



A COMPARATIVE STUDY OF PANCREATIC PSEUDOCYST TREATED WITH ULTRASOUND GUIDED ASPIRATION VERSUS CONVENTIONAL SURGERY

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ABSTRACT **Background:** Pancreatic pseudocysts belong to a large and hetero-geneous group of cystic pancreatic lesions and represent a complication of acute or chronic pancreatitis. **Material and Methods:** This is a prospective study conducted in the department of General surgery, at darbhanga medical college and Hospital, Darbhanga, Laheriasarai, Bihar. Study duration on One year. **Conclusion:** Ultrasound guided aspiration is equally safe compared to conventional surgery, It not only cures but provides palliation of symptoms and gives enough time needed for maturation of the cyst.

KEYWORDS : pseudocysts, Aspiration, Asepsis, mortality, and morbidity.

INTRODUCTION

Pancreatic pseudocysts belong to a large and hetero-geneous group of cystic pancreatic lesions and represent a complication of acute or chronic pancreatitis. Due to progress in sensitivity and more widespread availability of diagnostic imaging techniques, the incidence of pancreatic pseudocysts seems to be increasing steadily. The development of new interventional options for the diagnosis and treatment of pancreatic pseudocysts allows for different approaches to the disease. A pancreatic pseudocyst is a collection of tissue and fluids that forms on your pancreas. Your pancreas is located behind your stomach. Pseudocysts usually form as the result of a hard blow to your abdomen or an inflammation of the pancreas known as pancreatitis. "Pseudo" means false. A pseudocyst looks like a cyst but is made from different kinds of tissue than a true cyst. A true cyst is more likely to be cancerous than a pseudocyst. A pancreatic pseudocyst isn't usually dangerous unless it ruptures. A ruptured pancreatic pseudocyst is a life-threatening condition. See your doctor immediately if you have any of the following symptoms: high, persistent fever, severe pain in your upper abdomen, with pain radiating to your back, unexplained fainting, vomiting blood, weak, rapid heartbeat, Pancreatic pseudocysts most often follow a bout of pancreatitis. Pancreatitis is a serious and painful condition. Pancreatic enzymes, which help you digest fats and sugars, overreact and begin to digest the tissues of the pancreas itself.

OBJECTIVES

To analyze the various treatment modalities that can be utilized in the management of the pancreatic pseudocysts, To try USG guided aspiration technique as a primary modality of treatment in pancreatic pseudocysts before other therapeutic interventions.

Review of Literature

pancreatic pseudocysts can be described as fluid-filled cavities arising from the pancreas and surrounded by a wall of fibrous or inflammatory tissue, but lacking an epithelial cover^[1]. The cyst can be filled with pancreatic juice containing amylase, lipase and zymogens or, if no communication with the pancreatic ducts exists, with protease-free serous fluid. Several classification systems of pancreatic pseudo-cysts have been proposed addressing either the pathogenesis of pseudocyst formation, as in the Atlanta classification, or morphological features such as pancreatic duct anatomy and communication of the pseudocyst with the ducts. The latter are frequently used. The Atlanta classification system^[2] subdivides four entities: a) acute fluid collection, occurring early in the course of acute pancreatitis and lacking a wall of granulosomatous or fibrous tissue; b) acute pseudocysts, a cavity surrounded by fibrous or granulosomatous tissue that is a consequence of acute pancreatitis or trauma; chronic pseudocysts, arising in chronic pancreatitis and without a preceding episode of acute pancreatitis; and d) pancreatic abscess, an intra-abdominal collection of pus in the proximity of the pancreas with little or no necrosis resulting from acute or chronic pancreatitis or trauma. The incidence of pseudocysts in both acute and chronic pancreatitis has been assessed in large series of clinical studies. The relative proportion of acute and chronic pseudocysts varies between reports and depends on how pancreatic pseudocysts are defined and by what means they are detected. The incidence of pseudocysts ranges from 5% to 16% in acute pancreatitis^[1],

whereas in chronic pan-creatitis the numbers are higher and incidence rates of 20_40% have been published even in cohorts where advanced imaging techniques were not employed. The aim of endoscopic treatment is to create a connection between the pseudocyst cavity and the gastrointestinal lumen. There are various methods for carrying out an endoscopic drainage and it can be accomplished by either a transpapillary or a trans-mural approach; the latter requires access through the stomach (cystogastrostomy) or the duodenum (cystoduodenostomy). Pseudocysts should have a mature capsule (wall thickness >3 mm and <1 cm), impress the stomach wall and have a minimum size of 5-6 cm to become eligible for endoscopic drainage. Proposed guidelines are shown in Table II. At the time of writing, it is still not clear which technique should be generally favoured. Some authors suggest that transpapillary drainage should be preferred as the morbidity is lower compared with alternative drainage methods. Despite recent developments in minimally invasive techniques and further progress in CT- and ultra-sound-guided therapy, surgical drainage is still a principal method in the management of pancreatic pseudocysts. It traditionally includes internal and external drainage and excision. A surgical approach can be indicated in patients with: complicated pseudocysts, i.e. infected and necrotic pseudocysts; b) pseudocysts associated with pancreatic duct stricture and a dilated pancreatic duct; c) suspected cystic neoplasia; d) coexistence of pseudocysts and bile duct stenosis. Pancreatic pseudocysts are a known complication of acute and chronic pancreatitis. Chronic pseudocysts over 8 weeks are less likely to resolve spontaneously and, as the risk of complications increases with time, treatment of large pseudocysts (>5 cm) should not be postponed^[6]. Introduction of new and sensitive imaging techniques permits the detection of more pancreatic cystic lesions with better evaluation of adjacent structures.

MATERIAL AND METHODS:

This is a prospective study conducted in the department of General surgery, at darbhanga medical college and Hospital, Darbhanga, Laheriasarai, Bihar. Study duration on One year. SOURCE OF DATA: The patient admitted in our hospital wards with symptomatic pancreatic cyst.

The selected patients were subjected to a detailed history elicitation followed by thorough evaluation of risk factors and clinical features.

They were then subjected with baseline investigations (Biochemistry, Haemogram, and Chest Skiagram). This was then followed up by specific investigations like serum amylase, liver function tests, USG – Abdomen and CT – Abdomen. Each patient was individualized and treated accordingly.

INCLUSION CRITERIA

Pseudocysts with greater than or equal to 6 weeks duration were involved in the study.

EXCLUSION CRITERIA:

Children and traumatic pseudocysts.

SAMPLE SIZE:

50 cases adult patients with symptomatic pancreatic pseudocyst are

included in the study.

After taking consent and explaining risks and benefits, patient is taken to ultrasound room of surgery department, vims, bellary. Abdomen painted with a iodine preparation, draped with a sterile towels, pseudocyst localized using ultrasound probe and 18 gauge or 16 gauge lumbar puncture needle are inserted in to cyst cavity using 2% Lignocaine local infiltration. Aspiration started using a 20ml syringe, about 10ml of aspirate sent for analysis and aspiration continued till the pseudocyst collapsed completely, post aspiration analgesia is given with 3ml diclofenac intramuscular route.

OBSERVATION AND RESULTS

Total of 60 cases of adult pancreatic pseudocyst are included in the study and cases are randomized in to aspiration and surgery group after thoroughly explaining about benefits and risks of both and written consent taken and following results are obtained.

Age, Sex Wise Distribution Of Study Subjects

Age group	Sex		Total
	Male	Female	
30-39 years	20 (36.4%)	02(40.0%)	22(36.7%)
40-49 years	26(43.3%)	02(40.0%)	28(46.7%)
50-59 years	09(16.3%)	01(20.0%)	10(16.7%)
Total	55(100%)	05(100%)	60(100%)

chi square value -0.1 df-2 p value -0.95

In my study 55 males and 5 females are included and age 40 to 49 years had highest prevalence(47.3% in males and 40% in females)

Age Wise Distribution Of Study Subjects

Age group	Frequency	Percentage
30 - 39 years	22	36.7%
40 - 49 years	28	46.7%
50 - 59 years	10	16.6%
Total	60	100%

In my study of total 60 cases 36.7% are in age group of 30 to 39 years and 46.7% in 40-49 year age group and 16.6% in 50-59 year age group. In this study mean hospital stay was 5.8 days for surgical group compared to 3.4 days for aspiration group.

Pancreatic pseudocyst comprise 75% of cystic lesions of pancreas, often presenting with pain abdomen, nausea and vomiting, weight loss and abdominal fullness, poses dilemma in selecting appropriate treatment modality.

In our hospital, DMCH, Laheriasarai, Bihar. study included 60 patients, patients divided into two groups, one for ultrasound guided aspiration(30 patients) and other group(30 patients) for surgery, patients selected for ultrasound guided aspiration fulfilled inclusion criteria as mentioned above. Surgical procedure considered only in cysts with wall thickness more than 6mm. The following results are obtained: In my study males(91.6%) predominated over females. Of 60 patients, 56 were alcoholic(93.3%) and 4 were not. In this study 93.3% patients had pain abdomen, 78.3% had vomiting and 60% had abdominal fullness as complaints and 81.7% had loss of appetite. Abdominal Tenderness was present in 96.7% of patients(58 patients). In this study, 56.7%(34 patients) had pseudocyst in body of pancreas, 38.3%(23 patients) had pseudocyst in head of pancreas and 5%(3 patients) had pseudocyst in tail of pancreas. In this study, USG guided aspiration group had a mean pseudocyst wall thickness of 3.8mm and patients who underwent surgery had mean wall thickness of 6.8mm. Among 30 patients who underwent surgery, 16 patients(53.3%) had cystogastrostomy, 7 patients(23.3%) had cystojejunostomy, 3 patients(10%) had cystoduodenostomy, 2 patients(6.7%) had distal pancreatectomy. 2 patients(6.7%) had external drainage as surgical procedure. Among 30 patients who underwent surgery, 6.7%(2 patients) had postoperative wound infection and were treated conservatively.

DISCUSSION

In this study percutaneous aspiration has cured 11 of 14 infected pseudocysts and palliated two, which were subsequently cured by surgery; one was palliated but patient was lost to follow up. Surgical drainage cured six of 12 infected pseudocysts and palliated the other six, of which four were cured by further surgery and the other two by

secondary percutaneous drainage. Nine of 12 noninfected pseudocysts were cured by percutaneous aspiration, and two were palliated and later cured. In one patient, disease progressed, and he was ultimately lost to follow-up. Thirteen of 14 noninfected pseudocysts were cured by surgical drainage. The other patient died of pulmonary embolus. In patients treated by percutaneous techniques, there were four major complications. Our study established distinct advantages of percutaneous drainage under computerized tomographic and ultrasonic guidance: (1) the procedures can be carried out under ultrasonic guidance in an intensive care unit on critically ill patients, (2) the technique proved highly effective for initial palliation, with defervescence and stabilization occurring in most critically ill patients within 48 hours, (3) findings from fine needle aspiration provided valuable information as to microorganisms and antibiotic sensitivities and differed in 29 of 85 patients from those of concomitant blood cultures, and (4) definitive eradication of the process (surgical ablation of residual necrotic material) can be elected after the patient's clinical condition stabilizes. Percutaneous drainage of 101 pancreatic pseudocysts (51 infected, 50 noninfected) in 77 patients is described. In this group of patients, 91 of 101 pseudocysts were cured by means of catheter drainage (90.1%) (noninfected, 43 of 50 [86%]; infected, 48 of 51 [94.1%]). Six patients underwent operation after percutaneous treatment due to persistent drainage. In patients with infected pseudocysts, the infection was eradicated by percutaneous drainage before operation. Four pseudocysts recurred and were redrained percutaneously. The mean duration of drainage was 19.6 days (infected pseudocysts, 16.7 days; noninfected, 21.2 days). Various access routes were used for catheter drainage: transperitoneal, retroperitoneal, transhepatic, transgastric, transduodenal, and transsplenic (inadvertent). Four major (superinfections) and six minor complications occurred. An unexpected finding in seven patients was spontaneous fistulization of the pseudocyst into the gastrointestinal tract. The records of 92 patients with symptomatic pancreatic pseudocysts referred for surgical management over a 27-year period were retrospectively reviewed to compare outcome in 42 patients managed with operative internal drainage procedures (group I) with that in 52 patients managed with computed tomography-directed percutaneous catheter drainage (PCD) (group II). The two groups were similar for patient age, sex, pseudocyst location, and cause. The frequency of antecedent pseudocyst-associated complications was less in group I (16.7 versus 38.5%, $p < 0.05$). Seven group I patients and four group II patients had major complications (16.7 versus 7.7%, not significant). Group II mean duration of catheter drainage was 42.1 days, and the drain track infection rate was 48.1%. Percutaneous catheter drainage has the following advantages: low mortality rate, does not require a major operation, (3) does not violate the operative field in cases when subsequent retrograde duct drainage procedures are required.

CONCLUSION

Ultrasound guided aspiration is equally safe compared to conventional surgery, It not only cures but provides palliation of symptoms and gives enough time needed for maturation of the cyst. It avoids a major surgery with its associated morbidity and mortality. It has minimal risk of development of fistula and secondary infection provided if its done under asepsis. It is simple and can be done bedside and also palliative option in patients who are not fit for surgery and are debilitated.

Summary

Total of 60 cases are studied of them 30 cases are subjected to ultrasound guided aspiration and 30 cases are subjected to surgical procedures. Cystogastrostomy, cystojejunostomy, cystoduodenostomy, External drainage, and distal pancreatectomy are the surgical procedures done in this study. Wall thickness of greater than 6 weeks duration is factor for taking up a surgical procedure.

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