Current Diagnostic Tools for Pancreatic Cancer

Presented by
Pancreatic Cancer Action Network
www.pancan.org
November 14, 2013

If you experience technical difficulty during the presentation:

Contact WebEx Technical Support directly at:
- US Toll Free: 1-866-229-3239
  Toll Only: 1-408-435 -7088
or
- Submit a question to the Event Producer via the Q&A Panel

For international support numbers visit:
http://support.webex.com/support/phone-numbers.html

Questions may be submitted anytime during the presentation.

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
Pancreatic Cancer: Current Diagnostic Tools

Mark B. Pochapin, MD
Director, Division of Gastroenterology
Sholtz-Leeds Professor of Gastroenterology
NYU Langone Medical Center
Professor of Medicine
NYU School of Medicine
An abnormality of the hepatobiliary system is suspected...

WHAT IS THE NEXT STEP?

ULTRASOUND

CT SCAN

MRI/MRCP

PET Scan

EUS

CA19-9
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:
- Magnetic Resonance Colangio-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

Normal ERCP

- Metal Stents
- Cystic Duct
- Bile Duct
- GB
- Pancreatic Duct
Diagnostic ERCP for Pancreatic Cancer

Double duct sign

Balloon Dilatation of Stricture
Pancreatic Cancer

Stent
ENDOSCOPIC ULTRASOUND

Linear and Radial Endosonoscopes

Linear

Radial
EUS Linear Scope
EUS Evaluation of Suspected Pancreatic Cancer

Suspected Pancreatic Tumor

EUS

Resectable and positive tissue diagnosis made by FNA

Surgery

Unresectable or Metastatic Disease Confirmed by FNA

Medical Therapy

Suspected Pancreatic Tumor

EUS

Resectable and positive tissue diagnosis made by FNA

Surgery

Unresectable or Metastatic Disease Confirmed by FNA

Medical Therapy
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

- 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.