Laparoscopic Cystogastrostomy in Pancreatic Pseudocyst with Minimal Invasion and Early Outcome

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ABSTRACT

Introduction: Pancreatic pseudocyst is a well circumscribed fluid collection, enclosed by a wall of inflammatory and fibrous tissue, arising in or adjacent to the pancreas. Pancreatic pseudocysts may occur after an episode of acute or chronic pancreatitis and in cases of pancreatic trauma. Available interventions include percutaneous, endoscopic or surgical approaches. Laparoscopy plays an important role in the management.

Case Description: Here we report a case of pseudocyst in a 30-year-old man which was successfully managed laparoscopically with good outcome.

Discussion: Small asymptomatic pseudocysts are known to regress spontaneously. Symptomatic, large or complicated pseudocysts need intervention. Laparoscopy has contributed immensely in the management of pseudocysts. It is associated with shorter hospital stay and fewer complications than traditional open methods.

Conclusion: Laparoscopic technique for drainage of pseudocysts at our hospital shows that this approach is feasible, safe and effective in the presence of trained surgeons. There is an added advantage of minimal morbidity and early discharge.

INTRODUCTION

Pancreatic pseudocyst is a well-circumscribed fluid collection, bounded by a wall of fibrous tissue, arising inside or around the pancreas. It is a pseudocyst because an epithelial lining on the cyst wall is absent. It was first described by Morgan.13

Pancreatic pseudocysts are reported in 2%–10% of patients after acute pancreatitis and in about 10%–30% of patients after chronic pancreatitis.1 They usually appear 5–6 weeks after an acute episode.2

Pancreatic pseudocysts tend to resolve spontaneously after 4–6 weeks in most of the cases. Active management is usually required if they are larger than 6 cm or persistent or are symptomatic. Complications of pseudocysts include infection, rupture and haemorrhage, and are seen in 30%–50% of the cases.3

Available interventions include percutaneous, endoscopic, or surgical approaches.4 Laparoscopy plays an important role in the management of pseudocysts. Laparoscopic cystogastrostomy has been described as a safe and efficient substitute to open drainage of pseudocysts.4,5
CASE REPORT

A 30-year-old gentleman came to our outpatient clinic with a mass over the upper abdomen, which was associated with abdominal pain, early satiety, and nausea. He gave a history of hospitalization for acute pancreatitis 2 months back, which was managed conservatively. On examination, he had a huge mass of 15 cm × 12 cm in his upper abdomen, which was firm in consistency (Figure 1). Mild tenderness was present over the mass. It did not move with respiration.

Contrast enhanced computed tomography revealed a 15 cm × 10 cm pancreatic pseudocyst pushing the stomach anteriorly and the colon inferiorly while compressing the retroperitoneal structures (Figures 2 and 3).

Patient was taken up for a laparoscopic cystogastrostomy under general anesthesia in supine position. A 12-mm umbilical port was made and one 10-mm port in the right hypochondrium was inserted. Two 5-mm ports were placed, one in the upper midline and one in the left subcostal region.

A stay suture was taken on the anterior gastric wall. An anterior gastrotomy using a harmonic scalpel was made. The cyst’s position was confirmed after aspiration and an opening was created in the posterior gastric wall and the anterior cyst wall. Cystic fluid was aspirated.

Cystogastrostomy was completed using a 60-mm endo articulating stapler (Figure 4). Anterior gastric wall was closed using a 60 mm endostapler (Figures 5 and 6). Histopathological examination confirmed pseudocyst wall (Figure 7).

Operative time was 80 minutes and there were no postoperative complications.

Our patient was discharged on the fifth day (Figure 8). He has not reported any complications to us in 1.5 years of followup.

DISCUSSION

Small asymptomatic pseudocysts are known to regress spontaneously. Conservative management with rest to the bowel increases the probability of spontaneous resolution.6

However, some symptomatic patients need interventions. Indications for intervention for a pancreatic pseudocyst include a cyst >6 cm in diameter, >6 weeks in persistence, symptomatic patient or a complicated pseudocyst (infection, haemorrhage, rupture etc..,) and a matured wall.4,5,7
Factors that help to determine the type and timing of intervention are location, size, maturity of the cyst wall at presentation, presence or absence of complications, and availability of technical expertise.

Conventional open drainage procedures have been routinely practiced for pseudocysts. Newer methods like endoscopic drainage and percutaneous drainage have become widely accepted and established. Since its introduction by Way et al in 1994, laparoscopy has contributed immensely in the management of pseudocysts. They practiced intraluminal cystogastrostomy. Two trocars were inserted into the lumen of the stomach, guided by a laparoscope, and a nonsutured window was made between the cyst and the posterior gastric wall. There were chances of bleeding from the cut edges of the window, hence Trías et al developed stapled intraluminal gastrostomy. Endoscopic staplers help in achieving haemostasis. They also allow a wider opening between the cyst and stomach. This helps in reducing the risk of recurrence caused by obstruction of the opening between the cyst and stomach. Endoscopic stapler can also be used to close anterior gastrostomy as done in this case, in place of conventional endo suturing. Endo staplers reduce operative time as well.

A review of available literature conducted by Jang et al concluded that laparoscopic approach was associated with shorter operative time, shorter hospital stays and fewer complications than customary open methods for cyst drainage.\textsuperscript{6,14}
Laparoscopic approach is a good alternative for open surgery and it has better outcomes. However, long-term followup has not yet been carried out to compare open, laparoscopic, and endoscopic approaches, thus more randomized control trials are needed. The lengthiest follow up available was undertaken by Crisanto Campos et al in Mexico in which patients were followed up for 40 months after laparoscopic surgery with no reported recurrence.

CONCLUSION

The results obtained with the laparoscopic cystogastrostomy technique at our tertiary hospital show that this approach is feasible, safe, and effective in the presence of capable surgeons. Similar to open surgery, laparoscopic surgery can help to achieve internal drainage with synchronous debridement of necrotic tissue. There is an added advantage of minimal morbidity, and early discharge. It offers all of the benefits of a minimally invasive surgical approach while upholding all of the principles of open surgery.

References: