Favorable prognosis following radical pancreaticoduodenectomy for the resection of a pancreatic head oncocytic malignancy

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Background

Pancreatic Cancer

- Insidious onset, vague clinical presentation, high rate of metastasis at diagnosis, and high recurrence rate[1]
- Pancreatic ductal adenocarcinoma (PDAC) has a <10% 5-year survival rate[2]
- 52,546 new cases in 2018[3] → Estimated 60,430 new cases in 2021[4]
- Death Rate 11.1 per 100,000 person years[4]
- Overall 5-year survival rate 10.8%[4]

Intraductal Oncocytic Papillary Neoplasm (IOPN)

- One of four histologic subtypes of Intraductal papillary-mucinous neoplasm (IPMN)[5]
- Diagnosis rates for IPMN is increasing (8-20%)[6]
- IPMNs have an adenoma-carcinoma sequence occurring over 5 years[7]
- IPMNs incidence is 0.48-2.04 per 100,000 person years[5]
- IOPN estimates to make up 1-13% of all IPMNs[8] →5-year survival rate of 69%[9]

Table 1. Description of Gastric, Intestinal, Pancreatobiliary, and Oncocytic subtypes of IPMN[10]

IPMN Type	Gastric	Intestinal	Pancreatobiliary	Oncocytic
Prognosis	Favorable	Favorable	Poor	Poor
Location	Branch Duct	Main Duct	Main Duct	Main Duct
Frequency	Most common	Most common	Rare	Rare
Type of Invasive Carcinoma	Ductal Adenocarcinoma	Colloid Carcinoma	Ductal Adenocarcinoma	Oncocytic Adenocarcinoma
% of cases	10-30%	30-59%	>50%	Unknown

Pancreaticoduodenectomy (Whipple Procedure)[11]

- **Treatment**: surgical resection & possible neoadjuvant therapy +/- post-op chemotherapy

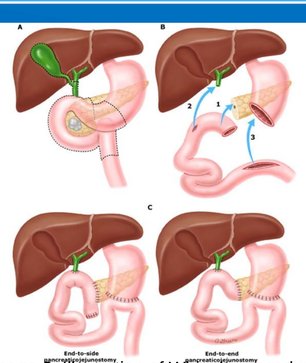


Image 2. Illustration of Whipple procedure[11]

Pancreatic Cancer Staging & Mortality

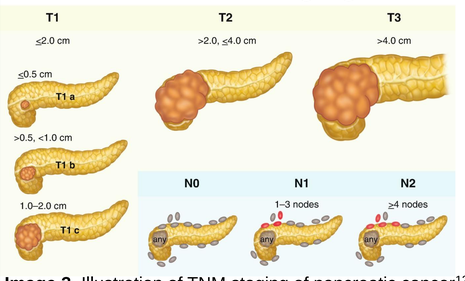


Image 3. Illustration of TNM staging of pancreatic cancer[12]

Table 2. Determination of pancreatic cancer staging using TNM and associated median survival length[12]

Stage	TNM	Median Survival (months)
IA	T1, N0, M0	24.1
IB	T2, N0, M0	20.6
IIA	T3, N0, M0	15.4
IIB	T1/2/3, N1, M0	12.7
III	T4, N1/2, M0	10.6 ★
IV	T any, N any, M1	4.5

Case Description

History of Presenting Illness

- 50-year-old female PMHx of anxiety, depression, hypothyroidism, COPD, migraines, and recent onset diabetes mellitus II
- Referred to hepatobiliary surgery with a cystic mass of the pancreas, associated pancreatic duct obstruction, and subsequent pancreatic failure, diarrhea, and weight loss.
- One year prior she was evaluated for chronic diarrhea, stool samples suggested pancreatic insufficiency and an abdominal CT scan showed a pancreatic mass and chronic pancreatitis
- Over six months she had a 30lbs unintentional weight loss
- Timely and consistent workup was disrupted due to inconsistent follow-up
- **PSurgHx:** hysterectomy
- **Medications:**
  - Butalbital-acetaminophen-caffeine 50-300-40mg PO Q6H PRN
  - Fluoxetine 40mg PO daily
  - Hydroxyzine pamoate 50mg PO Q6H PRN
  - Levothyroxine 75 mcg PO daily
  - Metformin 1000mg PO BID
  - Pancrelipase 24000-76000 units DR particles PO TID
  - Sitagliptin 100mg PO daily
  - Trazodone 50mg PO at night
- **Allergies:** NKDA
- **FHx:** breast cancer and lung cancer; no family history of pancreatic cancer
- **SHx:** Current smoker with hx of 30 pack years; Extensive alcohol history with "drinking 10-12 beers per week"

Physical Exam

Vital Signs: T: 36.7ºC HR: 81 bpm RR: 18 breaths/min BP: 106/70
SpO2: 97% RA Height: 5'2" Weight: 43.2 kg **BMI: 17.99 kg/m²**

Constitutional: no acute distress, non-toxic appearing, no diaphoresis, **cachectic**

Skin: warm pink and dry, **no ecchymosis** or erythema, **no jaundice**, **no telangiectasia**

Eyes: **no scleral icterus**, normal conjunctiva, PERRLA

Cardiovascular: regular rate and rhythm, normal S1 and S2

Pulmonary: normal respiratory effort, CTAB, no distress or accessory muscle use

Abdomen: **flat and non-distended,** a transverse surgical scar is present just superior to the pelvis, **a mass was palpated in the RUQ, no shifting dullness, fluid wave, hepatomegaly or splenomegaly appreciated**

Neurological: no focal deficit present, AAOx3, no asterixis

Psychiatric: normal mood, appropriate affect, normal thought content, **mildly anxious**

Diagnostic Studies

- **BMP/CBC/LFTs/Lipase**- normal
- **CA 19-9**- 11 units/mL (0-37 units/mL)
- **Stool Samples**- pancreatic insufficiency with abnormal chymotrypsin and pancreatic elastase
- **A/P CT scan**- 35 x 31 mm cystic and solid mass involving the pancreatic head that without invasion
- **EGD with EUS**- pancreatic ductal obstruction, chronic pancreatitis
- **Biopsy**: cellular atypia with mucinous cystic neoplasm papillary clusters of oncocytic epithelial cells

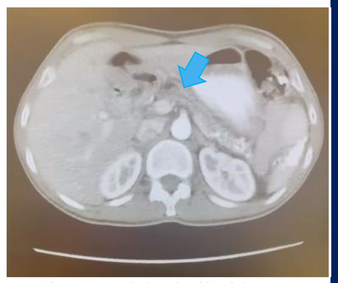
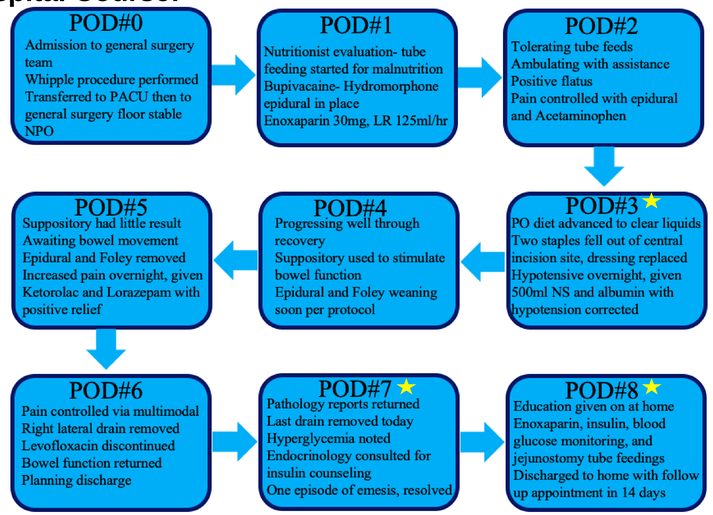


Figure 1. Abdominal/Pelvis CT Scan depicting a mass of the pancreatic head

Results/Outcome

Hospital Course:



Final Pathology Diagnosis:

pT1c pN2 **Stage III IOPN** with invasive pancreatic ductal adenocarcinoma.
5/24 positive lymph nodes

Tumor:

IOPN of 5 cm with 4 foci of **invasive carcinoma measuring <2 cm in aggregate**

Discussion/Conclusion

- Stage III pancreatic cancer with locally advanced disease is typically unresectable
- These statistics include PDAC and may not be representative of this case of IOPN
- This case highlighted the heterogonous features of IOPN tumors by displaying invasive PDAC
- Not all pancreatic cancers harbor as grim of a prognosis as PDAC
- Providers should be aware of this possible diagnosis when working up any pancreatic mass

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Acknowledgments

I would like to thank David Curtis, MD for allowing me to be involved in the care of this patient as well as his education provided on an uncommon issue. And thank you Jeffrey Cantin, PA-C for precepting me and cultivating an interest for hepatobiliary surgery.