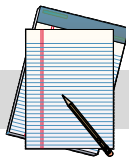

Prophylactic Gastroenterostomy for Unresectable Pancreatic Carcinoma

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Carcinoma of the pancreas is the fourth leading cause of cancer-related death in western countries [1]. It remains a disease with a grim prognosis: less than 20% of affected individuals survive 1 year after receiving the diagnosis of pancreatic carcinoma, and less than 3% survive 5 years [2,3]. The majority of patients are not resectable for cure at the time of presentation. Once the pancreatic tumor is determined to be unresectable – either by preoperative testing or by intraoperative inspection – the median survival is approximately 8 months [1,4]. The principal goal of surgical therapy in these patients is palliation of the carcinoma's major symptoms: persistent nausea and vomiting from duodenal obstruction, pruritis and liver failure from biliary obstruction, and intractable pain related to the extensive tumor invasion of the celiac ganglion.

Palliation may be achieved by endoscopic, laparoscopic and surgical approaches. The decision to select one or more of the options depends on the patient's symptoms, overall health status, projected survival, and the expected procedure-related morbidity and mortality [5].

The endoscopic approach consists of biliary drainage and duodenal stenting with metallic stents and/or duodenal self-expandable endoprostheses [1,6]. Some endoscopists have also experimented with endoscopic ultrasound-guided celiac plexus block [7]. The surgical approach includes gastrojejunostomy, hepatoenterostomy and ablation of the celiac plexus. The major advantage of classic surgical palliation is the ability of a single procedure to combine adequate long-term palliation for all three primary symptoms. Laparoscopic (minimally invasive) techniques have been developed to effect biliary and enteral bypass; these modalities offer earlier discharge from the hospital and cause minimal incisional pain [8–11].

Several recent reports question the role of surgery for patients with unresectable pancreatic carcinoma. Most agree that gastrojejunostomy is beneficial in symptomatic patients, but many disagree with the universal application of prophylactic gastric bypass [12,13].

Reports by Cameron and colleagues [14,15] from Johns Hopkins Hospital in Baltimore emphasize the classical surgical teachings. In a randomized controlled study of 87 patients with unresectable pancreatic carcinoma but no sign of duodenal obstruction at exploratory laparotomy, 44 were assigned to prophylactic gastrojejunostomy. Eight of the remaining 43 patients (19%) required a surgical procedure for relief of duodenal obstruction at a mean of 2 months after the original laparotomy. There was no difference in survival (mean 8 months) or morbidity between the two groups. Three other large series have assessed the role of prophylactic gastrojejunostomy, and in none did the performance of a bypass procedure at the original operation increase mortality or morbidity. The authors uniformly advocate routine prophylactic bypass [13,16,17].

In contrast, Brennan and coworkers [18,19] from Memorial Sloan-Kettering Cancer Center, New York, maintain that unresectable pancreatic adenocarcinoma rarely requires surgical gastric bypass. In a series of 155 patients with unresectable disease but no signs of duodenal obstruction, only 3 (2%) subsequently required a procedure for relief of symptoms. Their reports demonstrate that performing a prophylactic gastrojejunostomy increases postoperative morbidity, leads to delayed gastric emptying, and prolongs hospital stay without affecting patient survival – even if the procedure is performed laparoscopically. The Brennan group reserves this procedure for symptomatic patients. Other groups in the USA and Europe [8,9,20–23] have adopted a similar minimally invasive approach, and report shortened postoperative hospital stays and rapid return to normal daily functioning.

The major argument against prophylactic gastrojejunostomy is that it may be unnecessary. Patients with clear preoperative evidence of metastatic disease are best served with endoprosthetic stenting. Only those patients who suffer from duodenal obstruction truly require a gastrojejunostomy. With the rapid progression of minimally invasive surgery, we expect that laparoscopic gastrojejunostomy will become the preferred approach to palliation.

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