

Case Series

Post operative pancreatic fistula associated with failure to rescue on pancreatic cancer undergoing pancreatic resection: a single centre experience

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ABSTRACT

Pancreatic resection was known as the gold standard treatment for resectable pancreatic cancer. Post operative pancreatic fistula was common following pancreatic resection for tumor of the pancreas (head, body or tail of the pancreas). According to the Clavien-Dindo classification, the presence of the pancreatic fistula after resection was associated with increased rate of morbidity and mortality for the patients. We would evaluate cases of resectable pancreatic cancer (head and tail of the pancreas) undergoing open pancreatic resection in our centre (low volume centre). Post operative pancreatic fistula were evaluated by abdominal CT scanning and increased amylase level from intra peritoneal drain. The patients whose cannot survive after pancreatic resection were classified as failure to rescue. The presence of cardio-pulmonary morbidity was excluded from this study. Six cases were recorded in this study, 4 cases were head pancreatic cancer and 2 cases was tail pancreatic cancer. The histopathology results were acinar cell pancreatic cancer. Post operative pancreatic fistula was found on 1 case of head pancreatic cancer, classified as Clavien-Dindo grade IV, relaparotomy was done. This patient had sepsis associated post operative pancreatic fistula and can not survive during evaluation (on 14th post operative days). For the rest of the patients, there were no pancreatic fistula and had good outcome with no post operative morbidity. The presence of uncontrolled post operative pancreatic fistula was associated with failure to rescue on pancreatic cancer undergoing resection.

Keywords: Post operative pancreatic fistula, Failure to rescue, Pancreatic cancer

INTRODUCTION

The formation of a post-operative pancreatic fistula, also known as a POPF, is the most dangerous complication that may arise after pancreatic surgery. If the underlying pathophysiology, risk factors, and perioperative processes are well understood, it may be possible to improve patient treatment and the adoption of preventative interventions.¹

In the past, pancreatic resection was considered the best therapeutic option for pancreatic cancer that could be

surgically removed. The post-operative pancreatic fistula was a typical complication that occurred after pancreatic resection for malignancies of the pancreas (whether they were located in the head, body, or tail of the pancreas). The occurrence of a pancreatic fistula following resection, as determined by the Clavien-Dindo classification, was related with an elevated risk of morbidity and death for the patients.^{1,2}

After a pancreatoduodenectomy, a postoperative pancreatic fistula is a frequent and feared complication

that may occur. According to the definition provided by the international study group for pancreatic fistula (ISGPF), this complication may be separated into two primary categories: biochemical, clinically irrelevant fistula (also known as grade A), and clinically relevant pancreatic fistula that requires a change in postoperative care (grades B and C).³

There is a lack of consensus about the most effective treatment technique for clinically meaningful pancreatic fistula at this time. For a number of decades, the therapy consisted of an open relaparotomy. Using this strategy, surgical lavage and drainage, and, if required, a total pancreatectomy to completely remove the cause of the infection, may be carried out in order to treat the condition. The risk of death is significantly increased while undergoing this invasive operation.² However, other investigations have shown that full pancreatectomy may be conducted with a pretty excellent result (low mortality), and the authors propose that, in patients who need relaparotomy, the procedure should be performed as soon as feasible. Primary catheter drainage is a less invasive alternative to relaparotomy; it lowers tissue damage and the systemic inflammatory response that would otherwise be caused by the surgical stress in these already critically sick patients. Primary catheter drainage also reduces the risk of infection. The standard treatment for an additional subset of critically ill patients with the pancreatic disease (infected necrotizing pancreatitis) is now a minimally invasive step-up approach consisting of percutaneous catheter drainage as the first step, to be followed by surgical intervention if patients do not improve clinically. This approach is known as the step-up approach. Several studies have revealed a broad variation, from 15% to 50%, in the proportion of patients with pancreatic fistula treated by relaparotomy. Despite this, it is possible that relaparotomy is only required in a small subset of these individuals.⁴

CASE SERIES

This study was conducted at surgery department, Moewardi general hospital Indonesia, starting from January till December 2022. In our facility, which is considered a low-volume center, we would review instances with resectable pancreatic cancer (both in the head and the tail of the pancreas) that were having open pancreatic resection. The pancreatic fistula that developed after surgery was examined using abdominal CT scanning, and the amylase level that was drawn from the intraperitoneal drain was found to be elevated. Patients who have pancreatic resection but do not go on to survive the procedure are referred to as "failure to rescue" patients. In this particular investigation, the occurrence of cardiopulmonary morbidity was not taken into consideration.

This research documented a total of six instances of pancreatic cancer, four of which were head pancreatic cancer and two of which were tail pancreatic cancer.

According to the findings of the histology, the patient had acinar cell pancreatic cancer. In one patient with head pancreatic cancer who had been diagnosed with Clavien-Dindo grade IV, a post-operative pancreatic fistula was discovered, and a relaparotomy procedure was required. This patient had a post-operative pancreatic fistula that was caused by sepsis, and they were unable to live when they were evaluated (on the 14th day after their operation). The remaining patients did not have any pancreatic fistulas, and they all had favorable outcomes with no post-operative morbidity.

The characteristics of the data could be seen on Table 1 below.

Table 1: Data characteristics.

Variables	Total
Sex	
Male	2
Female	4
Age (in years)	
40-60	5
61-70	1
Tumor location	
Head of Pancreas	4
Tail	2
Post operative pancreatic fistula	
POPF (+)	1
No fistula	5
Survival	
Survive	5
Not survive	1

DISCUSSION

As a major gastrointestinal operation, pancreatic resection, also known as pancreaticoduodenectomy, is considered the gold standard for treating resectable pancreatic cancer. However, this kind of surgery is associated with a high risk of both intraoperative and postoperative complications. Intraoperative bleeding, perforation, and anastomosis leaking are some of the most frequent complications that may arise after surgery. One kind of complication that has the potential to increase the morbidity and mortality rate of patients is called a post surgical pancreatic fistula.^{2,4}

After a pancreatoduodenectomy, a postoperative pancreatic fistula is a frequent and feared complication that may occur. According to the definition provided by the ISGPF, this complication may be separated into two broad categories: biochemical, clinically irrelevant fistula (also known as grade A), and clinically relevant pancreatic fistula that requires a change in postoperative care (also known as grades B and C).⁵ Clinically meaningful pancreatic fistula occurred in 12% of patients following pancreatoduodenectomy, and it was linked with a mortality rate of up to 39%, according to a recent

analysis that systematically examined 40 papers that reported ISGPF-defined cases of pancreatic fistula. Patients who have pancreatic fistulas often have post-pancreatectomy bleeding as a direct consequence of the pancreatic fistula, which is one of the leading causes of death in these patients.^{5,6}

The occurrence of such complications has an effect on the clinical outcomes of these patients, both in the short term and the long term. Particularly relevant to this research is the association between post-operative pancreatic fistula, of the grade IV kind according to the Clavien-Dindo classification, and failure to rescue following resection.⁷ On the other hand, despite the fact that complications, both big and little, continue to be the primary challenge of pancreatic surgery for the treatment of pancreatic cancer, the early detection of post-operative pancreatic fistula is the single most significant thing that can be done to lower the percentage of patients who are not able to be saved.^{5,8}

On minimally contaminated intra-abdominal abscess from pancreatic leakages and stable hemodynamic of the patients with no surgical intervention needed (grade I and II of Clavien-Dindo), this post-operative pancreatic fistula could be managed conservatively. Although some studies suggested the octreotide for these cases, some controversies were remained regarding the effectiveness of the routine use of octreotide on post-operative period.^{7,9}

The pancreas-preserving strategy of disconnection of the anastomosis with preservation of a pancreatic remnant, internal or external wirsungostomy, and salvage pancreatogastrostomy appears to be the preferred option for the treatment of severe pancreatic fistula after pancreatoduodenectomy. This strategy involves the preservation of a pancreatic remnant and either an internal or external wirsungostomy. Due to the fact that a complete pancreatectomy is a fairly severe procedure, it should only be used in certain circumstances when an organ-saving resection is technically impossible.¹⁰

The general therapy of pancreatic fistula is described in a few limited studies that are retrospective in nature. The majority of these studies point to the fact that these individuals should have a catheter drainage procedure that is only minimally invasive as their primary course of therapy. However, the studies also indicate a relaparotomy rate that ranges from 15% to 50%, which suggests that there is at least some reluctance to repair pancreatic fistula in a manner that is minimally invasive. On the other hand, relaparotomy may be done successfully, and it could eliminate the need for further interventions while the patient is being admitted.^{8,9,11}

Because primary catheter drainage was linked with decreased mortality, it was determined in the multicenter trial on a matched cohort of patients that catheter drainage was preferable to relaparotomy as the main

intervention for pancreatic fistula following pancreatoduodenectomy. As a result, primary catheter drainage ought to be the first step in the treatment of severe pancreatic fistula whenever it is possible to drain the pancreas using minimally invasive techniques.^{5,12}

CONCLUSION

There was a correlation between the occurrence of uncontrolled post-operative pancreatic fistula and the inability to survive pancreatic cancer patients who were having resection.

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