นิพนธ์ต้นฉบับ

Treatment of infected pancreatic necrosis by open drainage and frequent debridement.

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Four consecutive cases of infected pancreatic necrosis were treated by deroofing of the lesser sac and supracolic retroperitoneum debridement of pancreatic sequestrum and necrotic soft tissue followed by open gauze packing of the lesser sac. Further debridement and changes of packing were carried out at an interval of 2-3 days under G.A. (range 7-13 times).

Parenteral nutrition was given to all patients.

There was no mortality. All wound healed by second intention. Complications included 2 cases of pancreatic fistula and one case of colonic fistula.

Adequate sequestrectomy with open packing followed by frequent debridement and changes of packing appeared to be effective in the management of infected pancreatic necrosis.

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เจษฎา แสงสุพรรณ, ทวีสิน ตันประยูร, ชาญวิทย์ ตันติ์พิพัฒน์. การรักษาโรคตับอ่อนตายและติดเชื้อโดยวิธีผ่าตัดเปิดช่องท้องทิ้งไว้เพื่อระบายของเสีย. จุฬาลงกรณ์เวชสาร 2533 ธันวาคม; 34(12): 931-937

คณะผู้รายงานได้ผ่าตัดรักษาผู้ป่วย 4 รายที่เป็นโรคตับอ่อนตายและติดเชื้อ โดยการผ่าตัดเปิดช่องท้อง เปิดที่ lesser sac และส่วน retroperitoneum ที่เหนือลำไส้ใหญ่ ตัดเอาเนื้อตับอ่อนที่ตายรวมทั้งเนื้อเยื่อรอบข้างที่ตายเนื่องจากตับอ่อนอักเสบออกด้วย หลังจากนั้นใช้ผ้าซับผืนใหญ่ใส่ไว้ในโพรงที่เอาเนื้อตายออกแล้วจนเต็มถึงแผลผ่าตัดหน้าท้องและเปิดช่องท้องทิ้งเอาไว้ หลังจากนั้นทำการผ่าตัดเปลี่ยนผ้าซับใหม่รวมทั้งการเอาเนื้อตายออกอีก โดยเฉลี่ยทำเช่นนี้ 2 - 3 วันต่อครั้งและดมยาสลบแบบ G.A (ผ่าตัดทั้งหมดระหว่าง 7 - 13 ครั้ง)

ผู้ป่วยทุกรายได้รับการให้อาหารทางเส้นเลือดดำ

ผลการรักษาไม่มีผู้เสียชีวิตเลย แผลหายโดย second intention มีผลแทรกซ้อนจากการรักษา 2 รายได้แก่ Pancreatic fistula 2 ราย และ Colonic fistula 1 ราย

การรักษาด้วยการเอาเนื้อตายออกให้เพียงพอเปิดช่องท้องเพื่อระบายและทำแผลบ่อย ๆ นั้น ดูเหมือนว่าจะเป็นวิธีการรักษาที่ได้ผลสำหรับโรคตับอ่อนตายและติดเชื้อ

Pancreatic abscess, a serious complication of pancreatitis, is found in 2-6 percent of acute cases.[1,2] It is due mainly to the presence of necrosis and inflammation of the pancreatic substance and the surrounding tissue. Infection is often present giving rise to infected pancreatic necrosis[3] (IPN).

The orthodox treatment of infected pancreatic necrosis (IPN) is a combination of anterior coeliotomy, debridement of pancreatic necrosis and close drainage.[4] The mortality is, however, still very high, ranging from 30-60 percent.[5-9] Some authorities have, therefore; treated this condition with a laparotomy and excision of the necrotic pancreatic tissue. The abdomen is left unclosed, so that washing and removal of necrotic tissue can be repeated that is (open lesser sac drainage and frequent debridement). With this form of management the mortality has been reduced from 44 to 14 percent,[10] and from 33 to 9 percent[11] in two series.

We report four consecutive cases of infected pancreatic necrosis (IPN) teated with open lesser sac drainage and frequent debridement, from 1985 to 1988.

Patients and method

Between 1985-1988, within the department of surgery, the G.4 unit treated four patients with infected pancreatic necrosis with open lesser sac drainage and frequent debridement. Details of the four patients are included in table 1.

Table 1. Details of four patients who developed IPN and were treated by open lesser sac drainage and frequent debridement.

	Case Number			
	1	2	3	4
Age	20	41	62	63
Sex	M	M	M	F
Wbc (/ mm^3)	12,800	17,000	15,600	16,200
Serum amylase (iu)	1,939	2,995	12,000	13,000
Plasma glucose (mg %)	68	194	329	220
Serum calcium (mg %)	9.2	6.2	7.9	8.0
SGOT (IU)	24	127	22	66
BUN (mg %)	12	50	9	10
Causes	**trauma**	**alcohol**	**alcohol**	**unknown**

All of these patients had developed acute pancreatitis from various causes. Alcohol seemed to be the major cause. The second, third and fourth cases were more severe probably because of age, low serum calcium (less than 8 mg%), leukocytosis over 15,000 cell/mm3 and high level of serum amylase. However there was inadequate data to strongly support this evidence.

Criteria for the diagnosis of IPN.[1-3]

1. The presence of greyish black pancreatic tissue.
2. Necrosis of tissues surrounding the pancreas; this may include the paracolic area and mesentry.
3. Necrosis involving more than 50 percent of the pancreas.
4. The presence of cloudy fluid or pus in the lesser sac.
5. The presence of micro-organisms (confirmed by gram staining or culture.)

The diagnosis of IPN. should include all of the above criteria.

Diagnosis of IPN.[1-3]

The patients were admitted with the diagnosis of acute pancreatitis and were treated in the department of medicine. Initially, their conditions were satisfactory but the patients subsequently developed high fever, abdominal pain, a palpable abdominal mass and septicemia. All four patients had CT-scan to confrim the diagnosis of IPN (Fig. 1). Fluid from the lesser sac of the fourth patient (Fig. 2) was taken for gram staining and culture.

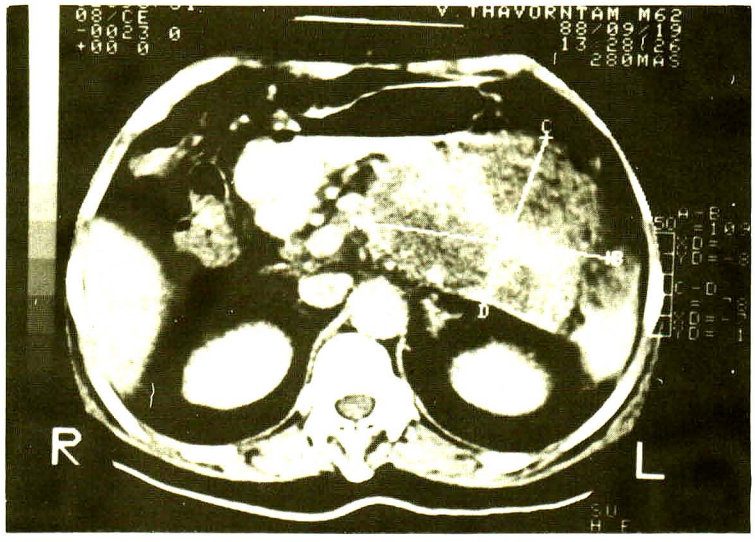

Figure 1. C.T. Scan of the third patient showed necrosis of body and tail of pancrease. Necrosis was extended along left kidney and colon.

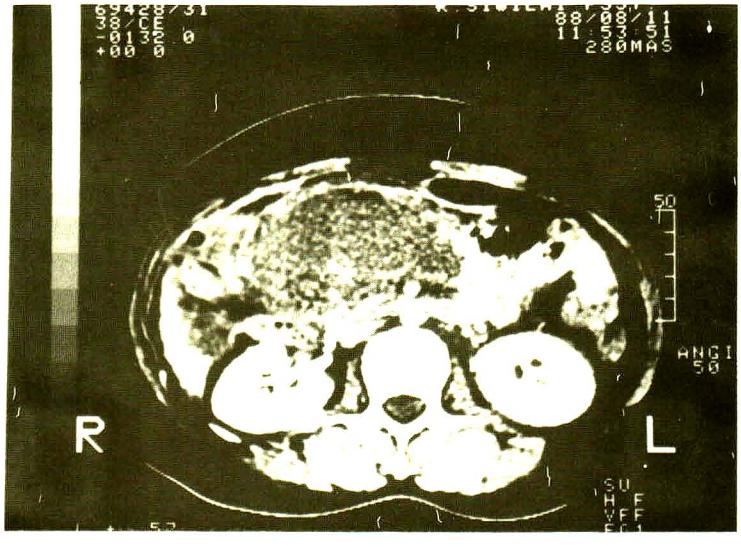

Figure 2. C.T. Scan of the fourth patient showed extensive necrosis of pancreas. (nearly entire pancreas).

Surgical procedure

Each patient had an exploratory laparotomy, the first and second patients through an upper midline incision, the other two through an upper transverse incision. The lesser sac was entered through the gastrocolic ligament. In the first and second patients, necrosis involving the pancreas and the surrounding areas extended into the retroperitoneum around the left kidney and descending colon. The third and forth patients showed necrosis of the pancreas, extending into the mesentery. In all cases, pancreatic sequestrectomy was performed as well as extensive debridement. The procedure included opening the retroperitoneum and removal of dead tissues. The operative field was extensively washed with saline. The lesser sac and the retroperitoneum were packed with gauze soaked in saline. The abdomen was not closed but temporarily bound. Every 2-3 days the patients were returned to the operating theatre, and, under general anasthesia, the gauze packs were changed. Necrotic tissues were also excised. The changes of packs and debridement were repeated until the wound was clean, and allowed to heal by secondary tention.

Results.

There was no mortality in all four patients who had open lesser sac drainage and frequent debridement.

The following complications occured :

1. Pancreatic fistula (2 patients)
2. Colonic fistula (1 patient)

All fistulae closed spontaneously.

The patients had 5,6,7, and 13 operation respectively (mean of 7.75) and stayed in hospital for 101, 126, 51 and 105 days (mean of 95.75)

All patients were in the intensive care unit received antibiotics covering both gram positive and negative organisms and were fed intravenously (TPN). Intravenous feeding lasted 16, 44, 30 and 32 days respectively (mean 30.5)

The results of lesser sac culture are shown in table 2.

In all cases the abdominal wounds closed spontaneously by second intention. Fig. 3 shows the clinical picture of the fourth patient while in hospital.

Table 2. Organisms discovered on culture of IPN.

	Case Number			
	1	2	3	4
Klebsiella	+		+	
E. Coli		+	+	
Enterobacter		+		
Pseudomonas	+	+		
Acinatobacter				+
Anaerobic				+

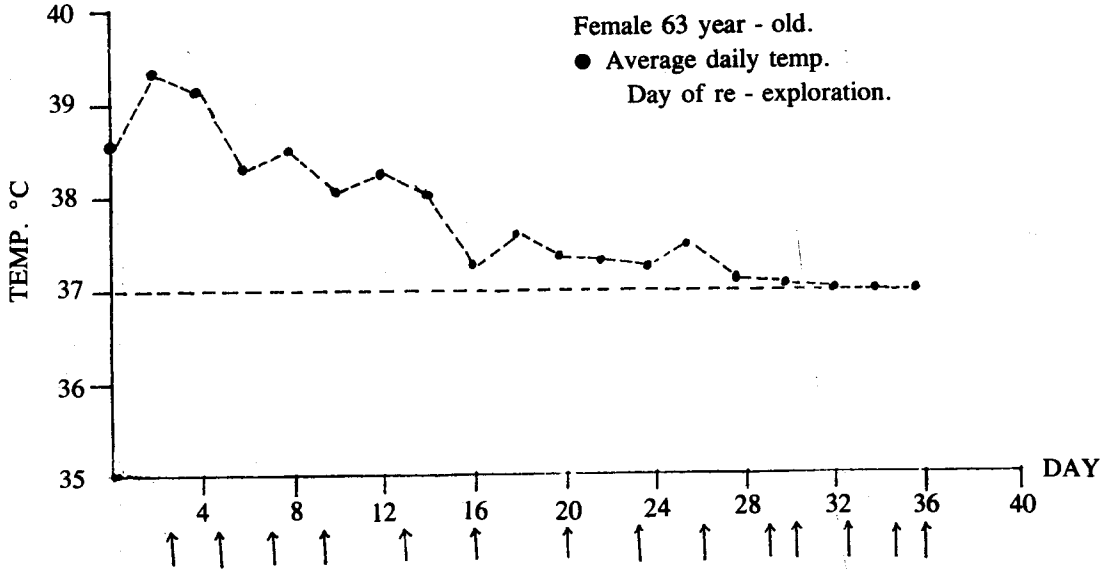

Figure 3. Hospital course of recent patient.