How I do it — Necrosectomy in acute pancreatitis. Open drainage with diverting ileostomy for acute necrotizing pancreatitis

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Abstract: Infected pancreatic necrosis which spreads extensively in the retroperitoneal space requires open drainage to prevent the formation of residual abscess. With open drainage and repeated debridement, we often encountered patients who suffered from abdominal complications such as prolapse of the small intestine through the wound and injury to the intestine. In order to improve the open drainage method, we combined diverting ileostomy with open drainage. Diverting ileostomy was effective in decompressing the small intestine; this prevented prolapse and reduced the incidence of paralytic ileus. Prophylactic diverting ileostomy appears to result in the reduction of complications during open drainage and has advantages in the subsequent management of critically ill patients with infected pancreatic necrosis.

Key words: necrosectomy, open drainage, diverting ileostomy

Introduction

Since the 1980s, open drainage has been used for acute necrotizing pancreatitis accompanied by infection;1,2 this innovation has led to increases in the number of lives saved. When the infection is limited to the pancreas or the peripancreatic area, necrosectomy and “closed lavage” after the closure of the operative wound are sufficient.3 However, when the infected pancreatic necrosis spreads extensively in the retroperitoneal cavity, necrosectomy alone is insufficient to remove the dead tissue, and open drainage becomes imperative, to avoid the formation of a residual abscess. However, when open drainage alone is employed, troublesome complications often result, such as intractable enteric fistula and prolapse of the intestine. In order to improve open drainage management, the authors employed diverting ileostomy together with open drainage.

Surgical procedures

The extent of the hemorrhagic and necrotic tissue around the pancreas varies from patient to patient. We routinely attempt to avoid pancreatic resection whenever possible; therefore, resection for infected necrotizing pancreatitis is indicated only when total necrosis of the pancreatic tail or body is detected by contrast computed tomography (CT).

Skin incision

Laparotomy should be done with a wide subcostal (roof-top) transverse incision. The greater omentum and transverse colon, thrusting upwards from the retroperitoneal cavity, will appear. When the gastrocolic ligament is cut and opened widely from left to right, the hemorrhagic and necrotic tissue around the pancreas will be seen immediately below. Often there is a considerable accumulation of brownish-black turbid exudate in the lesser sac.

Necrosectomy

After the extent of hemorrhagic and necrotic tissue in the head, body, and tail of the pancreas is determined, and after the celiac artery and mesenterial radix have been identified, necrosectomy is begun. The hemorrhagic and necrotic tissues are removed with forceps, as shown in Fig. 1. As the firm cords encountered in the tissue are often vessels, care is taken not to injure them. Even though there may be extensive
peripancreatic necrosis, often most of the pancreatic parenchyma remains intact, and in that case the pancreas should be left alone. To reduce bleeding, it is wise to leave the removal of hemorrhagic and necrotic tissue until debridement is carried out.

Ileostomy

A 4- to 5-cm-long incision is made along the skin crease of the right lower abdomen, and the fascia is opened by a longitudinal incision at right angles to the skin wound. After the abdominal cavity is opened, the terminal ileum, about 15 cm away from the ileocecal valve, is pulled out of the wound. As the intestine is drawn through the abdominal wall, care is taken to orient the proximal functioning loop in the inferior position. A plastic rod Ostomy bridge® (Cliny Co. Ltd. Tokyo, Japan) is placed through the mesentery, and the loop of intestine is then opened by making a three-fourths circumferential incision of the ileum, as shown in Fig. 2. Williams' procedure is followed and the longer portion of the ileum on the proximal side is everted, so that, after completion, the mucosa of the ileum is protruding above the skin surface (Fig. 3).

Open drainage

Finally, the upper abdominal operative wound is washed with plenty of warm normal saline, silicone gauze is spread between the stomach and the transverse mesocolon to cover the area, and open packing is done between them (Fig. 4). A drain is inserted into the Douglas’ cul-de-sac and an ileostomy appliance Lapac® (Tokyo Eisai Co. Ltd. Tokyo, Japan) is applied to the ileostomy. Repeated lavage and wound debridement can be done postoperatively, in the ward, using continuous epidural anesthesia.

Results

Open drainage

Between January, 1988 and February, 1992, 11 patients (4 females and 7 males) with acute necrotizing pancreatitis were treated by open drainage. The mean age of the patients was 50 years (range, 35–63 years). The prognostic signs described by Ranson et al. were used to evaluate the severity of acute pancreatitis; the average score was 5.3 points (4–7 points). Nine patients developed multiple organ failure and all patients had sepsis. Extrapancreatic necrotic areas were found in 10 patients, 7 patients had a necrosis in the pararenal space, and 3 had a necrosis in the small