

Focus on Gastrointestinal Cancers: Pancreatic Cancer

Michael L. Kochman, MD, FACP

Wilmott Family Professor of Medicine

Professor of Medicine in Surgery

Co-Director Gastrointestinal Oncology

Gastroenterology Division

University of Pennsylvania Cancer Center



Objectives

- **Identify the high-risk groups and epidemiology of pancreatic carcinoma**
- **Recognize the cardinal signs and symptoms of pancreatic carcinoma**
- **Understand the diagnostic, staging and management strategies**



Caveats

- **Personal views based on experience and supported by literature**
- **Specific question concerning the disease needs to be defined in the individual patient**
- **Daily Changes**
 - Technology
 - Literature
 - Costs



Epidemiology

- **4th leading cause of death in the US**
 - Second most common GI cancer
 - Overall five-year survival rates: 3-5%
 - 3-6 month survival with metastases
 - 8-12 month survival in unresectable cases
 - 10% 5-year survival for node-positive cases
- **Incidence rose from 1930's to 1970's**
 - 30,300 new cases per year
- **Rare before age 45**
 - 1.3 males:1 female
 - African Americans > Caucasian

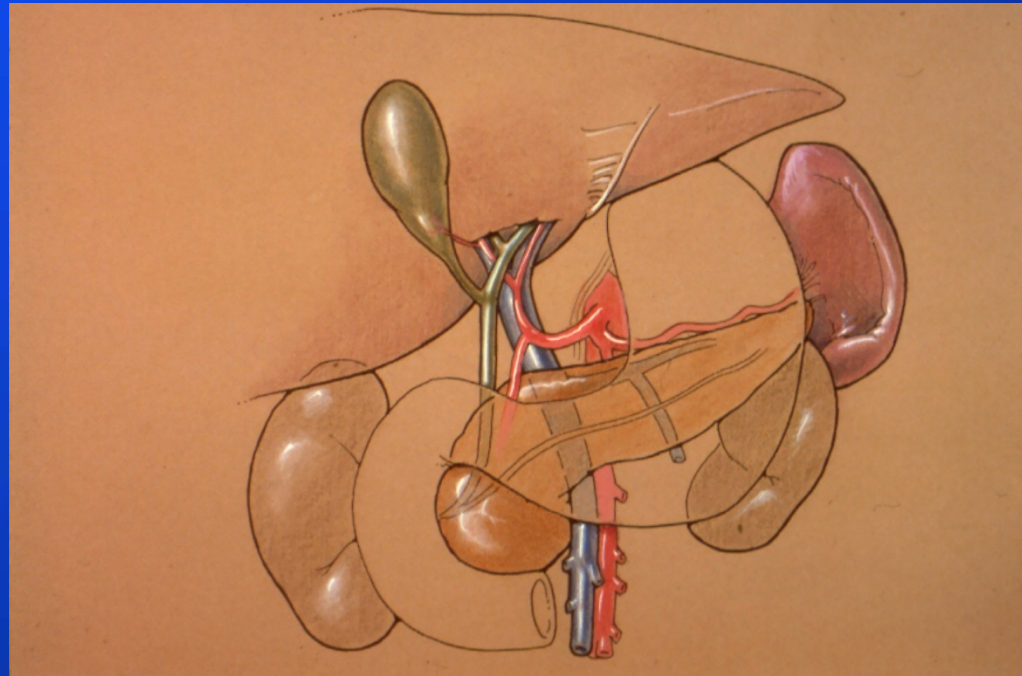


Pancreatic Cancer

- **Cure is generally possible only if recognized early**
- **Actuarial five-year survival rate following resection: 17%-24%**
- **Palliative therapy is the mainstay of treatment for majority**
 - **early detection and screening remain a challenge for the future**
- **Ergo: carefully select out those patients who may benefit from surgery**



Pancreas Anatomy



EUS Cohort: Successful Completion of Whipple

| | <u>Bypass</u> | <u>Whipple</u> | <u>Clean Whipple</u> |
|-------------|----------------|-------------------------|--------------------------|
| Pre- EUS | 43/88 (49%) | 45/88 (51%) | 33/88 (37%) |
| EUS | 22/73 (30%) | 51/73 (70%) p=.02 | 41/73 (56%) p<.02 |



Risk factors

- **Environmental**
 - **Chronic pancreatitis (RR 26)**
 - 4% at 20 years
 - **Tobacco (RR 1.5)**
 - **Diabetes (RR 2.1)**
- **Genetic**
 - **Hereditary chronic pancreatitis**
 - **Lynch Syndrome (HNPCC)**
 - **Familial pancreatic cancer**



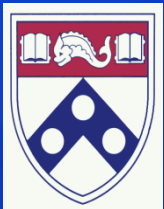
Environmental Risks

- **Tobacco alone increases risk**
- **Tobacco increases risk 3-6 times in the setting of chronic pancreatitis**



Risk Modification

- **Avoid tobacco**
- **Avoid alcohol**
- **Avoid a high-fat diet**



Genetics

- **Syndromes**
 - **5-10% of all cases**
 - Hereditary pancreatitis
 - Familial atypical mole and melanoma (FAMMM) syndrome
 - BRCA 1/2 mutation carriers
 - HNPCC
 - Peutz-Jeghers
 - Ataxia-telengectasia



Families with Hereditary Pancreatic Cancer

High Risk: >1 first-degree family member with pancreatic cancer before age 60.

Moderate risk: >1 second-degree relative with pancreatic cancer before age 60.

Low risk: 1 first-degree or second-degree family member with pancreatic cancer diagnosed after age 60.



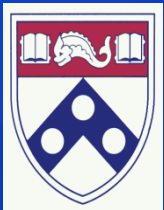
Goals of genetic testing

For the individual:

- **Confirmation of diagnosis, particularly in cases with atypical clinical features.**

For the family:

- **Pre-symptomatic diagnosis in family members “at risk.” Thus, aggressive surveillance measures are necessary only in mutation carriers.**



Clinical Features

- **History**
 - **Pain**
 - **80-85%, typically indicates advanced disease**
 - **Weight loss**
 - **Anorexia, steatorrhea**
 - **Jaundice**
 - **Painless, 50% not resectable**
 - **Recent onset of diabetes**
 - **Thrombophlebitis, acute pancreatitis**



Clinical Features

- **Head**
 - Jaundice, pain – often cholecystectomy precedes diagnosis by 1-2 months
- **Body/tail**
 - Pain, insidious weight loss
- **Physical Examination**
 - Mass – 20%
 - Ascites
 - Palpable gallbladder



Laboratory Features

- **Increased bilirubin**
- **Increased alkaline phosphatase, GGT**
- **Increased AST and ALT**
- **CA19-9 checked after diagnosis**
 - **Follow response to treatment**
 - **Evaluate for recurrence**
 - **>1000 u/ml correlates with unresectability**

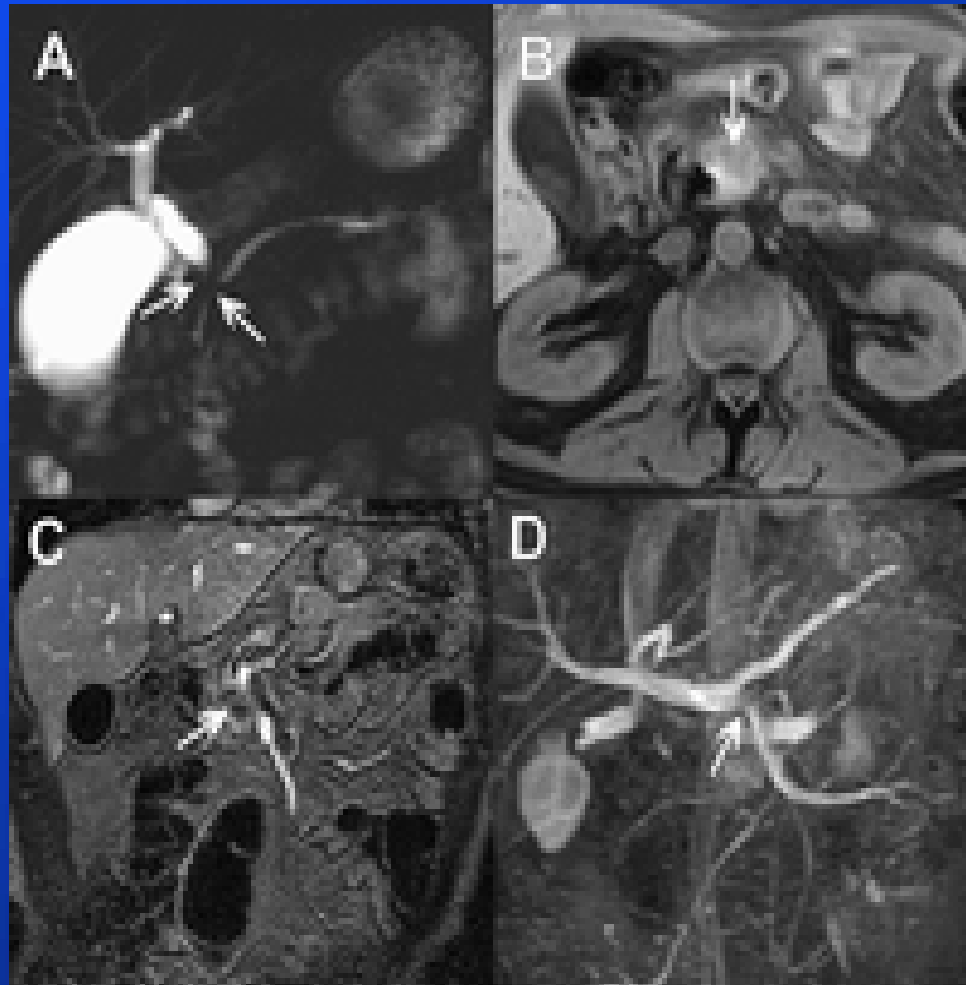


Purpose of Diagnostics and Staging

- **Establish diagnosis with a high degree of certainty**
 - Demonstrate lesion
 - Tissue acquisition
- **Establish best treatment option and lay groundwork for further care**
 - Staging
 - Prognostication
- **Relieve symptoms**
 - Pruritus
 - Gastric outlet obstruction



Pancreatic Cancer “All in one”



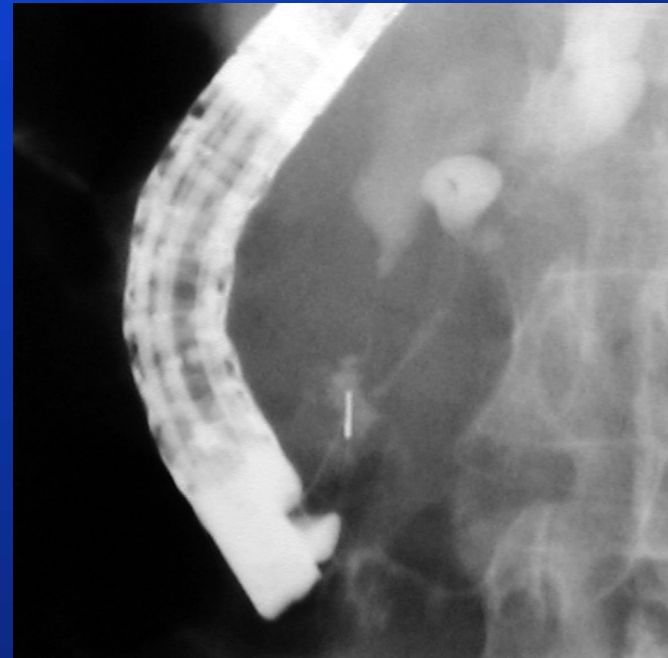
from Matos

ERCP

- **Suggestive of pancreatic carcinoma**
 - 95% sensitive
 - 85% specific
- **Therapeutic – ‘double-duct’ sign**
- **Does not stage pancreatic tumors**
- **Tissue sampling**
 - At most 60% sensitive



Double-Duct Sign



Pancreatic Carcinoma ERCP

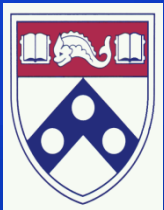


Pancreatic Head

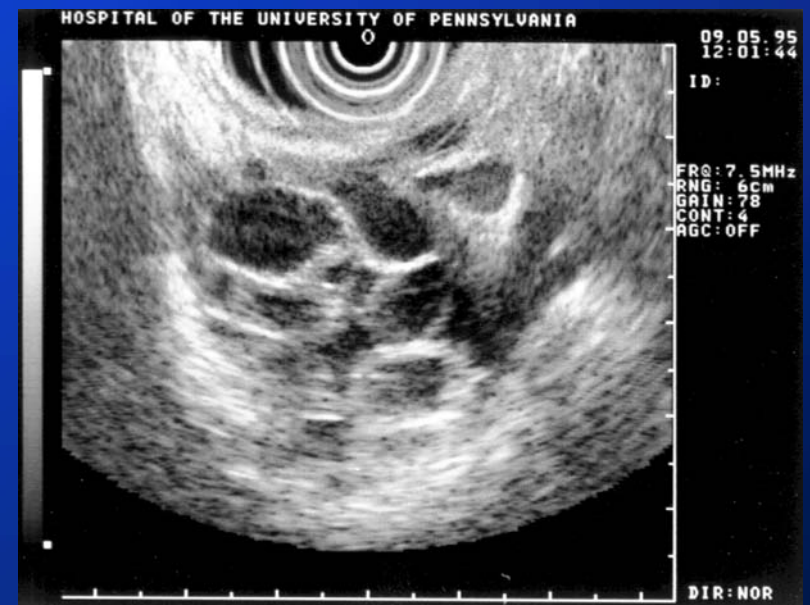


Pancreatic EUS

Normal
Pancreas



Pancreatic Cystic Lesion



Liver Metastasis



Pancreatic RTFNA

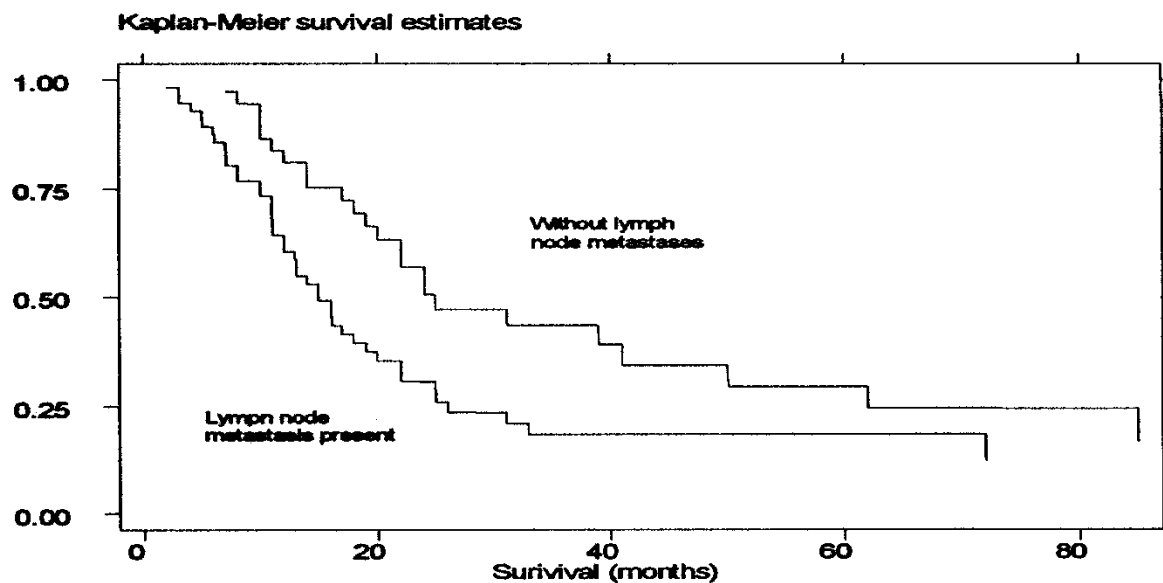


RTFNA

Peripancreatic
LN Biopsy



Results



Number at risk

| | | | | | |
|----------------|----|----|---|---|---|
| NEGATIVE NODES | 37 | 21 | 9 | 7 | 4 |
| POSITIVE NODES | 58 | 18 | 8 | 7 | 2 |

Figure 3. Comparison of the survival function according to lymph node status in persons receiving adjuvant chemotherapy. Persons without lymph node metastases had significantly greater survival than persons with lymph node metastases present at the time of surgery ($p=0.02$).

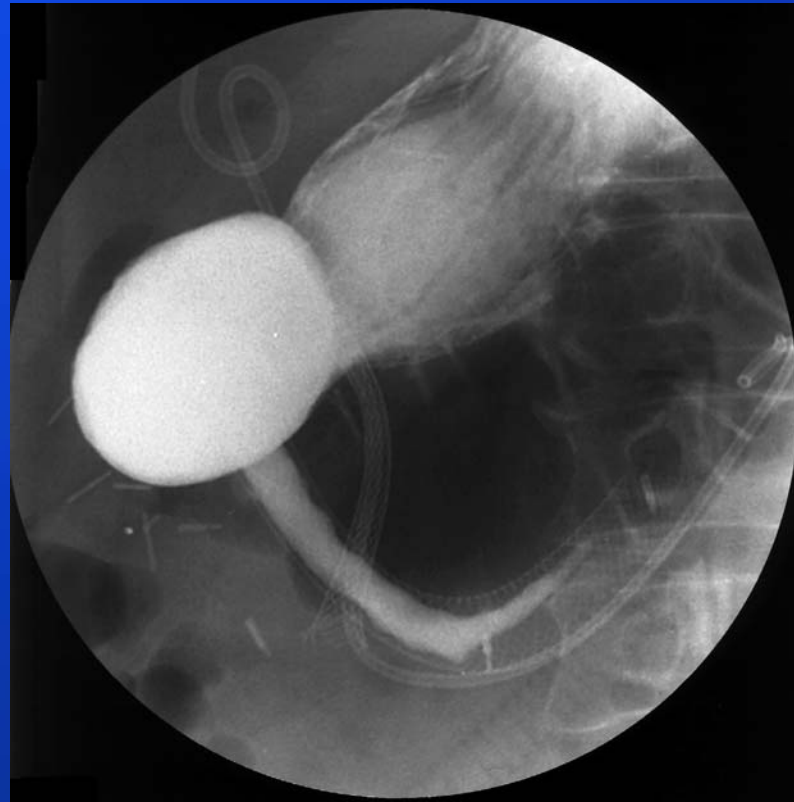


Palliation

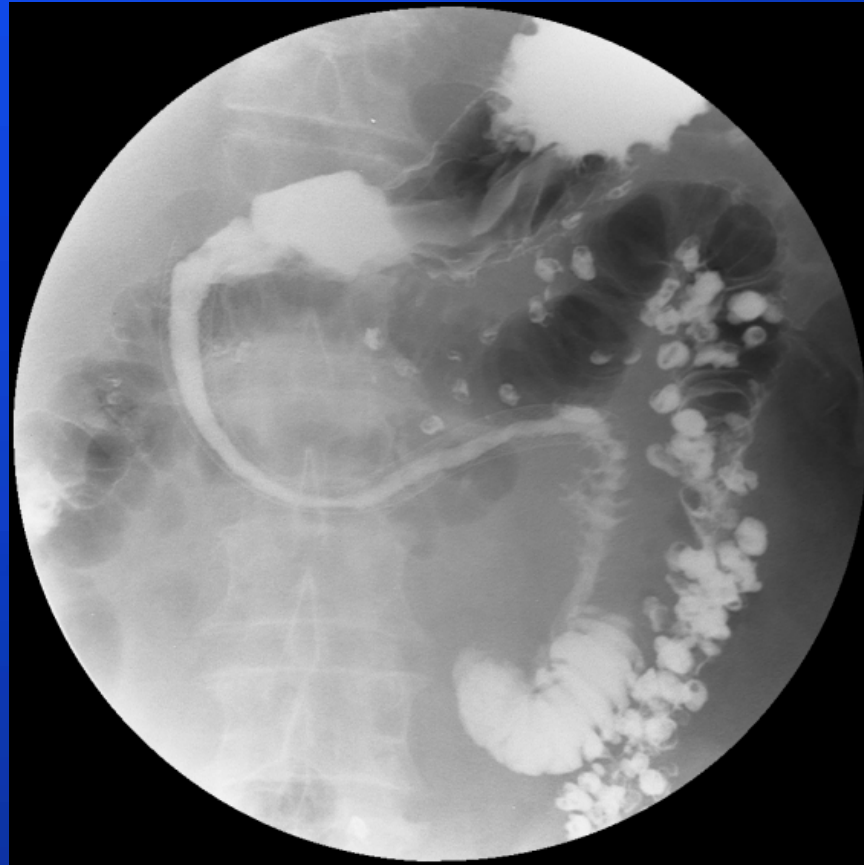
- **Amelioration of symptoms**
 - **Gastric Outlet Obstruction**
 - **Pain**
 - **Jaundice/Pruritus**
 - **Diarrhea**
 - **maldigestion**
 - **malabsorption**



Gastric Outlet Obstruction



Gastric Outlet Obstruction



Celiac Neurolysis





Whipple

