ISSN 2689-8268 | Volume 8

American Journal of surgery and Clinical Case Reports

Case Report Open Access

Case Report: Complete Response to Neoadjuvant Chemotherapy in a Patient with Pancreatic Adenocarcinoma

Mallory Vesling[1*] and Bhargav Mistry[2]

[1]Surgical Resident, University of North Dakota, General Surgery Residency, USA
[2]Attending Physician, University of North Dakota, General Surgery Residency, USA

[*]Corresponding Author:
Mallory Vesling, Surgical Resident, University of North Dakota, General Surgery Residency, USA

Received: 25 Jul 2025
Accepted: 09 Aug 2025
Published: 12 Aug 2025
J Short Name: AJSCCR

Citation: M Vesling. Case Report: Complete Response to Neoadjuvant Chemotherapy in a Patient with Pancreatic Adenocarcinoma. Ame J Surg Clin Case Rep. 2025; 8(16): 1-2

1. Abstract

Pancreatic adenocarcinoma is associated with poor prognosis and high metastatic potential2. Standard treatment strategies include surgery and adjuvant or neoadjuvant chemotherapy. In patients who underwent neoadjuvant chemotherapy, 18% had positive margins on surgical resection7. Here, we present a case of a 70-year-old female with pancreatic adenocarcinoma who achieved complete pathological response following neoadjuvant chemotherapy, with no residual carcinoma found upon surgical resection. This case highlights the potential efficacy of chemotherapy in inducing complete responses in pancreatic cancer, underscoring the evolving role of neoadjuvant therapy in treatment planning.

2. Introduction

Pancreatic adenocarcinoma remains one of the most challenging cancers to treat, with poor survival outcomes. While surgical resection is an essential part of treatment, the role of neoadjuvant chemotherapy is increasingly recognized for its ability to target micrometastatic disease, improve resectability, and potentially enhance survival [1,2]. Although complete pathological response to chemotherapy alone, without residual tumor at surgery, is rare, advancements in treatment and more comprehensive reporting have led to an increasing number of documented cases[3,4]. Studies suggest that the incidence of complete pathological response (pCR) ranges from 4-7% in patients treated with neoadjuvant chemotherapy, highlighting its rarity in this aggressive cancer [3,5,6]. This case underscores the potential for pCR in specific patients receiving neoadjuvant chemotherapy.

3. Case Presentation

A 70-year-old female presented with epigastric pain, weight loss, and elevated liver enzymes. Imaging revealed bile duct dilation without an identifiable mass. Endoscopic ultrasound (EUS) identified a 3 x 2 cm hyperechoic lesion in the pancreatic head, and biopsy confirmed adenocarcinoma of the pancreas. A temporary stent was placed to relieve biliary obstruction. The patient initiated neoadjuvant chemotherapy with FOLFIRINOX. Due to chemotherapy-induced neuropathy, adjustments were made to the regimen, including reduced oxaliplatin doses. Neulasta was administered for chemotherapy-induced pancytopenia. After completing six cycles, repeat imaging and EUS showed no detectable tumor. The biliary stent was removed, and she underwent a Whipple procedure. Pathological examination of the surgical specimen revealed no residual carcinoma, and 20 peripancreatic lymph nodes were negative for malignancy. The patient recovered uneventfully, and imaging showed no recurrence at follow-up. She resumed normal activities with no restrictions.

4. Discussion

This case represents a remarkable example of complete response to neoadjuvant chemotherapy in pancreatic adenocarcinoma. While surgical resection remains an essential treatment modality, this case suggests that neoadjuvant chemotherapy alone may be sufficient in rare instances or at least underscores the importance of neoadjuvant therapy. Complete pathological response is uncommon in pancreatic cancer, with reported rates of 4-7% following neoadjuvant chemotherapy [3,5]. FOLFIRINOX, a regimen known for its efficacy in downstaging tumors, has been associated with improved respectability and survival outcomes [1,2,6].The use of FOLFIRINOX aligns with findings by Klaiber et al. [1] that preoperative chemotherapy addresses micro metastatic disease and improves outcomes. Stoop et al. [3] noted that although pCR is rare, it serves as a crucial predictor of long-term survival. Additionally, Puckett and Garfield [4] emphasize that achieving tumor regression with neoadjuvant therapy can significantly improve the likelihood of complete surgical resection and remission. The SWOG S1505 trial analyzed by Cloyd et al. [2] also highlighted the benefits of neoadjuvant therapy in improving surgical margins and outcomes. While this patient underwent surgery following neoadjuvant therapy, the complete pathological response raises questions about the necessity of surgery in certain cases. As Reni et al. [5] and Hackert et al. [6] have discussed, further research is needed to identify predictive biomarkers for pCR and to determine which patients may achieve long-term remission with chemotherapy alone [5,6]. These findings reinforce the evolving role of systemic therapy in the management of pancreatic adenocarcinoma.

5. Conclusion

This case underscores the potential of neoadjuvant chemotherapy to achieve complete tumor regression in pancreatic adenocarcinoma, even in cases traditionally requiring surgery. Further research is necessary to refine treatment strategies and determine when chemotherapy alone may suffice in achieving long-term remission. It also highlights the question of why do some patients have such remarkable responses while many others are left with positive surgical margins?.

References

1. Klaiber U, Hackert T, Neoptolemos JP. Adjuvant treatment for pancreatic cancer. Translational Gastroenterology and Hepatology. 2019; 4(27).
2. Cloyd JM, Colby S, Guthrie KA, Lowy AM, Chiorean EG. Failure to undergo resection following neoadjuvant therapy for resectable pancreatic cancer: A secondary analysis of SWOG S1505. Journal of the National Comprehensive Cancer Network. 2023; 21(10): 1147-1156.
3. Stoop TF, Oba A, Wu YHA. Pathological complete response in patients with resected pancreatic adenocarcinoma after preoperative chemotherapy. JAMA Network Open. 2024; 7(6): e2417625.
4. PuckettY, GarfieldK. Pancreatic cancer. In StatPearls. StatPearls Publishing. 2024.

5. Reni M, Zanon S, Peretti U. Complete pathological response after neoadjuvant chemotherapy in pancreatic ductal adenocarcinoma: A systematic review. Cancer Treatment Reviews. 2021; 99: 102227.
6. Hackert T, Sachsenmaier M, HinzU. Locally advanced pancreatic cancer: Neoadjuvant therapy with FOLFIRINOX results in resectability in 60% of the patients. Annals of Surgery. 2016; 264(3): 457-463.
7. American College of Surgeons. Study finds most pancreatic cancer patients do not undergo surgery, the only potential for cure. 2021.