## H62 A Fatal Case of Chemical Peritonitis Caused by a Spontaneous Rupture of the Pancreatic Pseudocyst: A Forensic Approach

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**Learning Overview:** The goal of this presentation is to examine the clinical and histopathological aspects of a fatal case of chemical peritonitis due to spontaneous rupture of the pancreatic pseudocyst in a patient with pancreatic adenocarcinoma.

**Impact on the Forensic Science Community:** This presentation describes a patient with pancreatic adenocarcinoma presented with spontaneous rupture of the pancreatic pseudocyst. This coexisting condition is difficult to diagnose, and prognosis remains poor despite the advances in technology. This presentation will impact the forensic science community by describing the necessity for an accurate autopsy to preserve the surgical field and assess the cause of death in a malpractice claim.

A pancreatic pseudocyst is a localized fluid collection that is rich in pancreatic enzymes, such as amylase, and is enclosed by a wall of fibrous tissue that is not lined by epithelium. The lack of epithelial lining distinguishes pseudocysts from other cystic pancreatic lesions. Pseudocysts are linked with the pancreatic duct system, either via direct communication or indirectly via the pancreatic parenchyma.[1] Regardless of the etiology of the pseudocyst, the incidence is low, ranging from 1.6%–4.5% in adults.[2] Pseudocysts are most commonly detected after pancreatitis or trauma and are associated with alcoholism and gallbladder disease. Spontaneous perforation and fistulization of pancreatic pseudocysts occur in fewer than 3% of cases.[2,3] Spontaneous rupture of pancreatic pseudocysts and/or fistulization has been reported in the stomach, duodenum, biliary tract, renal collecting system, colon, bronchial tree, and peritoneal surface.[3] Chemical peritonitis is another possible pseudocyst complication that can arise due to inflammation of the peritoneum caused by rupture of an abdominal organ. Symptoms may include severe pain, swelling of the abdomen, fever, or weight loss. Complications may include shock and acute respiratory distress syndrome. Many potential causes exist, and the peritonitis may be classified as primary or secondary, local or diffuse, acute or chronic, or according to the causative agent.[4]

**Case Report:** A 37-year-old alcoholic male smoker was admitted to the hospital with a two-day history of fever, diarrhea, and recurrent vomiting. Laboratory tests showed an increase in pancreatic enzymes, anemia, thrombocytopenia, and hyperglycemia. He was admitted to the intensive care unit due to the worsening condition that same day, but ultimately died after two days. Due to relatives' claims of malpractice, the prosecutor's office ordered an autopsy. A complete autopsy was performed within four days. On internal examination, 400cc of brownish liquid was observed in the abdominal cavity. After the dissection of the peritoneal surface, a nodular pancreatic tail mass measuring 30mm in maximal dimension was appreciated. The cervical and thoracic organs were dissected via Gohn's technique (i.e., en bloc), and a Rokitansky modified technique was utilized for the gastrointestinal tract. After fixation, the 30mm pancreatic mass was further assessed and found to be connected with the pancreatic duct system. The peritoneal surface was sampled. Hematoxylin-Eosin (H&E) -stained sections of pancreatic parenchyma revealed a haphazard arrangement of glands, nuclear pleomorphism, incomplete glandular lumina, luminal necrosis, glands adjacent to muscular vessels, perineural invasion, lymphovascular invasion, and severe cytologic atypia (i.e., cytologic enlargement, hyperchromasia, loss of polarity, prominent nucleoli). Sections of the pancreatic mass showed a 1cm thick and calcified cyst wall, with a lack of epithelial lining. H&E-stained sections of the peritoneal surface showed an inflammatory reaction with associated neutrophils. Overall, the medical record data, complete autopsy, and macroscopic and microscopic pancreatic findings confirmed that the cause of death in this case was chemical peritonitis from spontaneous rupture of a pancreatic pseudocyst.

**Reference(s):**

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**Pancreatic Pseudocyst, Spontaneous Rupture, Pancreatic Adenocarcinoma**



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