TABLE 371-4 COMPLICATIONS OF ACUTE PANCREATITIS

Local
Necrosis
Sterile
Infected
Walled-off necrosis
Pancreatic fluid collections
Pancreatic pseudocyst
Disruption of main pancreatic duct or secondary branches
Pancreatic ascites
Involvement of contiguous organs by necrotizing pancreatitis
Thrombosis of blood vessels (splenic vein, portal vein)
Pancreatic enteric fistula
Bowel infarction
Obstructive jaundice
Systemic
Pulmonary
Pleural effusion
Atelectasis
Mediastinal fluid
Pneumonitis
Acute respiratory distress syndrome
Hypoxemia (unrecognized)
Cardiovascular
Hypotension
Hypovolemia
Nonspecific ST-T changes in electrocardiogram simulating myocardial infarction
Pericardial effusion
Hematologic
Disseminated intravascular coagulation
Gastrointestinal hemorrhage
Peptic ulcer disease
Erosive gastritis
Hemorrhagic pancreatic necrosis with erosion into major blood vessels
Portal vein thrombosis, splenic vein thrombosis, variceal hemorrhage
Renal
Oliguria (<300 mL/d)
Azotemia
Renal artery and/or renal vein thrombosis
Acute tubular necrosis
Metabolic
Hyperglycemia
Hypertriglyceridemia
Hypocalcemia
Encephalopathy
Sudden blindness (Purtscher's retinopathy)
Central nervous system
Psychosis
Fat emboli
Fat necrosis
Subcutaneous tissues (erythematous nodules)
Bone
Miscellaneous (mediastinum, pleura, nervous system)

A step-up approach (percutaneous or endoscopic transgastric drainage followed, if necessary, by open necrosectomy) has been successfully reported by some pancreatic centers. One-third of the patients successfully treated with the step-up approach did not require major abdominal surgery. A recent randomized trial reported advantages to an initial endoscopic approach compared to an initial surgical necrosectomy approach in select patients requiring intervention for symptomatic WON. Taken together, a more conservative approach to the management of infected pancreatic necrosis has evolved over the years under the close supervision of a multidisciplinary team. If conservative therapy can be safely implemented for 4–6 weeks, to allow the pancreatic collections to resolve or "wall-off," surgical or endoscopic intervention is generally much safer and better tolerated by the patient.

PSEUDOCYST The incidence of pseudocyst is low, and most acute collections resolve over time. Less than 10% of patients have persistent fluid collections after 6 weeks that would meet the definition of a pseudocyst. Only symptomatic collections should be drained with surgery or endoscopy or by percutaneous route.

PANCREATIC DUCT DISRUPTION Pancreatic duct disruption may present with symptoms of increasing abdominal pain or shortness of breath in the setting of an enlarging fluid collection. Diagnosis can be confirmed on magnetic resonance cholangiopancreatography (MRCP) or ERCP. Placement of a bridging pancreatic stent for at least 6 weeks is >90% effective at resolving the leak. Nonbridging stents are less effective.

PERIVASCULAR COMPLICATIONS Perivascular complications may include *splenic vein thrombosis* with gastric varices and pseudoaneurysms. *Gastric varices* bleed less than 5% of the time. Life-threatening bleeding from a ruptured *pseudoaneurysm* can be diagnosed and treated with mesenteric angiography and embolization.

EXTRAPANCREATIC INFECTIONS Hospital-acquired infections occur in up to 20% of patients with acute pancreatitis. Patients should be continually monitored for the development pneumonia, urinary tract infection, and line infection. Continued culturing of urine, monitoring of chest x-rays, and routine changing of intravenous lines are important during hospitalization.

Follow-Up Care Hospitalizations for moderately severe and severe acute pancreatitis can last weeks to months and often involve a period of intensive care unit admission and outpatient rehabilitation or subacute nursing care. Follow-up evaluation should assess for development of diabetes, exocrine insufficiency, recurrent cholangitis, or development of infected fluid collections. As mentioned previously, cholecystectomy should be performed within 4–6 weeks of discharge if possible for patients with uncomplicated gallstone pancreatitis.

RECURRENT PANCREATITIS

Approximately 25% of patients who have had an attack of acute pancreatitis have a recurrence. The two most common etiologic factors are alcohol and cholelithiasis. In patients with recurrent pancreatitis without an obvious cause, the differential diagnosis should encompass occult biliary tract disease including microlithiasis, hypertriglyceridemia, drugs, pancreatic cancer, pancreas divisum, and cystic fibrosis (Table 371-1). In one series of 31 patients diagnosed initially as having idiopathic or recurrent acute pancreatitis, 23 were found to have occult gallstone disease. Thus, approximately two-thirds of patients with recurrent acute pancreatitis without an obvious cause actually have occult gallstone disease due to microlithiasis. Genetic defects as in hereditary pancreatitis and cystic fibrosis mutations can result in recurrent pancreatitis. Other diseases of the biliary tree and pancreatic ducts that can cause acute pancreatitis include choledochocele; ampullary tumors; pancreas divisum; and pancreatic duct stones, stricture, and tumor. Approximately 2–4% of patients with pancreatic carcinoma present with acute pancreatitis.

PANCREATITIS IN PATIENTS WITH AIDS

The incidence of acute pancreatitis is increased in patients with AIDS for two reasons: (1) the high incidence of infections involving the pancreas such as infections with cytomegalovirus, *Cryptosporidium*, and the *Mycobacterium avium* complex; and (2) the frequent use by patients with AIDS of medications such as didanosine, pentamidine,