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PANCREATIC ABSCESSES;

TO DETERMINE THE SURGICAL OUTCOME, EFFECTIVENESS AND THE COMPLICATIONS OF COMPUTER TOMOGRAPHY GUIDED DRAINAGE.

ahmedaliakuh@gmail.com

Dr. Reeta Rani[1], Dr. Muhammad Arif uz Zaman[2], Dr Abdul Jabbar Mirani[3], Dr. Ahmed Ali Sheikh[4]

1. Consultant Radiologist, Jinnah Postgraduate Medical Centre Karachi.
2. Consultant Radiologist, Jinnah Postgraduate Medical Centre Karachi.
3. Consultant General Surgeon KVSS Site Hospital Karachi
4. Research Fellow Civil Hospital Karachi,

Correspondence Address:
Dr. Ahmed Ali,
Research Fellow Civil Hospital Karachi,
ahmedaliakuh@gmail.com

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ABSTRACT… Objectives: The objective of our study is to determine the surgical outcome, effectiveness and the complications of computer tomography guided drainage of pancreatic abscesses. **Study Design:** Descriptive case series. **Setting:** Tertiary care hospital in Karachi Pakistan. **Period:** Three years from November 2012 to October 2015. **Methods:** The patient population consisted of all those patients who were diagnosed as a case of pancreatic abscess both clinically and on radiographic analysis, and who had to have the computer tomography guided percutaneous drainage of the abscess. The drained fluid was sent for histopathologic and cytological analysis, and a drain was placed in the pancreatic tissue for further collection of the discharge material. Patients were followed for up to 40 days post operatively, and various complications were noted. **Results:** The patient population consisted of n=550 patients of acute pancreatitis, out of which n=30 (5.45%) were diagnosed cases of pancreatic abscess, out of these patients n=5 (16.67%) were males and n=25 (83.33%) were females, and the mean age of patients was 44 +/- 11 years. In n=24 (80%) of patients the abscess resolved completely in 20 to 40 days. N=5 (20%) of patients had complications and had to undergo laparotomy. **Conclusion:** According to the results of our study, the computer tomographic guided drainage of the pancreatic abscess is a very safe and effective procedure for the treatment of pancreatic abscess. The rate of complications is low, and patients show swift recovery post operatively.

Key words: Pancreatic abscess, acute pancreatitis, CT guided drainage, percutaneous drainage, abscess drainage, surgical outcome.

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INTRODUCTION

One of the late onset complications of acute pancreatitis is a pancreatic abscess, which is a collection of pus formed by the necrosis of pancreatic tissue either by liquefaction due to pancreatic enzyme or infections, its incidence is about 3% in patients with acute pancreatitis.[1] According to the Ranson criteria of staging of acute pancreatitis, there is less than 20% chance of a single pocket of collected fluid in the pancreas to become and abscess, however the chances of developing an abscess rises significantly if there are two or more than two pockets of fluids or gas within the pancreatic tissue.[1] The signs and symptoms of pancreatic abscess includes, fever with chills, an acute inability to eat with nausea and vomiting, abdominal mass. The following may be the causes of pancreatic abscess, peptic ulcers, alcohol, drugs and blunt trauma.[2,3] The radiographic modalities such as CT scan and MRI provide help in the diagnosis of pancreatic abscess, prophylactic antibiotics for organisms such as Enterococcus faecalis, Staphylococcus aureus, E.colu, Klebsiealla pneumonia, Streptococcus species, Proteus mirabilis, Pseudomonas aeruginosa may be helpful.[4] The Ct guided drainage of the abscess is considered ineffective when compared with open drainage, drainage of abscess being the recommended treatment. Endoscopic drainage is also gaining popularity. Complications may develop if the abscess is not drained in due time, such as sepsis, fistula and recurrent pancreatitis[2], which may result in failure of the organ and a up to 100% mortality rate.[3] For a sterile pancreatic abscess the mortality rate is 10% but may rise

up to 30% with an infection. If organ failure and infected necrosis of the pancreas is present at the same time, the mortality reaches up to 43%.[5,6] The aim of our study is to determine the outcome of CT guided drainage of the pancreatic abscess.

METHODS

The type of study is a descriptive case series, which took place at a tertiary care hospital in Karachi Pakistan, for a period of three years from November 2012 to October 2015. The patient population n=550 of acute pancreatitis out of which 30 patients were diagnosed as a case of pancreatic abscess both clinically and on radiographic analysis, and who had to have the computer tomography guided percutaneous drainage of the abscess. Patients who had pancreatitis due to trauma and younger than 12 years of age were excluded. Patients laboratory tests including the serum amylase and lipase levels were sent. The Ranson criteria and Bathazar scoring system were used to assess the severity of pancreatitis. Various complications of the acute pancreatitis like ileus, ascites, fluid collection and organ failure were noted and duly treated. At follow up all those patients who failed to recover and developed abdominal swelling, nausea, vomiting, fever and chills were investigated for infected necrosis of the pancreas and cultures were sent, and pancreatic abscess was diagnosed were cultures came back positive for growth of organisms. Upon diagnosis of pancreatic abscess the patients were prepared for CT guided drainage, and following the drainage procedure a pigtail drain was kept for a period of 30 to 40 days and appropriate antibiotics were used. The CT scan was repeated when the need arose, if loculated collection was recognized or patient developed a fistula, open surgery was done. Morbidity and mortality was noted, and data was analyzed using SPSS version 20.0

RESULTS

The patient population consisted of n=550 patients of acute pancreatitis, out of which n=30 (5.45%) were diagnosed cases of pancreatic abscess, out of these patients n=5 (16.67%) were males and n=25 (83.33%) were females, and the mean age of patients was 44 +/- 11 years. All the patients underwent a computer tomography guided percutaneous drainage of the pancreatic abscess with placement of a pigtail drain. In n=24 (80%) of patients the abscess resolved completely in 20 to 40 days. Which was helped with the proper use of antibiotics, and there was no residual collection after the follow up and complete resolution of the abscess. N=5 (20%) of patients had complications and their symptoms failed to show any signs of improvement after the drainage and laparotomy had to be performed, in which drainage of abscess and necrosectomy was performed. N=1 (3.33%) patient developed sepsis, and n=1 (3.33%) developed a pancreatic fistula, n=3 (10%) of patients improved their signs and symptoms after the surgical intervention was done. The patient which developed pancreatic fistula was put on total parenteral nutrition and after that distal pancreatectomy procedure was performed.

DISCUSSION

One of the complications of acute pancreatitis is fluid and necrotic collection. The collection can be divided into acute and chronic based on the time duration (that is less or more than 4 weeks duration).[6] In the acute period the fluid is less defined and simply referred to as a per pancreatic collection, with tissue edema. After the interval of four weeks the fluid is more organized, and a pseudocyst is formed, which contains pancreatic enzymes, and a fibrous wall surrounds it. As the pseudocyst becomes infected a pancreatic abscess is formed, similarly pancreatic necrosis can result in a variable amount of fluid being collected due to necrosis of the pancreatic tissue. The formation of pancreatic abscess is in about 3% of patients presenting with pancreatic abscess.[1] In our study 5.45% of patients developed pancreatic abscess of the total of 550 patients of acute pancreatitis, which is above the reported frequency.

An infected necrosis of the pancreatic tissue is when bacteria invade the necrosed area, the mortality can rise more than 20% in acute pancreatitis when the necrosis and infection develops and lead to organ failure[1] The mortality for simple necrosis is 5% but rises to up to 40%

when necrosis is added with infection and sepsis[7] In our study the mortality for pancreatic abscess was 3.33%. According to a study patients with pancreatic necrosis had mortality rates of up to 23% and with complication rates of 82%, and for patients without necrosis the mortality rate is 0% and morbidity rate is 6%.[8] Pancreatic abscess usually develops when the necrosed area is more than 30% of the pancreatic tissue.[8] In our study the prevalence of acute pancreatitis was more common in the females, because cholelithiasis is more common in the female gender, which is one of the major causes of acute pancreatitis. The current treatment options for pancreatic abscess include open surgical drainage, endoscopic drainage and CT guided percutaneous drainage. CT guided drainage being the preferred method in patients with sepsis, or in cases of drainage of remaining fluid after the surgical intervention, when redoing open surgery will be difficult.[9] The current trend is shifting towards minimally invasive techniques, and surgery is being reserved for refractory cases, cases where percutaneous approach is not feasible as in infection, when pancreatic bed is not well formed and in abdominal compartment syndrome. A newer technique of trans luminal drainage or necrosectomy by natural orifices, Tran luminal endoscopic approach are the burgeoning techniques and progressing rapidly towards becoming the preferred method of choice.[10] CT guided drainage is the next method of choice, when the transluminal window is not good or endoscopic ultrasound is not available. It is also preferred when the patient is not fit for endoscopic procedures. Endoscopy requires a more mature wall of the cyst, and leads to immediate symptomatic relief[11,12] Sterile of infected (walled off) cysts require minimally invasive methods of drainage in 40% of cases and surgical drainage in 20% of the cases[13,14] ERCP is required in patients having gall stone pancreatitis. It is quite possible to drain abscess through the skin but open surgery is frequently needed when gall stone pancreatitis is found along with pancreatic pseudocyst and abscess.[15] In our study 80% patients showed significant improvement with CT guided drainage of the pancreatic abscess, and 20% patients developed complications and required surgical intervention. According to one study transluminal endoscopic intervention was done and 40% patients required surgical intervention despite the endoscopic procedure.[1]

CONCLUSION

According to the results of our study, the computer tomographic guided drainage of the pancreatic abscess is a very safe and effective procedure for the treatment of pancreatic abscess. The rate of complications is low, and patients show swift recovery post operatively.

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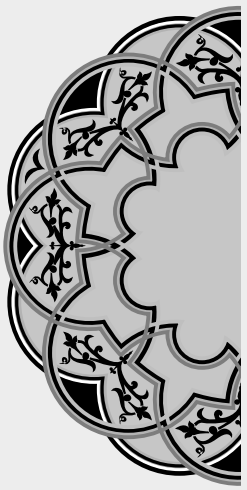

"Those who follow the crowd usually get lost in it."

Unknown

AUTHORSHIP AND CONTRIBUTION DECLARATION

Sr. #	Author-s Full Name	Contribution to the paper	Author=s Signature
1	Dr.Reeta Rani	Concept, Analysis, Write-up, Drafting, Layout	
2	Dr. Muhammad Arif uz Zaman	Concept, Drafting, Statis Tical Analysis	
3	Dr. Abdul Jabbar Mirani	Concept, Drafting, Statis Tical Analysis	
4	Dr. Ahmed Ali	Write-up, Data Coleecting, Final Layout	