Letter to the Editor

Safety implications of oesophageal stents used for the palliation of dysphagia in patients undergoing neoadjuvant therapy for oesophageal malignancy

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In their recent systematic review and meta-analysis, Nagaraja and colleagues support the use of self-expanding metal stents (SEMS) in patients with oesophageal malignancy undergoing neoadjuvant therapy prior to potentially curative oesophagectomy as 'safe and effective' (1). Summarising the results of nine studies comprising 180 patients, the authors identify both a significant reduction in dysphagia and matched increases in weight and serum albumin in patients treated with SEMS insertion. There is, however, a substantial body of evidence to demonstrate a myriad of adverse events resulting directly from the use of oesophageal stents which we believe should preclude their use for the relief of dysphagia in patients awaiting curative resection.

Nagaraja and colleagues report the incidence of stent migration in their study to equal 32%, attributed to tumour response from neoadjuvant therapy. This figure masks significant rates of unplanned reintervention for stent revision, exchange or removal noted within series published by Adler *et al*., Lopes *et al*., Langer *et al*., Martin *et al*. and Siddiqui *et al*. (2-6). At best, this may inconvenience patients and delay neoadjuvant therapy whilst, at worst, emergency laparotomy is required to prevent or treat small bowel perforation.

There are additional reports of severe adverse effects directly related to the presence of an oesophageal stent in an otherwise potentially curable patient. Within a series of 16 patients undergoing stent insertion, Christie and colleagues reported one case of stent erosion in to a vertebral body, which made surgery more difficult, and death resulting from mediastinal sepsis secondary to a mediastinal abscess formed following occult perforation caused by a stent (7). The risk of local anatomical disruption is supported by Langer and colleagues' 2010 series of 38 patients which notes five serious complications resulting from stent use, including two oesophago-tracheobronchial fistulae, one acute oesophageal perforation, one small bowel perforation and one erosion of the aortic wall (4). Lopes *et al*. additionally makes note of a case of tracheoesophageal fistulation occurring within a series of ten patients (3). Even in patients who are unaffected by these life threatening complications other authors have noted difficult tissue planes during oesophagectomy in patients who have been treated with stents.

A more common complication of stent insertion noted by the authors is one of chest discomfort, which occurred in 51% of their cohort. Although commonly reported to be self-limiting and readily relieved with oral analgesia, there are within the literature cited by Nagaraja a number of reports of significant chest pain which has followed stent insertion and subsequently necessitated emergency removal (1).

Even in those who do not develop an adverse effect associated with stent insertion, their use appears marred by the potential for compromising survival and overall progression to surgery. Randomised analyses have revealed worse survival in patients with palliative oesophageal malignancy who receive metal stents, rather than alternative approaches for the relief of dysphagia (8). No similar analysis of survival or rates of progression to surgery is afforded by Nagaraja *et al*.'s analysis, yet progression to surgical resection is reported within series they cite to be as

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low as 15%. This may be due to the advanced nature of the tumours stented, however a direct effect of the stent cannot be discounted. There is interesting data from patients with colorectal cancer which highlights an increase in the number of free tumour cells within the circulation following stent insertion, a phenomenon considered secondary to mechanical stress imposed on the tumour body (9).

Whilst the improvement in dysphagia, weight and serum albumin reported by Nagaraja *et al*. appears to afford promise in the management of patients with dysphagia undergoing neoadjuvant therapy, clinicians must apply caution to its interpretation in light of the above comments. There is a clear need for randomised controlled trial to compare oesophageal stents of all materials to alternative strategies (such as nasogastric tube or feeding jejunostomy) to relieve dysphagia in potentially curative patients undergoing neoadjuvant therapy.

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References

1. Nagaraja V, Cox MR, Eslick GD. Safety and efficacy of esophageal stents preceding or during neoadjuvant chemotherapy for esophageal cancer: a systematic review and meta-analysis. J Gastrointest Oncol 2014;5:119-26.
2. Adler DG, Fang J, Wong R, et al. Placement of Polyflex stents in patients with locally advanced esophageal cancer is safe and improves dysphagia during neoadjuvant therapy. Gastrointest Endosc 2009;70:614-9.
3. Lopes TL, Eloubeidi MA. A pilot study of fully covered self-expandable metal stents prior to neoadjuvant therapy for locally advanced esophageal cancer. Dis Esophagus 2010;23:309-15.
4. Langer FB, Schoppmann SF, Prager G, et al. Temporary placement of self-expanding oesophageal stents as bridging for neo-adjuvant therapy. Ann Surg Oncol 2010;17:470-5.
5. Martin RC 2nd, Cannon RM, Brown RE, et al. Evaluation of quality of life following placement of self-expanding plastic stents as a bridge to surgery in patients receiving neoadjuvant therapy for esophageal cancer. Oncologist 2014;19:259-65.
6. Siddiqui AA, Sarkar A, Beltz S, et al. Placement of fully covered self-expandable metal stents in patients with locally advanced esophageal cancer before neoadjuvant therapy. Gastrointest Endosc 2012;76:44-51.
7. Christie NA, Buenaventura PO, Fernando HC, et al. Results of expandable metal stents for malignant esophageal obstruction in 100 patients: short-term and long-term follow-up. Ann Thorac Surg 2001;71:1797-801; discussion 1801-2.
8. Shenfine J, McNamee P, Steen N, et al. A randomized controlled clinical trial of palliative therapies for patients with inoperable esophageal cancer. Am J Gastroenterol 2009;104:1674-85.
9. Maruthachalam K, Lash GE, Shenton BK, et al. Tumour cell dissemination following endoscopic stent insertion. Br J Surg 2007;94:1151-4.

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