



Current Diagnostic Tools for Pancreatic Cancer

Presented by
Pancreatic Cancer Action Network

www.pancan.org

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To submit questions:

Type your questions in the text entry box

Click the **Send** Button

Please direct your questions to "All Panelists"
in the drop down



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Mark B. Pochapin, MD
Director, Division of Gastroenterology
Sholtz-Leeds Professor of Gastroenterology
NYU Langone Medical Center
Professor of Medicine
NYU School of Medicine



Pancreatic Cancer: Current Diagnostic Tools

Mark B. Pochapin, MD
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**An abnormality of the
hepatobiliary system is
suspected...**

WHAT IS THE NEXT STEP ?



Ultrasound

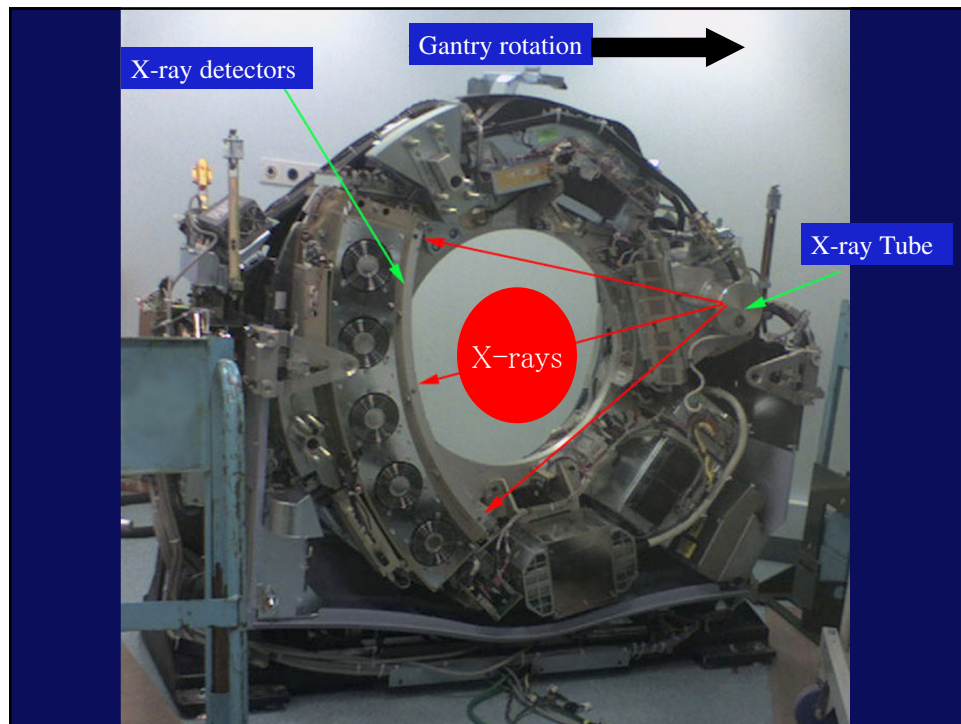
- Least invasive technique - uses sound waves
- Portable, quick
- Can guide interventional procedures
- No radiation
- High sensitivity for dilated bile ducts and biliary tract obstruction (obstructive jaundice)
- Very sensitive for differentiating cystic from solid lesions
- Overlying gas may obscure visualization

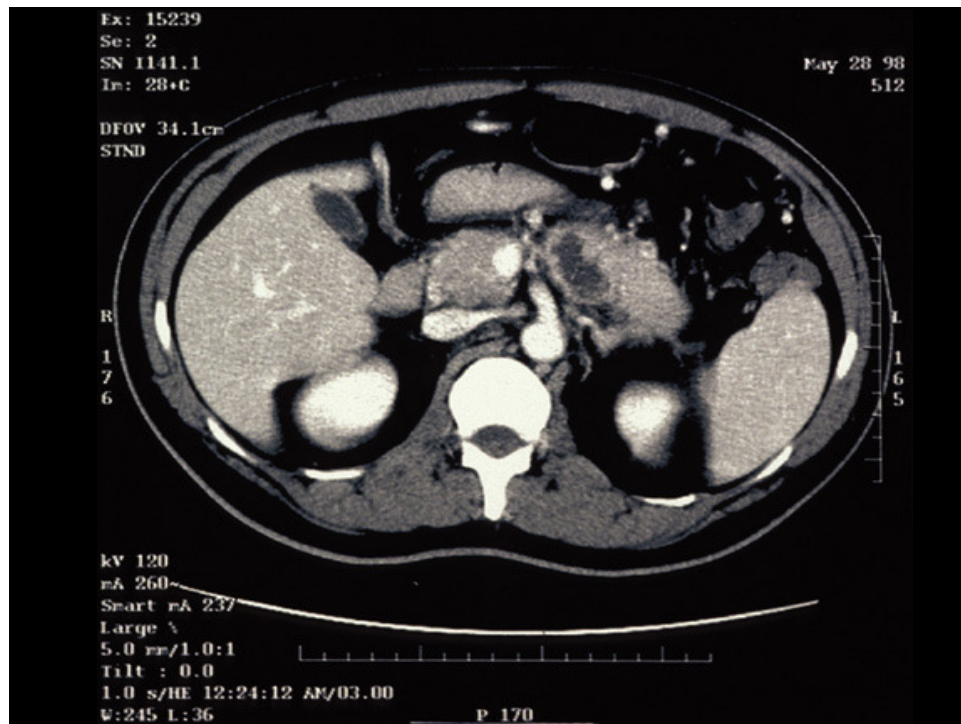


CT SCAN (Computed Tomography)

- Uses X-rays
- Primary imaging study for patients suspected of having pancreatic lesion
- Pancreatic Protocol:
 - Thin section dual-phase spiral CT scan
 - Give oral and IV contrast
 - Obtain images during optimal pancreatic arterial and portal venous enhancement and hepatic phase







MRI **(Magnetic Resonance Imaging)**

- Uses Magnetic Field and radio waves
- Reads the signals from protons
- Does not use X-Rays
- Takes longer than CT scan

MRCP:

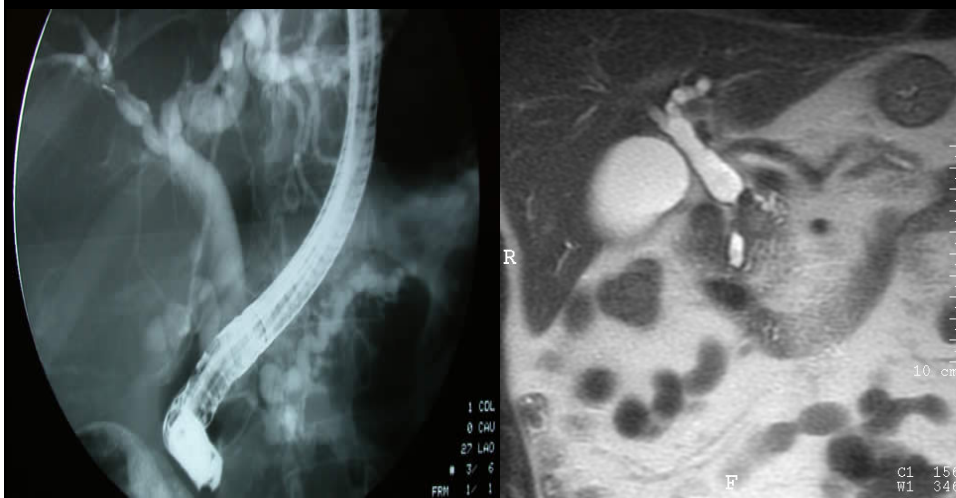
- **M**agnetic **R**esonance **C**olangio-
Pancreotography



MRI Contraindications

- Claustrophobia
- Surgical vascular clips
- Neuro-stimulators
- Cochlear Implants
- IVC Filter
- Pacemaker
- Orthopedic Implants

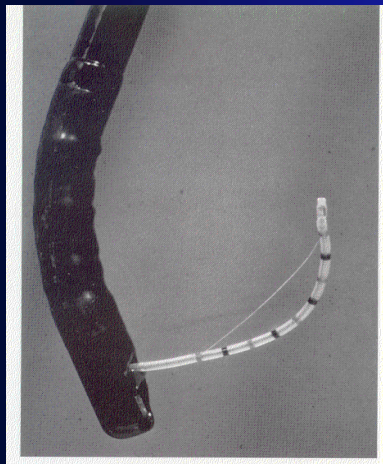
Pancreatic cancer: ERCP vs. MRCP



ERCP

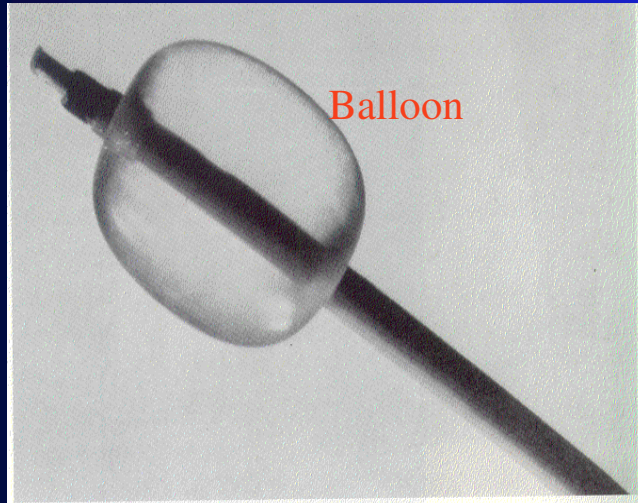
- Endoscopic Retrograde Cholangio-Pancreatography
- Diagnostic and Therapeutic Procedure
- Combination of endoscopy and X-rays
- Performed by a gastroenterologist who specializes in this procedure
- Can have a 7% risk of pancreatitis

ERCP Tools

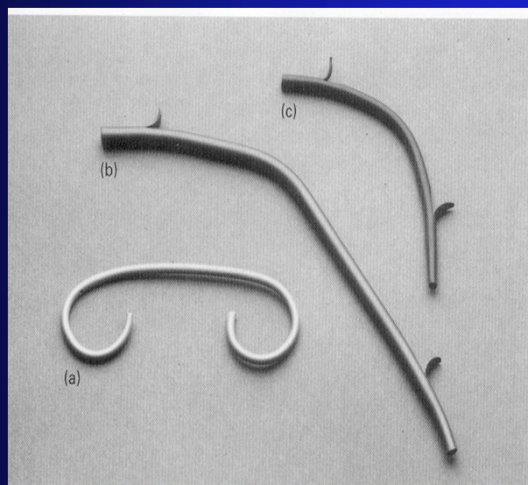


Sphincterotome

ERCP Tools

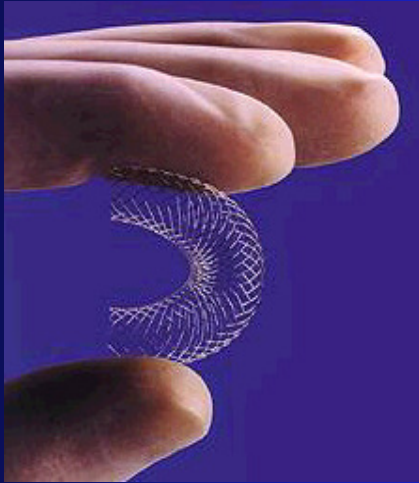


ERCP Tools



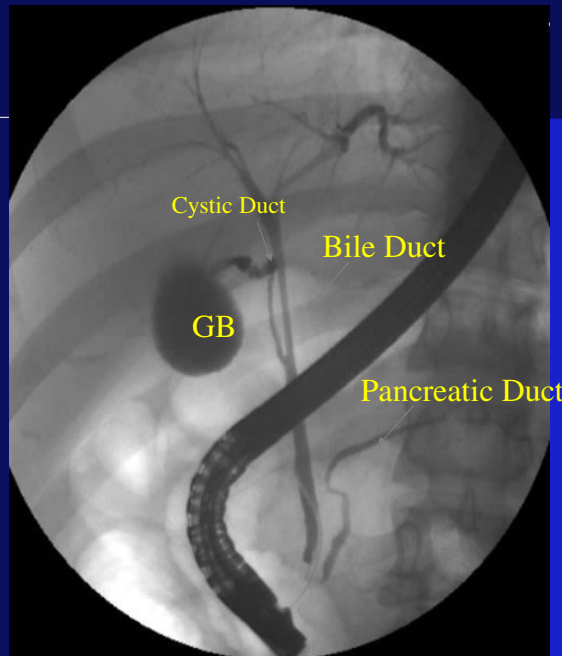
Stents

ERCP Tools



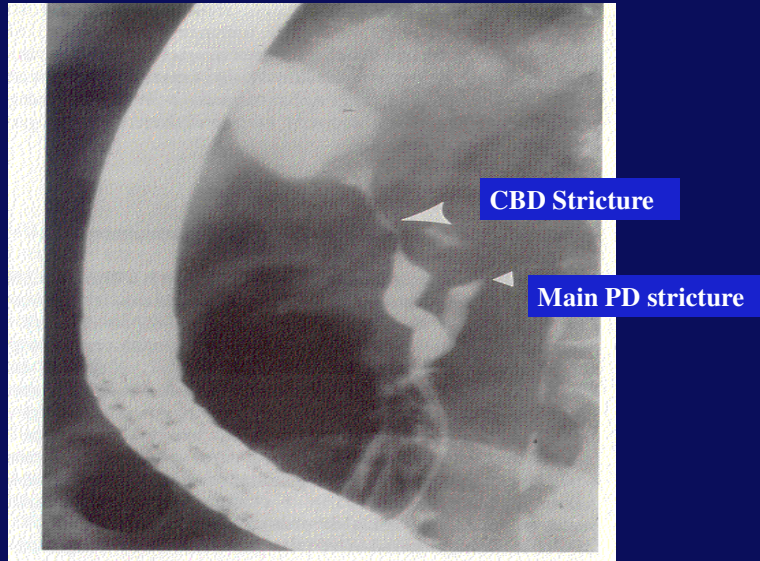
Metal
Stents

Normal ERCP



Diagnostic ERCP for Pancreatic Cancer

Double duct sign



Balloon Dilatation of Stricture

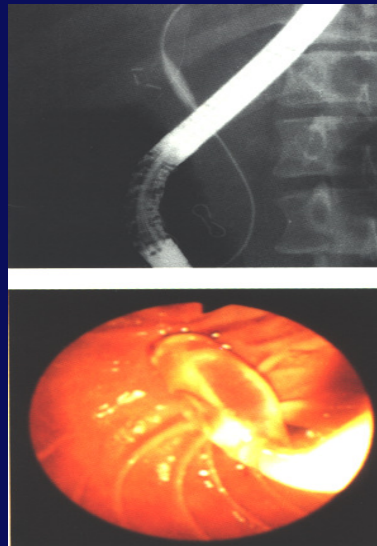
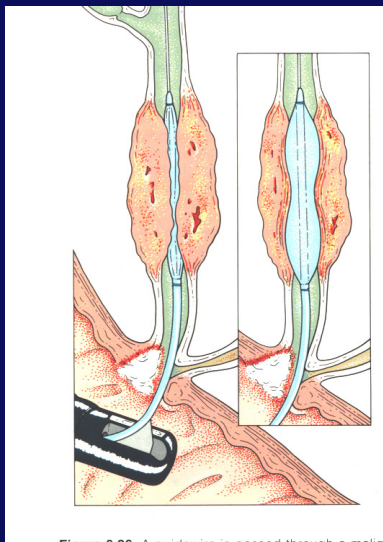
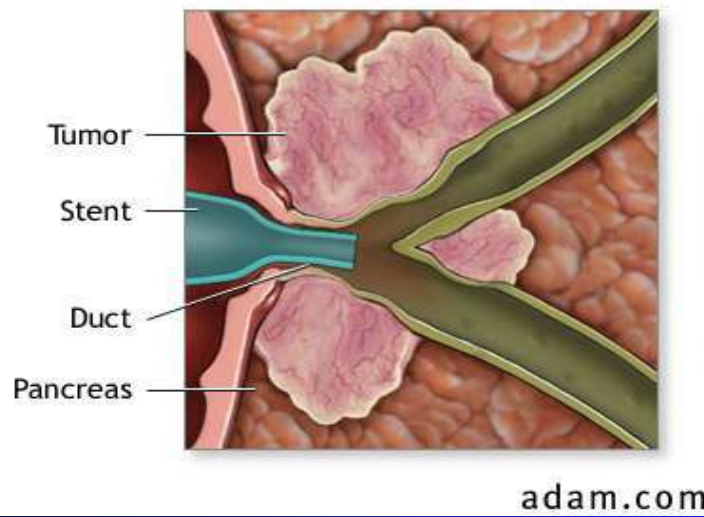
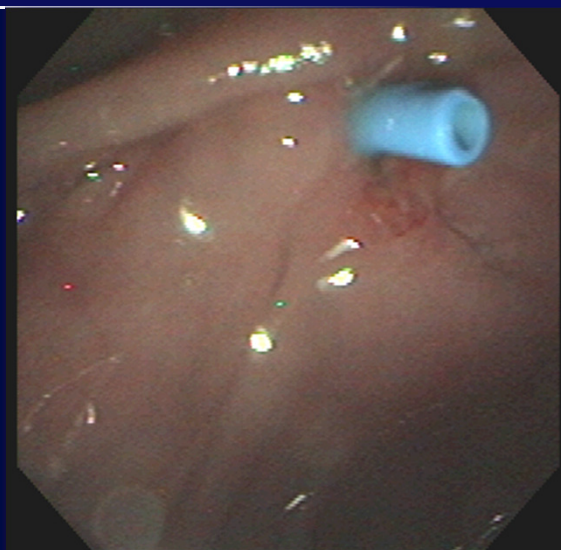


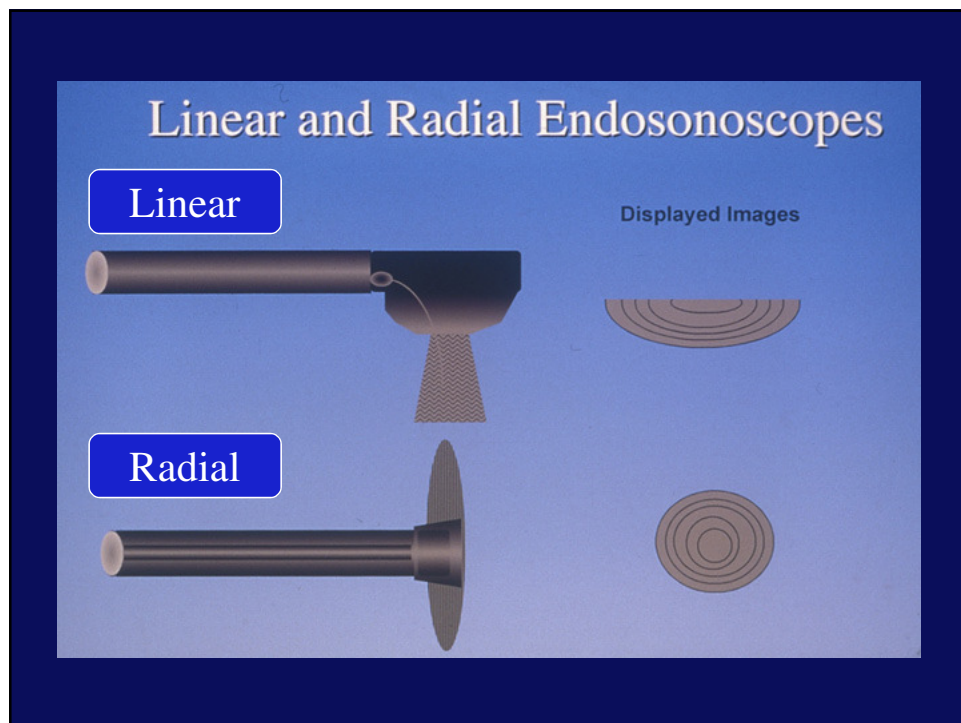
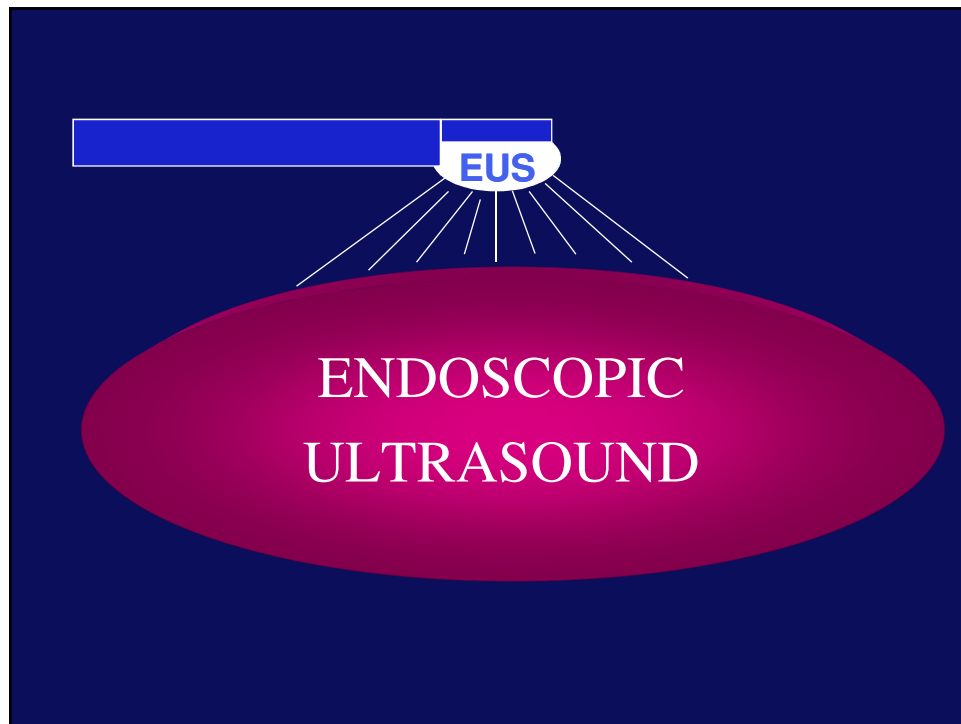
Figure 6-26 A guidewire is passed through a malig

Pancreatic Cancer

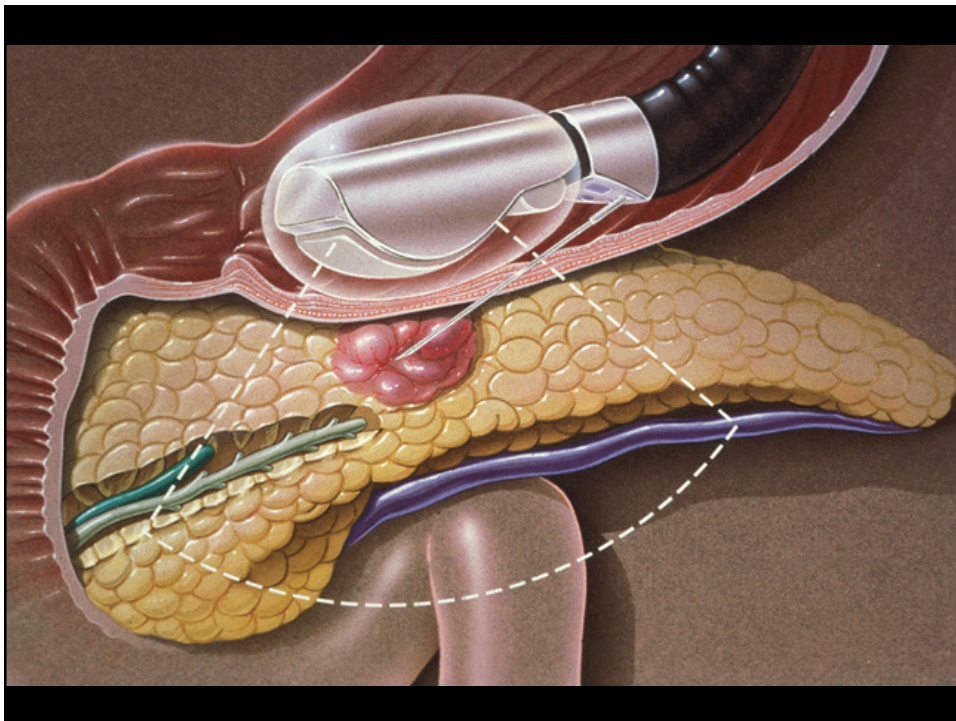


Stent

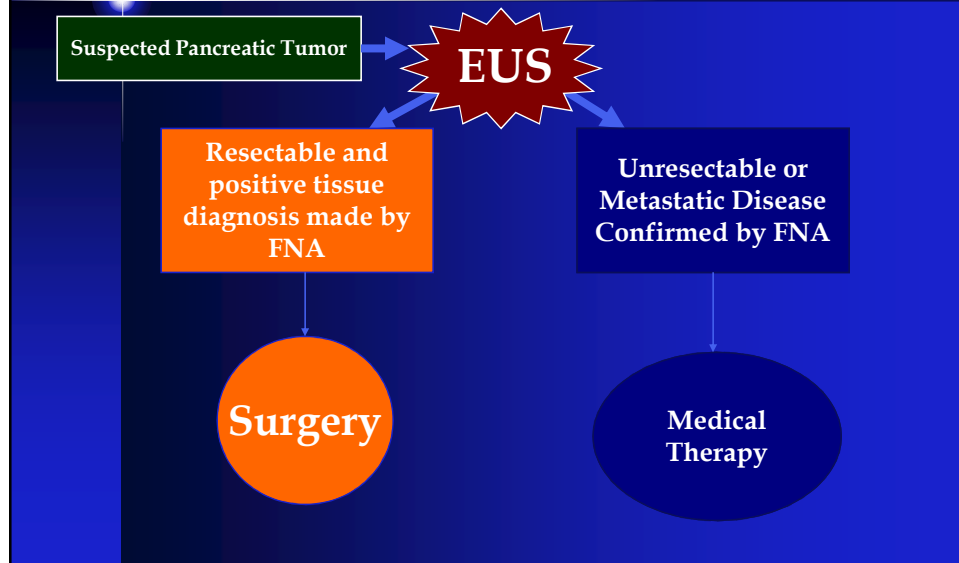




EUS Linear Scope



EUS Evaluation of Suspected Pancreatic Cancer



New Techniques

- Spy Glass
- Confocal Microscopy
- PDT



Cystic Lesions of the
Pancreas

Cystic Masses of the Pancreas

Benign:

with no chance of changing into a malignancy

Serous cystadenomas

Benign:

with a risk of changing into a malignancy (“premalignant”)

Mucinous cysts

- Mucinous cystadenomas
- Intraductal papillary mucinous tumors (IPMT)

Malignant

- Mucinous cystadenocarcinoma
- IPMT with carcinoma
- Pseudopapillary cystic tumor (low grade)

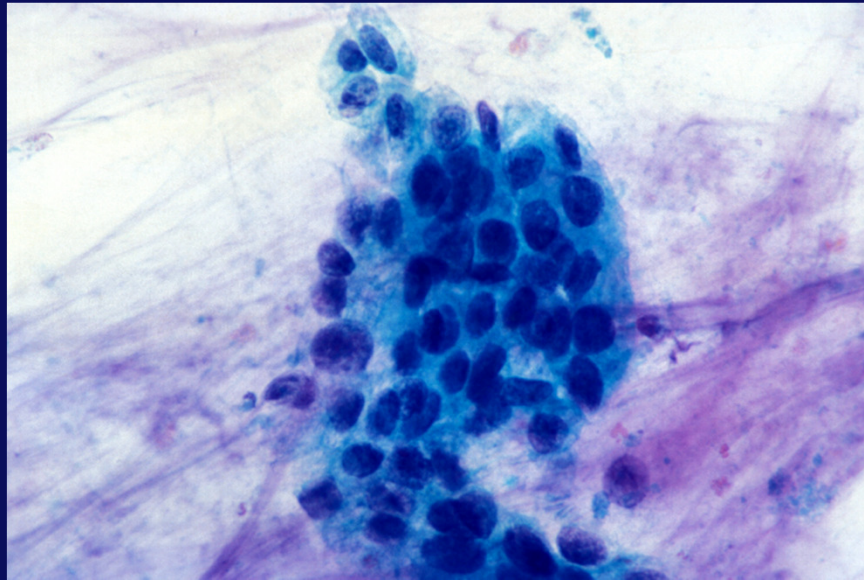
Inflammatory

- Pseudocyst



Most Things Cystic
are NOT Cancer
(But don't ignore them!)





Pancreatic cancer imaging: The new story

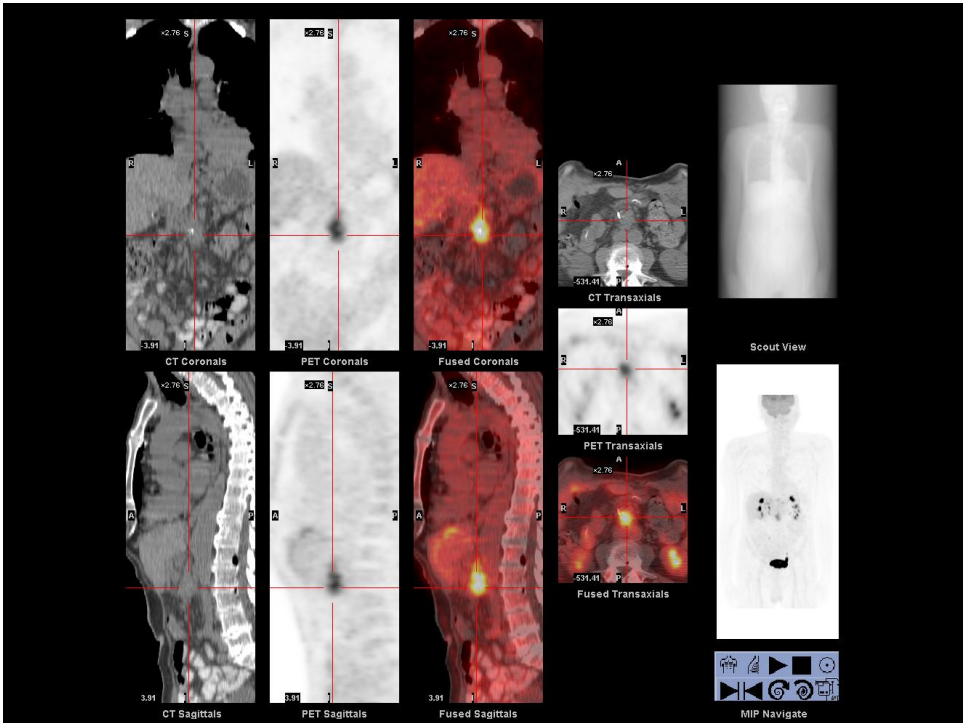
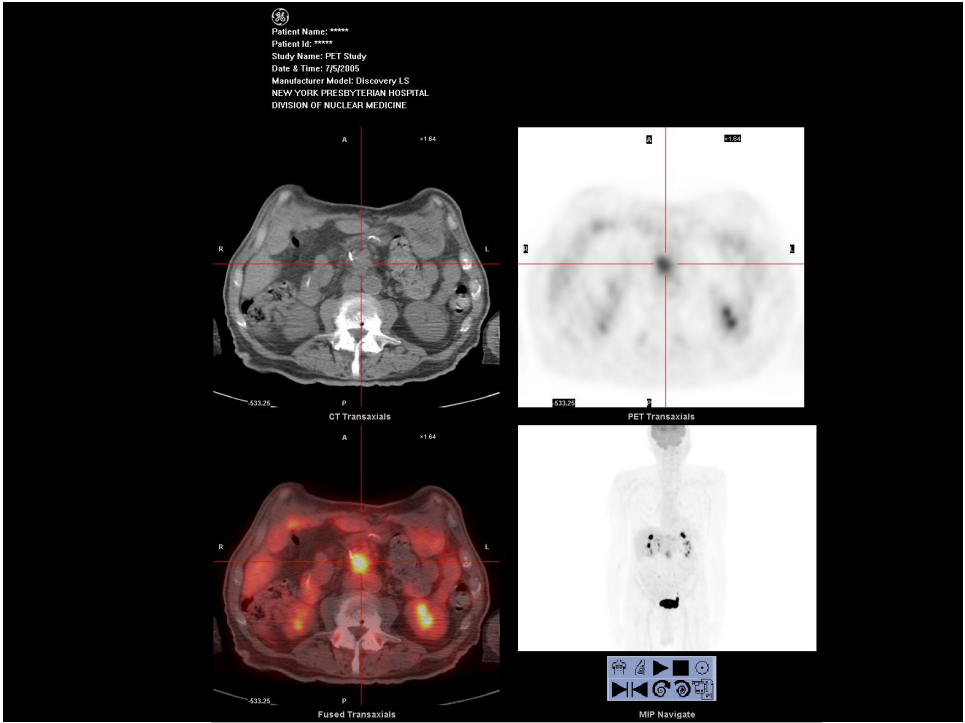
Modern **CT** and **MR** may now challenge the role of EUS as the best means of:

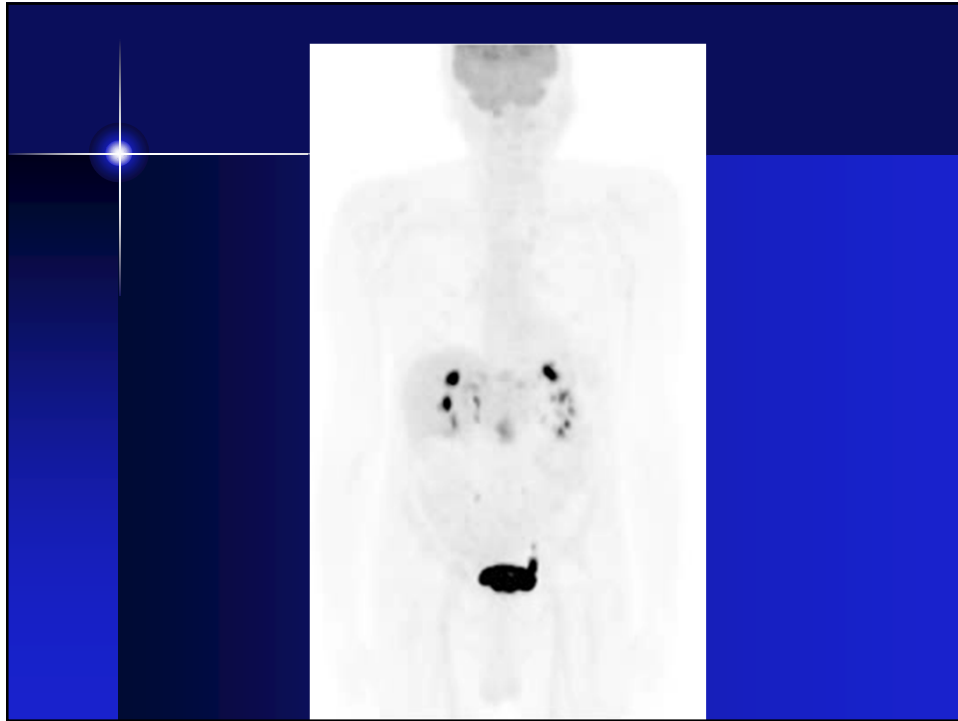
- Pancreatic mass detection
- Staging
- Resectability

PET/CT scan

- Nuclear scan - Not a structural scan
- Assess cellular metabolic activity
- Not shown to better than EUS, ERCP, CT or MRI
- May help locate metastatic disease as complementary procedure
- Often combined with CT scanning at the same time (PET/CT)







CA 19-9

- Blood serologic test
- Tumor marker - *NOT a screening tool*
- Sensitivity (70%) and specificity (87%)
- Can be elevated with benign biliary tract obstruction (non-cancerous lesion)

Future Interventions

- Use “smart contrast” to localize in malignant pancreatic tissue
- Isolate early genetic changes to screen for in the blood, bile or stool
- EUS guided injection of anti-tumor agents directly into the pancreatic mass
- 3D EUS
- 3D CT/MRI

There is *always* HOPE

Jack Andraka



Jack Andraka

- 15 years old
- Idea in biology class
- Use carbon nanotubes and antibodies
- “Dipstick” like test for a pancreatic cancer protein called mesothelin
 - Also seen in ovarian cancer and Mesothelioma
- May be accurate test for early pancreatic cancer

Conclusions

- Myriad of well established tools to help guide diagnosis and management
- Studies are complementary and should be used together
- Future holds great promise for additional innovations in earlier and better detection of pancreatic cancer

Questions?



Thank you for your participation!

Pancreatic Cancer Action Network
www.pancan.org

If you have questions, please contact our Patient and Liaison Services (PALS) program at (877) 272-6226 or e-mail pals@pancan.org.



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