Survival and clinical outcome after endoscopic duodenal stent placement for malignant gastric outlet obstruction: comparison of pancreatic cancer and nonpancreatic cancer

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Background: Data on endoscopic stenting of malignant gastric outlet obstruction (GOO) are based on studies predominantly involving patients with pancreatic adenocarcinoma.

Objective: To compare survival and clinical outcome after stent placement for GOO due to pancreatic cancer compared with nonpancreatic cancer.

Design: Retrospective study.

Setting: Single tertiary hospital.

Patients: A total of 292 patients with malignant GOO.

Intervention: Stent placement.

Main Outcome Measurements: Post–stent placement survival and clinical outcome.

Results: In 196 patients with pancreatic cancer and 96 with nonpancreatic cancer, median post–stent placement survival was similar (2.7 months in pancreatic cancer vs 2.4 months in nonpancreatic cancer). Overall survival was shorter in patients with pancreatic cancer (13.7 vs 17.1 months; $P = .004$). Clinical success rates at 2 months (71% vs 91%) and reintervention rates (30% vs 23%) were comparable. Post–stent placement chemotherapy and the absence of distant metastasis were associated with better post–stent placement survival in both groups (pancreatic cancer: chemotherapy vs no chemotherapy, 5.4 vs 1.5 months, $P < .0001$; metastasis vs no metastasis, 1.8 vs 4.6, $P = .005$; nonpancreatic cancer: chemotherapy vs no chemotherapy, 9.2 vs 1.8, $P = .001$; metastasis vs no metastasis, 2.1 vs 6.1, $P = .009$).

Limitations: Retrospective study.

Conclusions: In this large series of patients undergoing stent placement for malignant GOO in North America, we observed no difference in post–stent placement survival despite better overall survival in patients with nonpancreatic cancer. GOO is a marker for poor survival in malignancy, regardless of the type. Chemotherapy and the absence of distant metastasis were associated with better post–stent placement survival in both groups. (Gastrointest Endosc 2015;82:460-8.)

Abbreviation: GOO, gastric outlet obstruction.

DISCLOSURE: *Dr Kozarek is a consultant for Taewoong. All other authors disclosed no financial relationships relevant to this article.*

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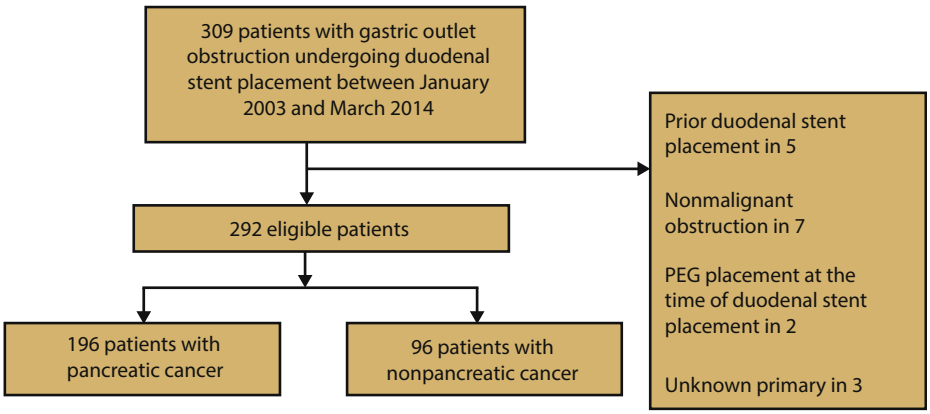

Figure 1. Algorithm for patient inclusion and exclusion.

Malignant gastric outlet obstruction (GOO) complicates 20% to 30% of periampullary malignancies[1] and 2% to 25% in patients with pancreatic cancer.[2-6] It may also result from invasion and growth of upper abdominal carcinomatosis or metastases from advanced extra-abdominal cancer. Symptoms of GOO include abdominal pain, nausea, vomiting, early satiety, and weight loss and can be quite debilitating and difficult to control, especially in the setting of concurrent malignant gastroparesis. It often results in a significant delay in oncologic treatment, poor nutrition, and even death. Palliative treatment of GOO includes endoscopic duodenal stent placement, surgical bypass of the obstruction, and decompressive gastrostomy (with or without feeding tube placement).[7] Endoscopic stent placement is considered the most appropriate palliative treatment in elderly patients with prohibitive surgical risk.

With the advent of new oncologic therapies, there has been a steady increase (albeit small) in the life expectancy of patients with pancreatic adenocarcinoma. Two pivotal trials recently demonstrated a survival benefit of combination gemcitabine and nab-paclitaxel[8] and FOLFIRINOX (combination of fluorouracil, irinotecan, and oxaliplatin)[9] compared with gemcitabine alone. Chemoradiation has also shown modest survival benefit in patients with locally advanced pancreatic cancer.[10] It is likely that clinicians will encounter more patients who will survive longer and manifest with late adverse events of advanced malignancy, including GOO. Recently, a retrospective study reported that 38% of patients with pancreatic cancer receiving chemotherapy with or without radiation required duodenal stent placement or surgical bypass for GOO, higher than previously reported.[11]

On the other hand, there are relatively limited data on the natural history and survival of GOO secondary to malignancy other than pancreatic adenocarcinoma in the Western population. Given the poor overall survival and aggressive tumor biology of pancreatic cancer, we hypothesized that survival and clinical outcome in patients with pancreatic cancer after duodenal stent placement would be worse compared with nonpancreatic cancer. Our aim was to compare survival and clinical response after duodenal stent placement for GOO in patients with pancreatic cancer and those with nonpancreatic cancer.

METHODS

Between January 2003 and March 2014, patients undergoing EGD with placement of a self-expandable metal stent for GOO secondary to malignant disease at a single tertiary referral center were retrospectively identified through electronic medical records and billing databases by using the International Classification of Diseases, 9th ed., diagnostic codes and the Current Procedural Terminology codes. Patients with histological evidence of pancreatic adenocarcinoma were included in the pancreatic cancer group. Malignancies arising from elsewhere and neuroendocrine tumors of the pancreas (which are typically slow growing and less aggressive compared with adenocarcinoma) were classified as having nonpancreatic cancer. Patients were excluded from the study if they had GOO because of a nonmalignant condition (eg, adverse events of bariatric surgery), a duodenal stent placed before referral, a decompressive gastrostomy (with or without feeding tube) placed before or at the time of duodenal stent placement, or their malignancy was of unknown origin (Fig. 1). Demographic details, clinical progress, and endoscopy findings were obtained from electronic medical records. The level of the obstruction was defined as types I, II, and III, as previously published, with types I and III obstructions proximal and distal to the papilla, respectively, and type II involving the papilla.[12] The actual date of death was confirmed in all patients by assessing the cancer registry.

Primary outcome measures were survival after duodenal stent placement and clinical success defined as the ability to maintain adequate oral intake without reintervention (endoscopic stent placement, endoscopic balloon dilation, enteral feeding tube, total parenteral nutrition and/or bypass