotid stenting as a routine alternative to carotid endarterectomy’. A meta-analysis has shown that carotid endarterectomy can be performed with more safety than the endovascular procedure, and that endarterectomy remains the ‘gold standard’ treatment for carotid stenosis requiring intervention.

It may well be that stent insertion does, indeed, offer significant advantages for patients with obstructing CRC, but this is not yet proven. Demonstrating benefit in the setting of a randomized clinical trial should enable any advantages to be properly evaluated. Benefit can then reach the greatest number of patients in the most appropriate way.

References