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## Surgical management of malignant bowel obstruction in recurrent pancreatic cancer



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## ABSTRACT

**INTRODUCTION:** Malignant bowel obstruction (MBO) is harrowing complication of gastrointestinal cancers. Only a few studies have reported on the surgical roles of bowel obstruction from recurrent pancreatic cancer. We report successful management for malignant bowel obstruction by palliative surgery for relief of symptoms.

**PRESENTATION OF CASE:** A 43 year old man was diagnosed with pancreatic tail cancer. After distal pancreatectomy, he underwent six cycle of adjuvant chemotherapy. 10 months later, he had suffered from small bowel obstruction by seeding metastases. We performed segmental small bowel resection. This patient had good recovery and continued to receive palliative chemotherapy. A 78 year old man was diagnosed with unresectable, huge pancreatic cancer. He had recurrent obstructive symptoms and periumbilical pain. We decided palliative surgery of wide excision of umbilical abdominal mass for pain control. 3 weeks later, he presented with recurrent symptoms in previous op site. We planned 2nd operation for relief of symptoms. He underwent surgery to resect abdominal wall mass and small bowel due to 2 cm sized mass in terminal ileum. After 2nd surgery, he received consistently palliative chemotherapy with good clinical condition.

**DISCUSSION AND CONCLUSION:** Palliative surgery improves quality of life in recurrent pancreatic cancer patients and can continue patient's palliative management. In selected patients, palliative surgery may effective management for progress of survival and quality of life.

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## 1. Introduction

Pancreatic cancer is a highly aggressive malignancy with low survival. The overall 5-year survival rate is only 5% [1]. Currently, surgical resection provides the best opportunity for long-term survival. However, recurrence, including local recurrence and distant metastasis, occurs in up to 80% of patients within 2 years [2]. Recurrent pancreatic cancer is typically treated with chemotherapy with or without radiation therapy. Liver is the most common metastatic site, followed by the peritoneum and lung [3,4]. Malignant bowel obstruction (MBO) is an unfortunate and distressing complication of gastrointestinal cancers. Because MBO due to pancreatic cancer typically indicates disease progression beyond the scope of current curative treatment options, surgeons seek to improve patient quality of life through conservative management. This study was approved by the institutional review board of Gangnam Severance Hospital, Yonsei University, Seoul, Korea. Therefore we reviewed

cases of successful palliative surgery for MBO due to recurrent pancreatic cancer according to the SCARE statement [5].

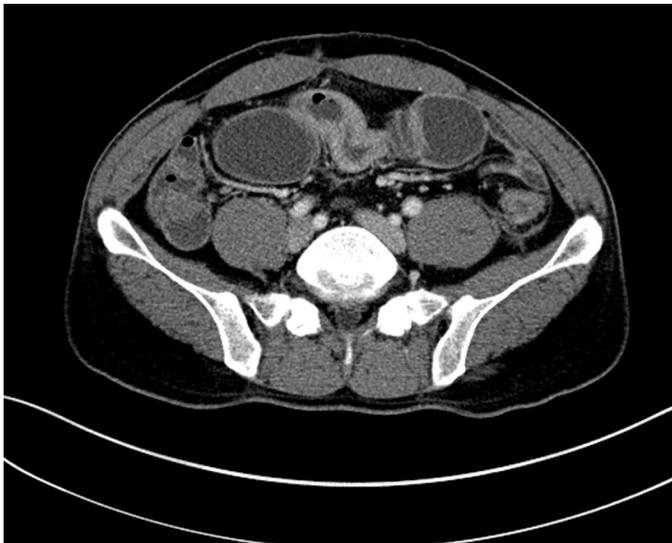
## 2. Results

## 2.1. Case 1

A 43-year-old man was diagnosed with pancreatic adenocarcinoma of the pancreas tail in January 2015. He was underwent distal pancreatectomy, splenectomy, wedge resection of the stomach, and segmental resection of the transverse colon in February 2015. After curative resection, he underwent six cycles of postoperative adjuvant chemotherapy by gemcitabine. Unfortunately, 10 months later, he began suffering from epigastric pain, vomiting, and obstructive bowel symptoms and CT revealed aggravated segmental small bowel dilatation suggesting progressive bowel wall invasion by seeding metastases in the mid small bowel (Fig. 1). Palliative surgery for MBO was performed in January 2016. On laparotomy, dilation of the small bowel, a large amount of ascites in the peritoneal cavity and numerous peritoneal seeding nodules in the omentum and abdominal wall were found. Segmental small bowel resection was performed with side-by-side bowel anastomosis. Histopathological examination of the omental mass

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**Fig. 1.** Abdomino-pelvic computed tomography revealed multifocal enhancement indicating wall thickening of the jejunum and descending colon. Segmental jejunal dilatation with a transition point at the jejunoileal junction level was suggestive of partial obstruction.

and mesenteric nodules revealed metastatic adenocarcinoma. The patient was discharged without complications on the 18th postoperative day. He was in good general condition and nutritional status. He has received continuously palliative adjuvant chemotherapy with TS-1 over 7 months.

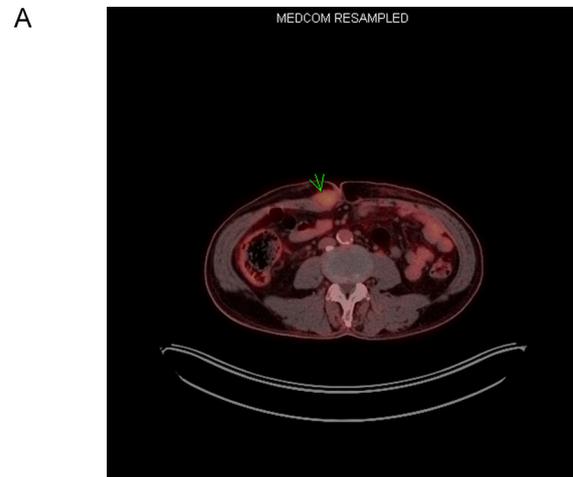
## 2.2. Case 2

A 78-year-old man presented with dyspnea and abdominal discomfort for 2 months. Abdominal CT revealed pancreatic cancer (about 10 cm) with extensive tumor invasion into the retroperitoneum and tumor encasement on the celiac trunk, common hepatic artery, proper hepatic artery, superior mesenteric artery, and splenic artery. This patient was started on concurrent chemoradiation with gemcitabine in February 2014. In January 2015, after 14 cycles of gemcitabine-based chemotherapy, he experienced recurrent obstructive symptoms including nausea, abdominal discomfort and localized right periumbilical pain. Positron emission tomography-CT scan showed strong soft tissue uptake in the right anterior abdominal wall (Fig. 2A). The patient underwent wide excision of an umbilical abdominal mass from the rectus abdominis muscle including the peritoneum for pain control on March 4, 2015 (Fig. 2B). Surgical pathology revealed metastatic adenocarcinoma. After 3 weeks, there was a solid mass on the right-side abdominal wall, and we performed excision of the abdominal wall mass (Fig. 3). On pathology, metastatic adenocarcinoma of the small intestine was diagnosed. After palliative surgery, he continued palliative chemotherapy with TS-1 over 17 months.

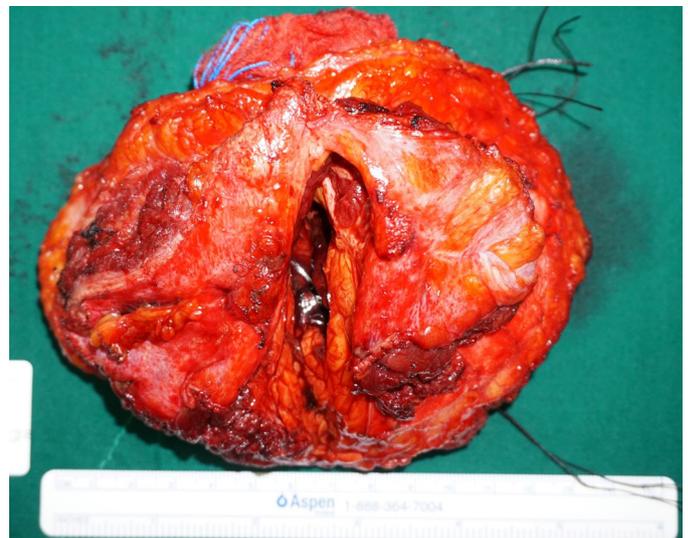
## 3. Discussion

Recurrent pancreatic cancer is typically treated with palliative chemotherapy/radiotherapy and conservative care. Because the overall survival is poor, resection of metastatic lesions is rare. There is currently no consensus regarding the optimal treatment for MBO and efficacy related to quality of life and survival [6].

Malignant bowel obstruction is a common complication of various advanced malignancies, particularly pancreatic, colorectal, and peritoneal carcinomatosis from ovarian cancer. Treatment of patients with MBO is a challenging clinical situation as decision making must balance between the pros and cons of intervention.



**Fig. 2.** PET CT scan showed increased FDG uptake in right anterior abdominal wall (A). The umbilical lesion was widely excised, with approximately 8 × 6 cm of tissue resected (B).



**Fig. 3.** A 10 × 11-cm mass was excised during the second operation.

The final decision is influenced by the level of obstruction, clinical stage of cancer, overall prognosis, presence of ascites, and the patient's performance status. Traditionally MBO of pancreatic cancer has been regarded as an untreatable condition with fatal outcomes. However, the introduction of new chemotherapy could extend survival significantly by a median survival of 11 months as reported in the FOLFIRINOX arm of a previous study [7]. Furthermore, this treatment strategy has opened up new therapeutic possibilities for highly selected patients with pancreatic cancer showing promising results. When a patient's clinical condition is good and their life expectancy is more than six months, we currently consider palliative surgery for MBO.

Palliative surgery is an option for select patients with MBO, and can prolong postoperative survival with acceptable treatment-related morbidity [8]. As chemotherapy agent develops and is improving gradually, recurrent cancer patients can continue palliative management with chemotherapy, and increased overall survival is thus expected. After palliative surgery for MBO, patients can continue palliative chemotherapy. Palliative surgery improves quality of life in recurrent pancreatic cancer patients and can facilitate continuation of palliative management. We have found that tolerating a solid diet at discharge is a useful predictor of quality of life (QOL) following palliative surgery for MBO patients. Considering diet, palliative surgery could provide better QOL for malignant obstruction pancreatic cancer patients.

In conclusion, palliative surgery should be considered in recurrent pancreatic cancer patients. Palliative surgery may have a positive impact on survival and quality of life in select patients.

#### Consent

This study was approved by the Institutional Review Board of Gangnam Severance Hospital, Yonsei University, Seoul, Korea (3-2016-0156).

#### Author contribution

Study concept: Hyung Sun Kim, Joon Seong Park, Dong Sup Yoon.  
Data collection: Hyung Sun Kim, Jin Hong Lim, Ja Hoon Back.

Writing the paper: Hyung Sun Kim, Joon Seong Park, Dong Sup Yoon.

Approved the final Version: Dong Sup Yoon.

#### Funding for your research

No.

#### Ethical approval

This study was approved by the Institutional Review Board of Gangnam Severance Hospital, Yonsei University, Seoul, Korea (3-2016-0156).

#### Conflicts of interest

All authors had not conflicts of interest.

#### Guarantor

No.

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