10 Acute Pancreatitis: Complications

10.1 Local Complications

Local complications are those that involve the pancreas or peripancreatic area. Local complications include acute fluid collections, pancreatic necrosis, acute pseudocyst, and pancreatic abscess (Table 10.1).

Table 10.1. Local complications of acute pancreatitis

- Acute fluid collections
- Pancreatic necrosis
- Acute pseudocyst
- Pancreatic abscess

The Atlanta symposium held in 1992 reviewed and updated definitions of these local complications [22]. The following information represents a synthesis of the conclusions of this symposium correlated with other important information pertaining to these entities.

10.1.1 Acute Fluid Collection

Acute fluid collections are collections of enzyme-rich pancreatic juice [6, 22, 43]. They occur early in approximately 30%-50% of cases of acute pancreatitis and resolve spontaneously in the majority. On computed tomography (CT) scan, an acute fluid collection appears as low attenuation, poorly marginated collections of fluid with no recognized capsule (Fig. 10.1 a, b). Most acute fluid collections develop at the periphery of the gland in the anterior pararenal space. From this location, a fluid collection may extend to the posterior pararenal space, the lesser sac, the peritoneal cavity, and even the mediastinum. Occasionally, fluid collections are intrapancreatic and appear as one or more very small areas of low attenuation.

A fluid collection that persists eventually becomes encapsulated and after 4–6 weeks is properly termed a pseudocyst.
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Fig. 10.1 a. Interstitial pancreatitis. Dynamic contrast-enhanced CT scan performed on a 53-year-old woman with pancreatitis secondary to hypertriglyceridemia reveals somewhat diminished and heterogeneous enhancement of the pancreas (oblique arrows). The pancreatic margins are ill-defined. There is extensive peripancreatic fluid extending into the lesser sac (curved arrow) and into the porta hepatis (arrowhead). This appearance is consistent with severe interstitial pancreatitis with a severity score of 4 (4 points for grade E and 0 points for necrosis).

10.1.2 Pancreatic Necrosis

According to the Atlanta symposium, pancreatic necrosis is best defined as a process characterized by diffuse or focal areas of nonviable pancreatic parenchyma, usually associated with peripancreatic fat necrosis as well [22]. The determination whether a patient has interstitial or necrotizing pancreatitis can be made by dynamic contrast-enhanced CT scan [6, 8, 19, 25, 43, 85] (Fig. 10.1 a, b; see also Sect. 9.3 and Figs. 9.4, 9.5, 9.7, 9.8).

The clinician has several methods of determining on contrast-enhanced CT scan whether there are areas of necrosis. First, a well marginated zone of nonenhanced pancreatic parenchyma can readily be distinguished by visual inspection from surrounding well-perfused, uniformly enhancing parenchyma. Second, the clinician can make a visual comparison of pancreatic and splenic densities, which normally are similar. The liver should not be used for this comparison because if it contains a substantial amount of fat, the overall density of this organ is reduced. Third, the clinician can ask the radiologist to put a cursor over areas of suspected necrosis and determine the density of tissue in Hounsfield units. In general, the density of normal pancreatic paren-