Drainage of Pancreatic Pseudocyst and Walled-off Necrosis: Paradigm Shifted to Endoscopic Treatment Procedure

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Background: Pancreatic fluid collection (PFC: pancreatic pseudocyst and wall-off necrosis (WON)) are common complications of pancreatitis. In the past, either surgical or percutaneous drainage of symptomatic PFC and WON is the mainstay of treatment. However, in the last few years, paradigm of the treatment has been shifted to endoscopic drainage due to its higher efficacy and less invasiveness. Unfortunately, little information about outcome of endoscopic treatment is available.

Objective: To investigate natural history of the disease, efficacy, and treatment outcome of PFC in this current era.

Methods: This study was conducted in a university hospital. All patients diagnosed with pancreatitis between 2013 and 2016 were identified using hospital database. Data of patients with PFC including all relevant clinical parameters were retrospectively reviewed. We used the percentage for categorical data and median with interquartile range for continuous data. Clinical success was defined as an improvement of symptoms.

Results: There were a total of 636 patients with pancreatitis. Of these, 72 (11.3%) had PFC, including 55 (8.6%) and 17 (2.7%) with pseudocyst and WON, respectively. In those PFC patients, the etiologies of pancreatitis were alcohol (n=28, 38.9%), biliary tract stone (n=21, 29.2%), and idiopathic (n=9, 12.5%). Abdominal pain, fever, nausea/vomiting, and incidental findings were found in 40/72 (55.6%), 16/72 (22.2%), 13/72 (18.1%), and 26/72 (36.1%), respectively. Abdominal tenderness, palpable mass, fever, and no abnormal physical findings were noted in 40/72 (55.6%), 18/72 (25%), 15/72 (20.8%), and 25/72 (34.7%) patients, respectively. Thirty patients (41.7%) required drainage of PFC. Primary drainage procedures were endoscopy (20/30, 66.7%), percutaneous method (6/30, 20%), and surgery (4/30, 13.3%) with clinical success rate (CSR) of 100.0%, 50.0% and 100.0%, respectively. Complications were found in 3 patients who underwent percutaneous drainage, i.e. bleeding at procedural site which required surgical correction (n=1), infection (n=1), and pancreatic duct leakage needed for subsequent ERCP with pancreatic duct stent insertion. However, the percutaneous method had more percentage of patients with acute pancreatitis, WON, and multiple lesions than other groups.

Conclusion: Over the last 4 years, in a referral hospital, paradigm of treatment of PFC has shifted from surgical or percutaneous drainage to endoscopic drainage. The endoscopic drainage demonstrates high CSR; whereas, percutaneous method has the lowest CSR. Surgical drainage becomes the least common method despite its high CSR. When the drainage of PFC is indicated, we suggest endoscopic drainage as a mainstay of treatment where available.

Keywords: Pancreatitis, Pancreatic pseudocyst, Walled-off necrosis, Pancreatic collection, Endoscopic drainage
Patients with pancreatitis (n=636)
- Acute pancreatitis (n=546)
- Chronic pancreatitis (n=90)

Patients with PFC (n=72)

Pancreatic pseudocyst (n=19)
- Endoscope (n=13)
  Success 13/13 (100%)
- PCD (n=2)
  Success 1/2 (50%)
- Surgery (n=4)
  Success 4/4 (100%)

Walled-off necrosis (n=11)
- Endoscope (n=7)
  Success 7/7 (100%)
- PCD (n=4)
  Success 2/4 (50%)
- Surgery (n=4)