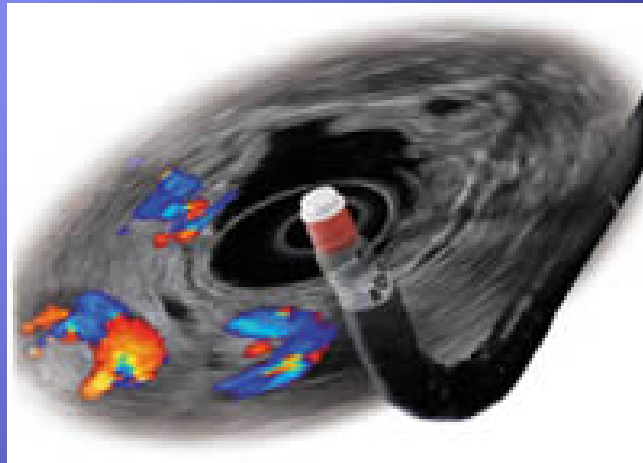


INTRODUCTION TO EUS



Andrew Taber, MD

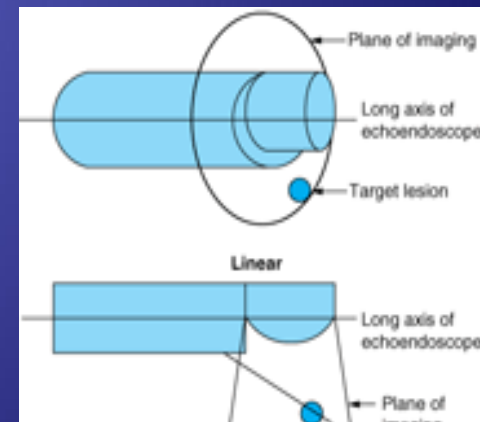
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Intro to EUS

- ◆ Equipment
- ◆ Indications
- ◆ Contraindications
- ◆ Risks/Complications
- ◆ Cases

Equipment

- ◆ Scopes
 - ◆ Radial
 - ◆ Linear Array
- ◆ Miniproboscopes/Specialty probes
 - ◆ through the scope probe (2-2.6mm)
 - ◆ Wire guided blind probe (8.5mm)



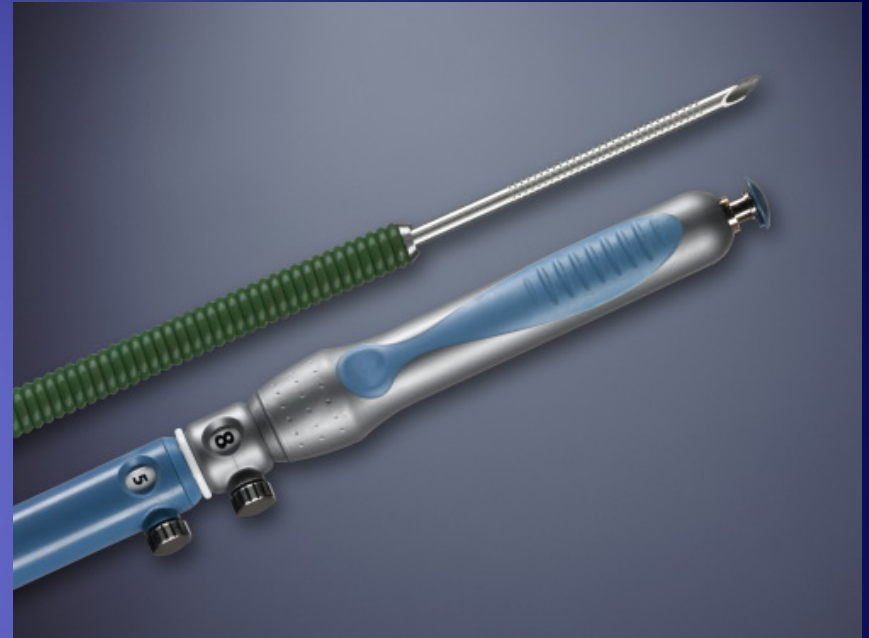
Equipment

- ◆ Ultrasound processor
 - ◆ Olympus and Pentax use freestanding standard ultrasound machines

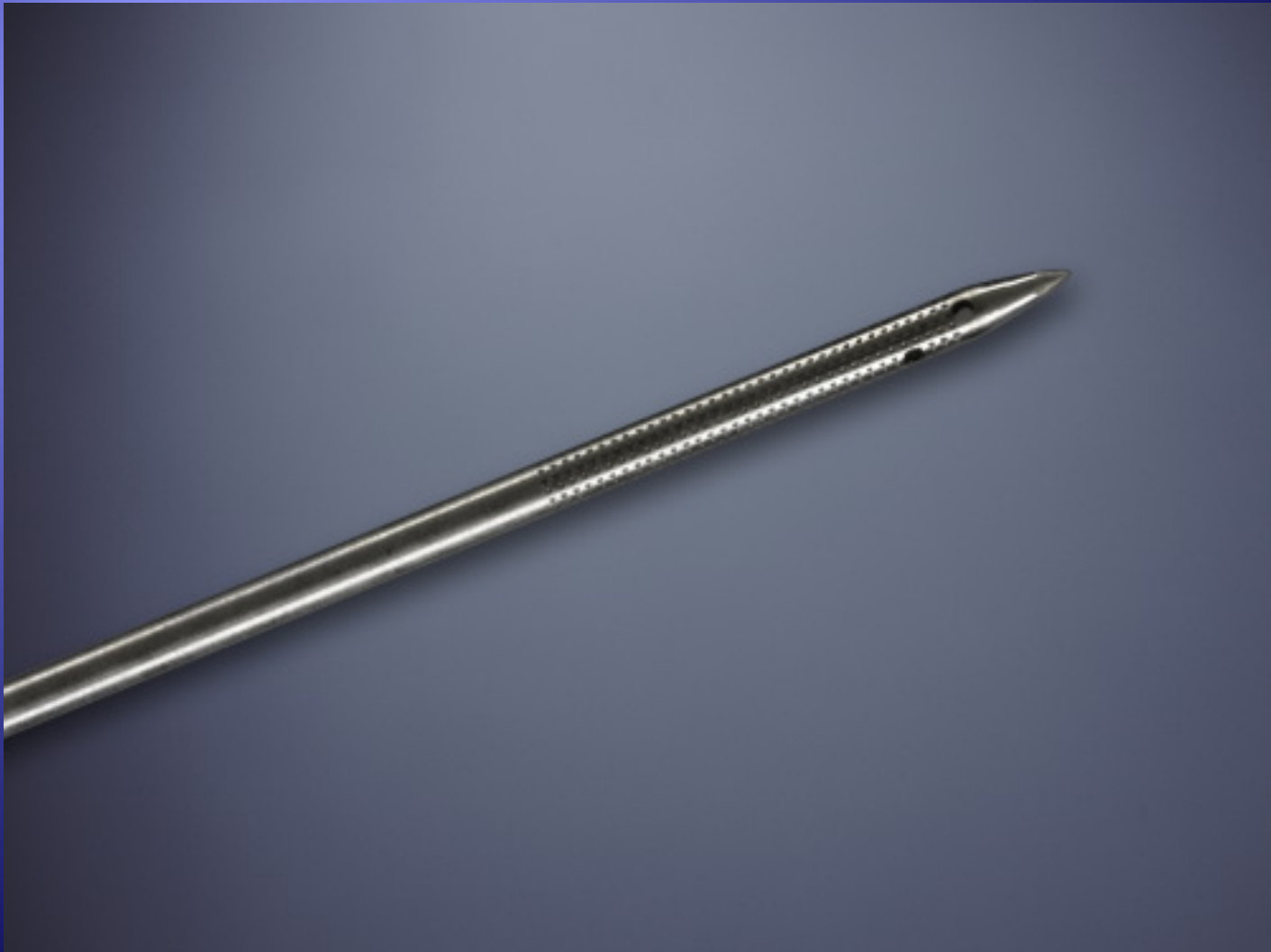


Equipment

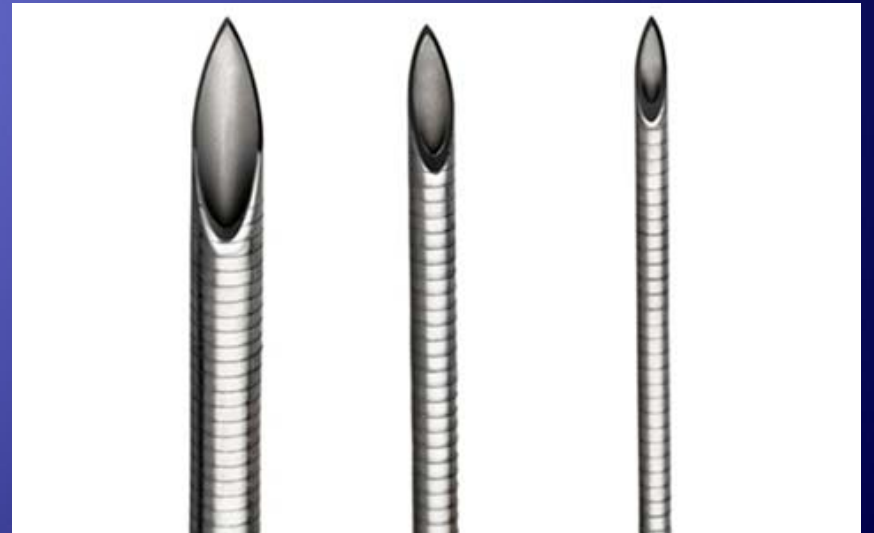
- ◆ Accessories
 - ◆ Water Pump
 - ◆ Needles
 - ◆ FNA : 19-25g
 - ◆ Core
 - ◆ Quick –Core
 - ◆ ProCore
 - ◆ Neurolysis



Equipment



Equipment



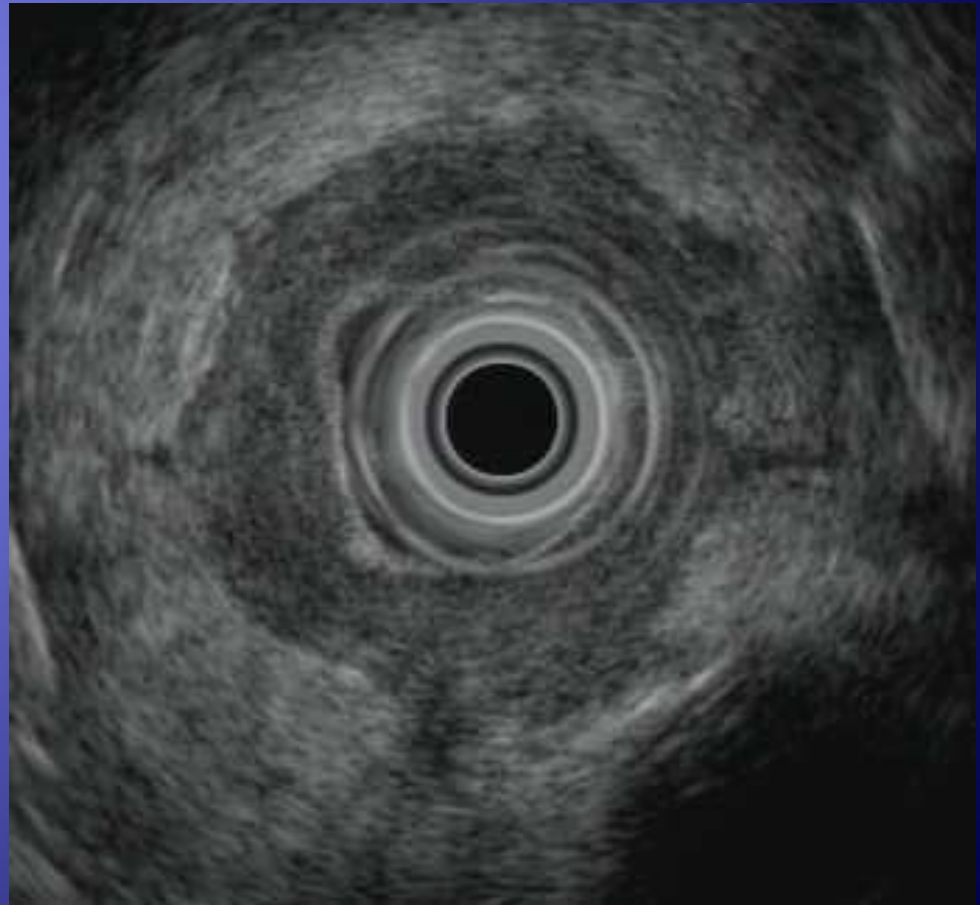
Equipment

- ◆ High carbohydrate, low protein, low fat, calorie supplement



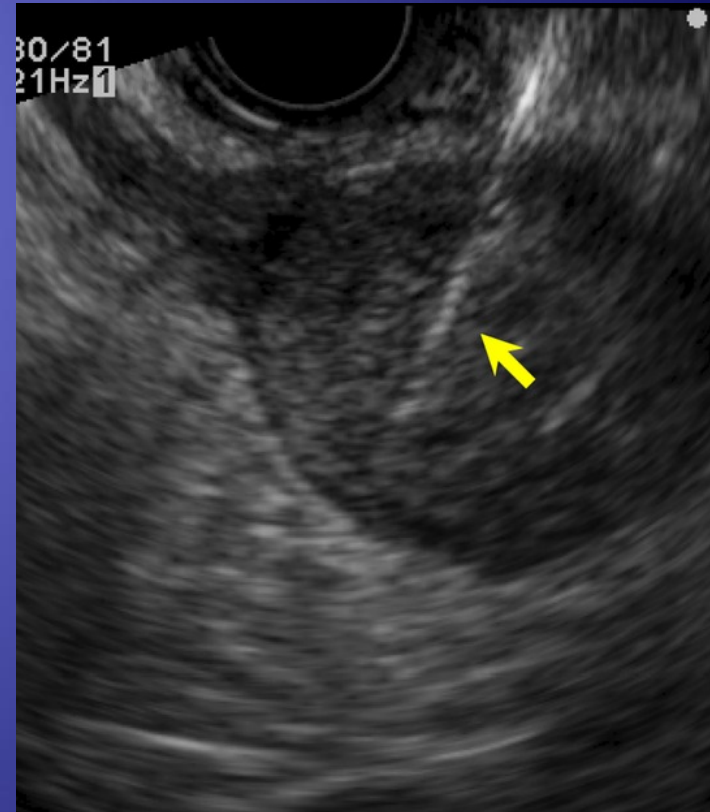
Indications

- ◆ Tumor Staging
 - ◆ Lung CA
 - ◆ Esophageal CA
 - ◆ Gastric CA
 - ◆ Pancreatic CA
 - ◆ Rectal CA



Indications

- ◆ Tissue Diagnosis
 - ◆ Solid pancreatic masses
 - ◆ Cystic lesions of the pancreas
 - ◆ Submucosal lesions
 - ◆ Nodal staging*



Indications

- ◆ Submucosal Lesions of the GI tract
 - ◆ Esophageal inclusion cyst
 - ◆ Varices
 - ◆ Hypertrophic fold/mucosal polyp
 - ◆ Lipoma
 - ◆ Carcinoid
 - ◆ Leiomyoma
 - ◆ GIST
 - ◆ Pancreatic rest
 - ◆ External compression by normal structure



TABLE 10.1**EUS Characteristics of Various Submucosal Tumors**

Cause	EUS Layers*	EUS Appearance
Gastrointestinal stromal tumor	Fourth (rarely second)	Hypoechoic (irregular borders, echogenic foci, anechoic spaces suggest malignancy)
Leiomyoma	Fourth, second	Hypoechoic
Aberrant pancreas	Second, third, and/or fourth	Hypoechoic or mixed echogenicity (anechoic ductal structure may be present)
Lipoma	Third	Hyperechoic
Carcinoid	Second and/or third	Mildly hypoechoic, homogeneous
Granular cell tumor	Second or third	Homogeneous hypoechoic mass with smooth borders
Cyst	Third	Anechoic, round or oval (three- or five-layer walls suggest duplication cyst)
Varices	Third	Anechoic, tubular, serpiginous
Inflammatory fibroid polyp	Second and/or third	Hypoechoic, homogeneous or mixed echogenicity, indistinct margin
Glomus tumor	Third or fourth	Hypoechoic, smooth margin, internal heterogeneous echo mixed with high echoic spots
Lymphoma	Second, third, and/or fourth	Hypoechoic
Metastatic deposits	Any or all	Hypoechoic, heterogeneous

*First layer, interface of luminal fluid and mucosa; second layer, deep mucosa; third layer, submucosa; fourth layer, muscularis propria; fifth layer, serosa or adventitia.

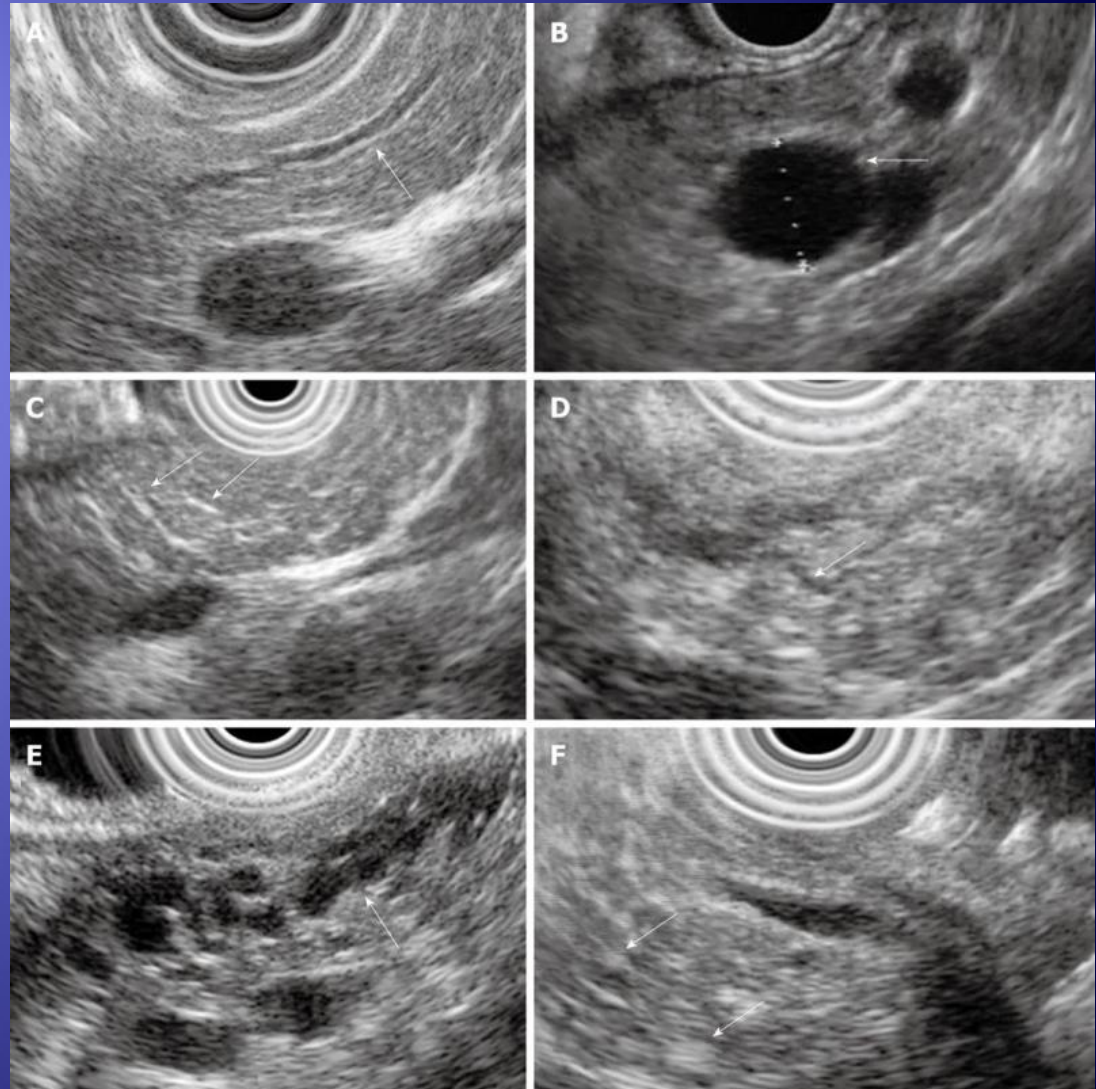
Hawes et al. *Endosonography*, 2nd Edition

Indications

- ◆ Therapeutic
 - ◆ Celiac plexus neurolysis
 - ◆ Pseudocyst drainage
 - ◆ Access/drainage of otherwise inaccessible biliary and pancreatic ducts
 - ◆ Coil embolization of varices
 - ◆ Fiducial placement to guide XRT
 - ◆ Transduodenal GB drainage

Indications

- ◆ Others:
 - ◆ R/O chronic panc
 - ◆ R/O CBD stones
 - ◆ Z-E
 - ◆ Incidentalomas



Contraindications

- ◆ Similar to that of general endoscopy
- ◆ Altered anatomy preventing access
- ◆ FNA
 - ◆ INR >1.5
 - ◆ PLT $<50K$
 - ◆ Anti-platelet therapy

Risks/Complications

- ◆ Perforation – 0 - 0.4%
- ◆ Bleeding – 0 - 0.4%
 - ◆ Self-limited bleeding in up to 6% of cases using FNA
- ◆ Infection – 0.3%
- ◆ Pancreatitis – 0.3-2%
- ◆ Missed or Misstaged Lesions



Wake Up!!!

Case #1

- ♦ 70 y/o F w/ a h/o a thyroid nodule who was found to have a 2.5cm mass in the subcarinal space on CT scan concerning for an enlarged lymph node.

HITACHI U of L Health Care

FR:21

P.L MI

1290499

A

03-FEB-12 11:43:42

Calip

D1: 25.0 mm

D2: 18.6 mm

016

30 cm

mass

D1

No.13/18

BG:8 65/2/20/A/54

EG-3630UR 10M 50mm

1 Scroll

2

3

4

5 Ratio Dis

6 Area-E

7 Ratio Area

- ◆ FNA is performed x1 and the needle is noted to “swim” in the lesion.
- ◆ What’s the most likely diagnosis?

Case #2

- ◆ 58 y/o alcoholic male who underwent EGD for dysphagia to solids and 20lb wt loss was found to have a malignant appearing mass in the distal esophagus. Biopsies confirm adenocarcinoma. He presents for EUS for staging.

Case #2

- ♦ Video

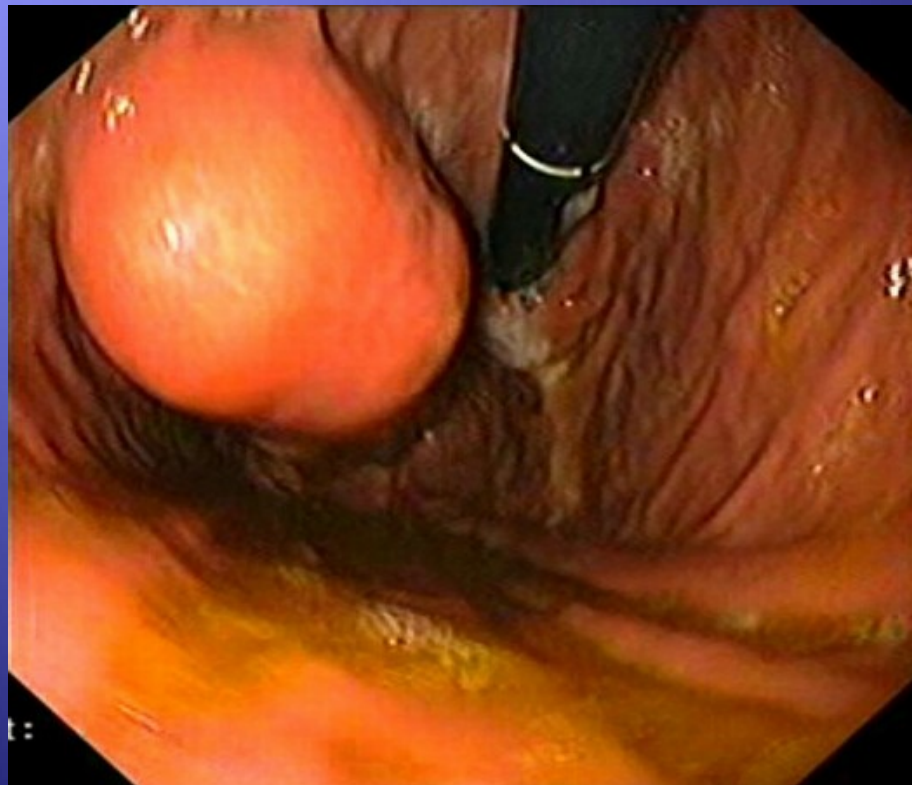
- ♦ <http://www.youtube.com/watch?v=w6JMscnnSx8>

Case #2

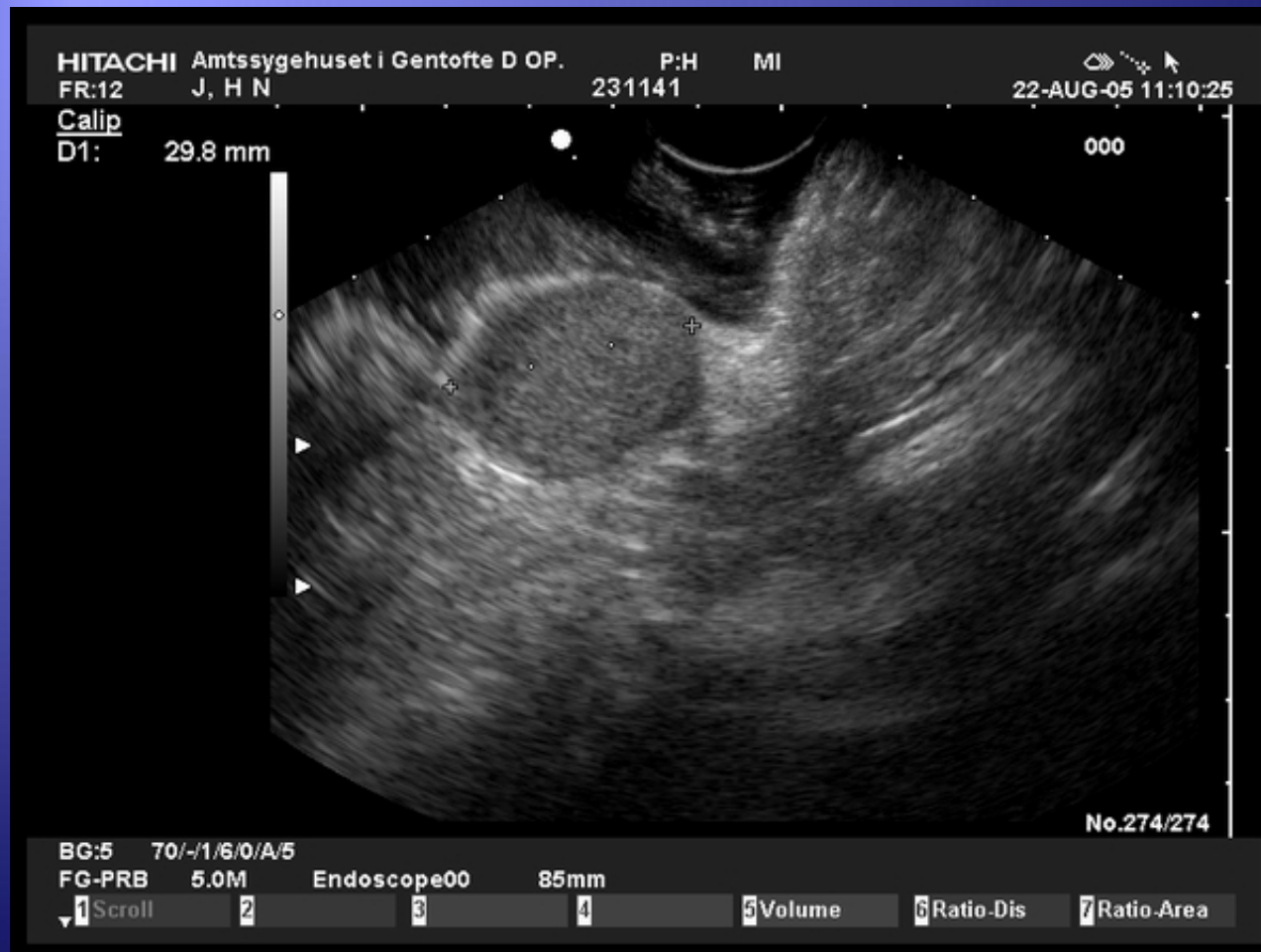
- ◆ What is the T stage?

Case #3

- ◆ 43 y/o M who underwent EGD for dyspepsia and was found to have a 4cm mass in the fundus.



Case #3



Case #3



Case #3

- ◆ What's the differential?

Case #3

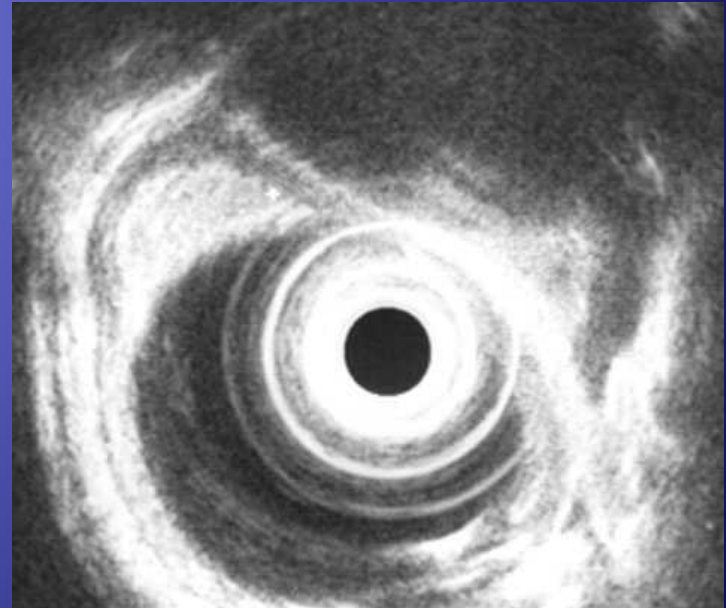
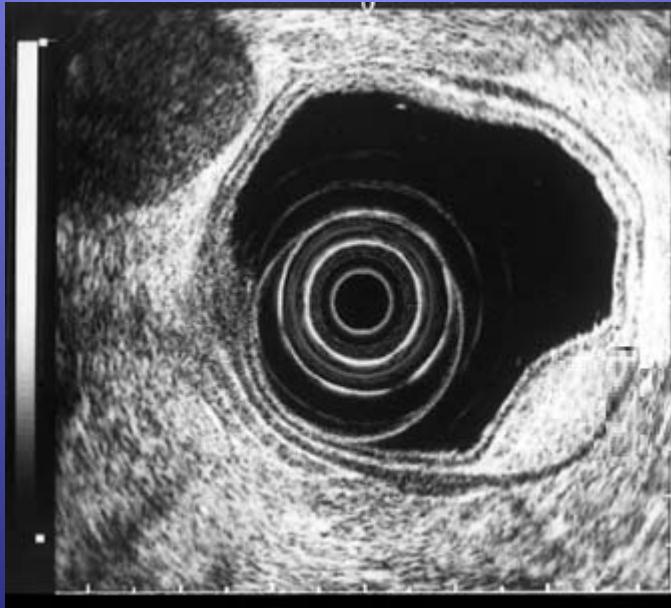
- ◆ FNA shows sheets of spindle cells on prelim path
 - ◆ What will confirm the diagnosis?
 - ◆ What are your recommendations?

Case #4

87 y/o veteran found to have a 2cm submucosal mass in the antrum on EGD.



Case #4



Case #4

- ◆ How would you describe the lesion?
- ◆ What layer is it arising from?
- ◆ What is the diagnosis?

Case #5

- ◆ 41 y/o w/ longstanding GERD on chronic PPI who was found to have a small submucosal lesion in the proximal antrum on EGD.



Case #5



Case #5

- ◆ What's the most likely diagnosis?

Case #6

- ♦ 36 y/o F w/ a h/o acute pancreatitis and chronic abdominal pain who is referred for EUS to r/o chronic pancreatitis.

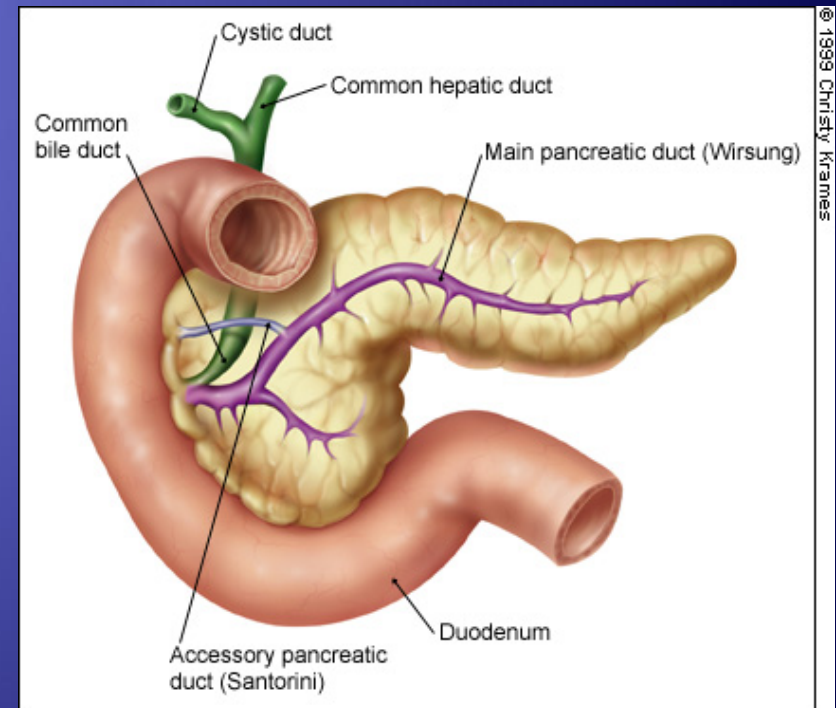
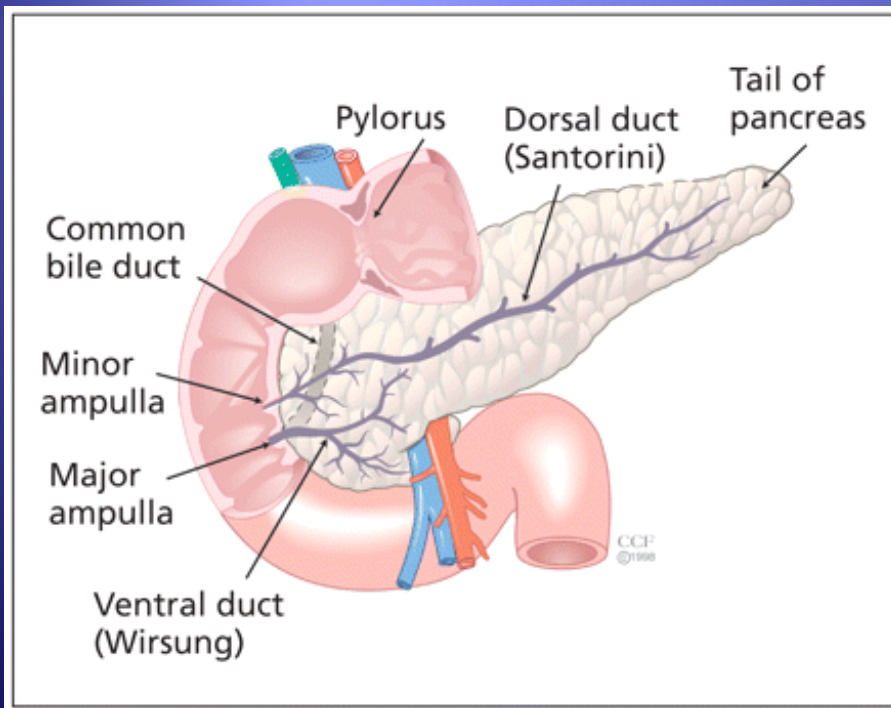
Case #6

- ◆ Video 2
- ◆ http://www.youtube.com/watch?v=Ucm_xpCc2xo

Case #6

- ◆ What's the diagnosis?

Case #6



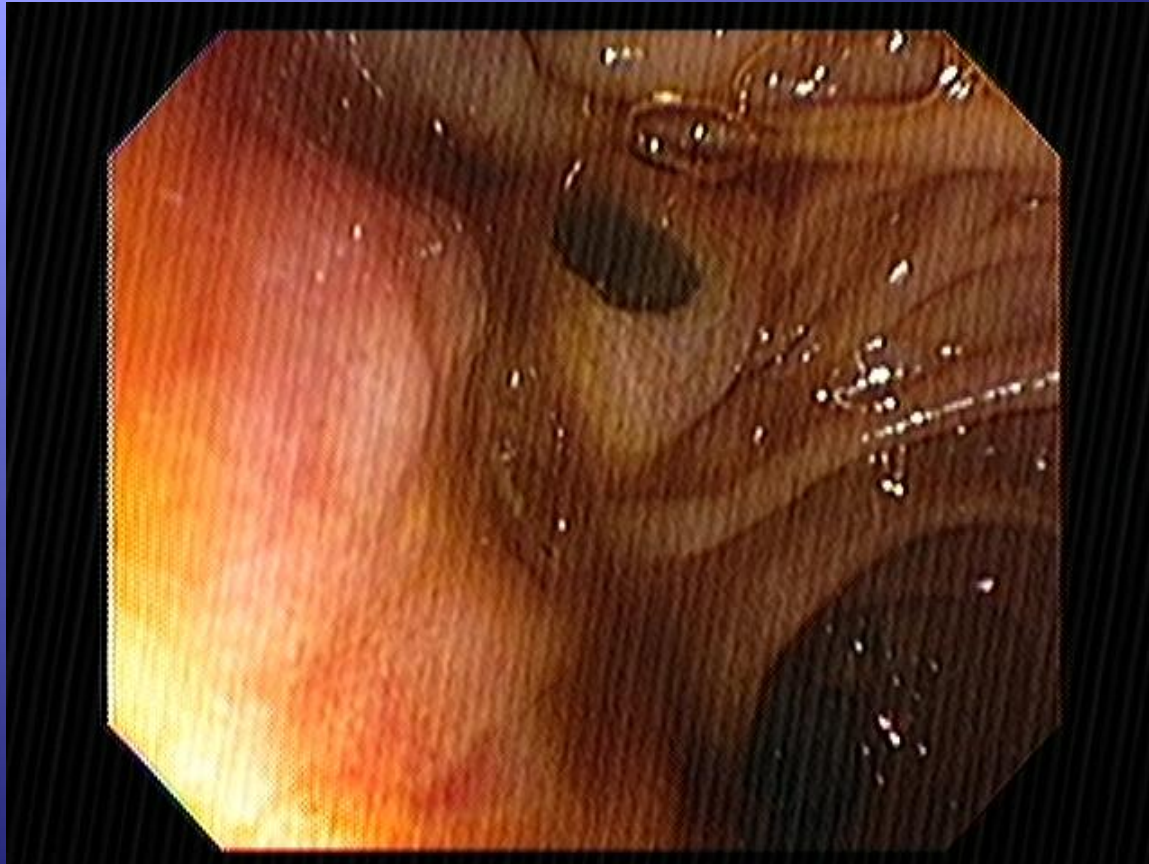
Case #7

- ◆ 65 y/o WM w/ a h/o pancreatitis who was found to have a dilated PD on CT for w/u of abdominal pain who presents for EUS evaluation.

Case #7



Case #7



Case #7

- ◆ What's the diagnosis?
- ◆ What treatment do you recommend?

