Non-centralised service for palliative stenting of malignant gastric outlet obstruction

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ABSTRACT

INTRODUCTION Malignant gastric outlet obstruction (GOO) is a common, debilitating and frequently pre-terminal symptom of intra-abdominal malignancies. Traditional 'gold standard' treatment has been palliative surgical gastro-enterostomy. Over the past two decades, use of self-expanding metallic stents (SEMSs) to relieve malignant GOO has become first-line treatment. We present the results from a single district general hospital in the UK in which malignant GOO was treated with SEMSs over a six-year period.

METHODS All patients who underwent palliative stenting for malignant gastro-duodenal tumours in our centre for six years up to January 2013 were assessed retrospectively. Outcomes were assessed with regard to: technical and clinical success; return to oral nutrition; prevalence of complications and re-intervention; and overall survival.

RESULTS Thirty-two stents were implanted in 29 patients. Technical success was 100%. Clinical success and return to oral nutrition were both 91%. The prevalence of complications was 16%. The prevalence of re-intervention was 13%. Mean survival was 91 (range, 5–392) days. Median wait from decision to implant a stent to stent implantation was 1 (range, 0–14) day. Overall, 25 covered and nine uncovered stents were implanted.

CONCLUSION Stent implantation for GOO in this patient group is an established and preferable alternative to surgical intervention. Much of the treatment for malignancies of the upper gastrointestinal tract has now been centralised. Our data showed comparable results with published data for these procedures, with a high prevalence of success and low prevalence of major complications. It is of considerable benefit to these patients not to have to travel to a regional centre for stent implantation.

KEYWORDS

Gastric outlet obstruction – Palliative care – Intestinal neoplasms – Oral nutrition – Self-expanding metallic stents

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Malignant gastric outlet obstruction (GOO) is a relatively common, debilitating and frequently pre-terminal symptom of cancers of the upper gastrointestinal (GI) tract and many intra-abdominal malignancies. The traditional 'gold standard' treatment has been palliative surgical gastro-enterostomy. The patient group that presents with malignant GOO is often nutritionally compromised, carries a high risk of aspiration, and has poor physiological reserve. Surgical intervention in such a patient group has been shown to have unacceptably poor outcomes¹.

Over the last two decades, use of self-expanding metallic stents (SEMSs) to relieve malignant GOO as a method of palliation has been shown to elicit better outcomes than surgical gastro-enterostomy.^{2–4} Here, we report the results from a single district general hospital in the UK in which malignant GOO was treated with SEMSs over a six-year period.

Methods

All patients who underwent palliative stenting for malignant GOO in our centre in a six-year period up to January

2013 were assessed retrospectively. Two patients were excluded owing to non-availability of medical notes. During this period, palliative surgical bypass was not undertaken as a primary treatment in this patient group because published results were felt to be better after treatment with SEMSs. Outcomes were assessed for: technical and clinical success; return to oral nutrition; prevalence of complications; prevalence of re-intervention; overall survival.

'Technical success' was defined as stent implantation across the stricture with easy flow of contrast media at the end of the procedure. 'Clinical success' was defined as resolution of GOO symptoms (intractable vomiting necessitating gastric drainage). The measure of clinical success was positive if this definition was met on the day after stent implantation. 'Return to oral nutrition' was defined as being able to tolerate an oral diet that satisfied the desire to eat (rather than any nutritional objectives) at the time of discharge from hospital. The specific nature of the diet (liquid, soft, normal) tolerated by patients was not recorded. SEMSs were placed via a 'through the endoscope' method as a joint procedure undertaken by a

radiologist and endoscopist to achieve optimal drainage and stent implantation.

Results

Thirty-two stents were implanted in 29 patients. Intra-abdominal malignancies causing GOO were: gastro-duodenal primary (19 cases), pancreatic primary (5), cholangiocarcinoma (2), metastatic colonic cancer (2) and carcinoma of unknown primary (1). Most of the service was provided by one radiologist (94% of cases) and by one of two endoscopists (79% of cases). Technical success was 100%. Clinical success and return to oral nutrition was 91% for both. The prevalence of complications was 16% (two stents migrated, one stent had tumour overgrowth, and two patients had obstruction due to a food bolus). Life-threatening complications such as aspiration, bleeding or perforation were not observed. The prevalence of re-intervention was 13% (three re-stenting procedures and one gastroenterostomy). Median survival was 62 (range, 5–392) days. A Kaplan–Meier survival curve (Fig 1) displayed a high early drop-off, as is to be expected in a frail patient group with advanced malignancy. At the time of data collection, two patients were alive and at that point had survived 91 days and 453 days from original stent implantation. Median waiting time from decision to implant a stent to stent implantation was 1 (range, 0–14) day. Overall, 25 covered and nine uncovered stents were implanted. Covered stents were preferred over non-covered stents to minimise the risk of re-stenosis, and were used exclusively in the final year of the study.

Discussion

The outcomes detailed in the present study are similar to those published already,^{5–8} with a high prevalence of success and low prevalence of complications. The intention of this single-centre study was not to validate the use of SEMSs for palliative stenting of malignant GOO because there is good evidence^{2–9} to support this strategy as first-line treatment in this patient group. What we have demonstrated is that it is possible to run a prompt and safe palliative stenting service outside a teaching hospital or centre specialising in

resection of tumours of the upper GI tract. All patients went through a local multidisciplinary team (MDT). The decision not to refer for curative treatment was validated by the MDT at a regional resection centre. We achieved our results employing one radiologist in 94% of cases and two endoscopists in 79% of cases with a median waiting time of 1 day from decision to implant a stent to stent implantation.

The general frailty of this patient group, who are often in the last few months of their lives, must be considered. A prompt and efficacious service to relieve the abhorrent symptoms of GOO with a short stay in hospital is of utmost importance to the quality of life of these patients.

Recording of the diet type according to a scoring system for GOO¹⁰ was not done owing to the early discharge of patients to community services. Our practice is to discharge all patients home or to community-based care as soon as they are stable. The type of diet that patients can tolerate is of interest as an outcome in a study such as this. After implantation of a SEMS, it often takes a few days for patients to progress to a solid diet (if indeed they reach this milestone). We would advocate that, if appropriate, palliative services are available out of the hospital setting and that these services do not delay discharge from hospital.

We implant stents for all causes of malignant GOO (with the exception of linitis plastica, which is viewed as a relative contraindication) in patients sufficiently stable to undergo the procedure. If this policy is adopted, some patients will not survive to hospital discharge but will be allowed to die with dignity. The proximity of this service to patients' homes can also be a significant factor for patients. For frail patients in pre-terminal decline, a long journey to a regional cancer centre is not without risk. If we accept that it is not good practice to move potentially dying palliative patients further from their family, we again find evidence that in this case that centralisation of service is not the best model.

Conclusions

We demonstrated that it is possible to run a prompt and safe palliative stenting service for patients with malignant GOO outside a teaching hospital or centre specialising in resection of tumours of the upper GI tract. Therefore, we suggest that it should be the norm to provide this service at a local level to deliver optimal patient-centred care.

References

1. Del Piano M, Ballarè M, Montino F *et al.* Endoscopy or surgery for malignant GI outlet obstruction? *Gastrointest Endosc* 2005; **61**: 421–426.
2. Khashab M, Alawad AS, Shin EJ *et al.* Enteral stenting versus gastrojejunostomy for palliation of malignant gastric outlet obstruction. *Surg Endosc* 2013; **27**: 2,068–2,075.
3. Ly J, O'Grady G, Mittal A, Plank L, Windsor JA. A systematic review of methods to palliate malignant gastric outlet obstruction. *Surg Endosc* 2010; **24**: 290–297.
4. Tringali A, Didden P, Repici A *et al.* Endoscopic treatment of malignant gastric and duodenal strictures: a prospective, multicenter study. *Gastrointest Endosc* 2014; **79**: 66–75.
5. Canena JM, Lagos AC, Marques IN *et al.* Oral intake throughout the patients' lives after palliative metallic stent placement for malignant gastroduodenal obstruction: a retrospective multicentre study. *Eur J Gastroenterol Hepatol* 2012; **24**: 747–755.

6. Dormann A, Meisner S, Verin N, Wenk Lang A. Self-expanding metal stents for gastroduodenal malignancies: systematic review of their clinical effectiveness. *Endoscopy* 2004; **36**: 543–545.
7. Jeurnink SM, van Eijck CH, Steyerberg EW, Kuipers EJ, Siersema PD. Stent versus gastrojejunostomy for the palliation of gastric outlet obstruction: a systematic review. *BMC Gastroenterol* 2007; **7**: 18.
8. Roy A, Kim M, Christein J, Varadarajulu S. Stenting versus gastrojejunostomy for management of malignant gastric outlet obstruction: comparison of clinical outcomes and costs. *Surg Endosc* 2012; **26**: 3,114–3,119.
9. Chandrasegaram MD, Eslick GD, Mansfield CO *et al*. Endoscopic stenting versus operative gastrojejunostomy for malignant gastric outlet obstruction. *Surg Endosc* 2012; **26**: 323–329.
10. Piesman M, Kozarek RA, Brandabur JJ *et al*. Improved oral intake after palliative duodenal stenting for malignant obstruction: a prospective multicenter clinical trial. *Am J Gastroenterol* 2009; **104**: 2,404–2,411.