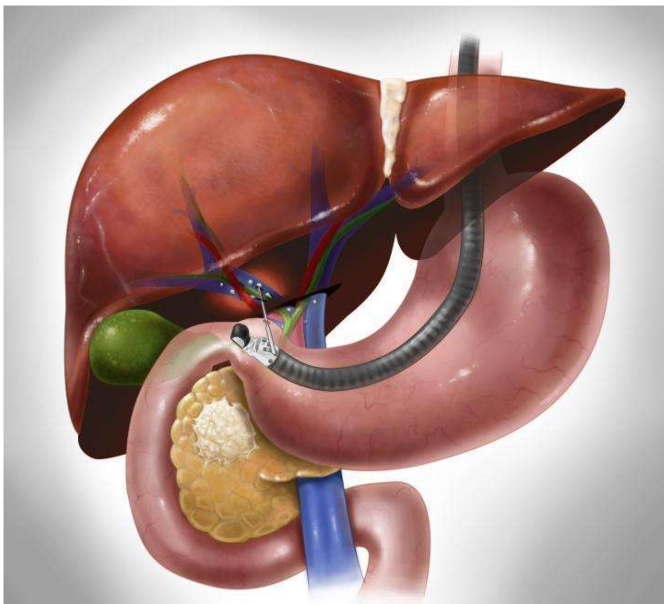
EUS service @ GLMS



Dr Deepu David MD DM FRACP
Gastroenterologist
Auckland city Hospital and Greenlane medical specialists

Ultrasound waves

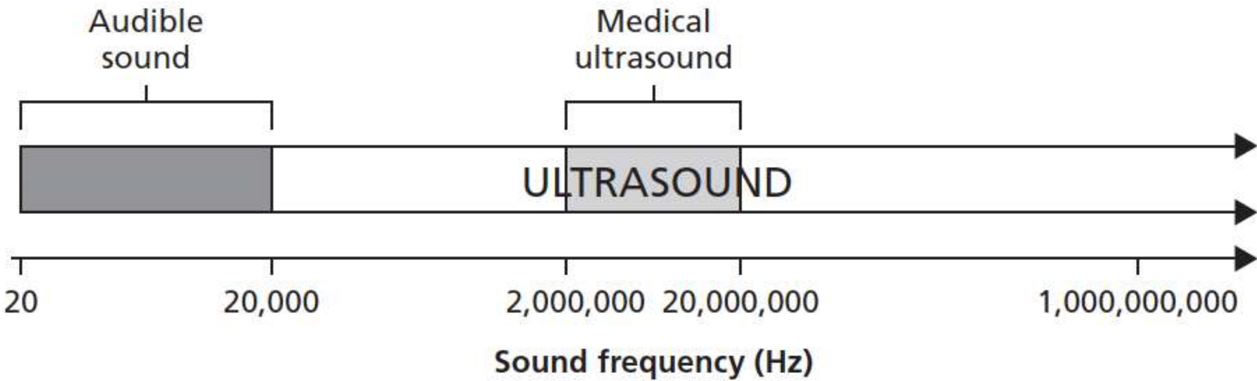
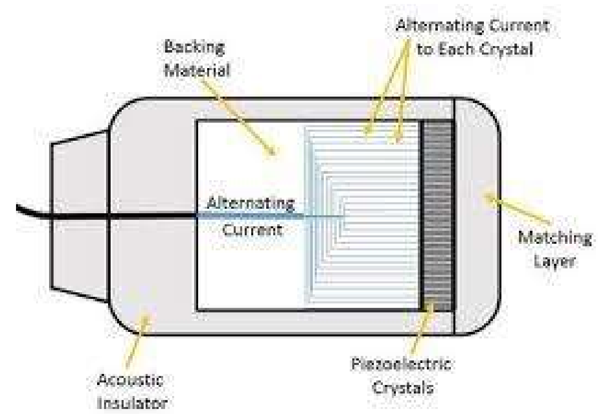
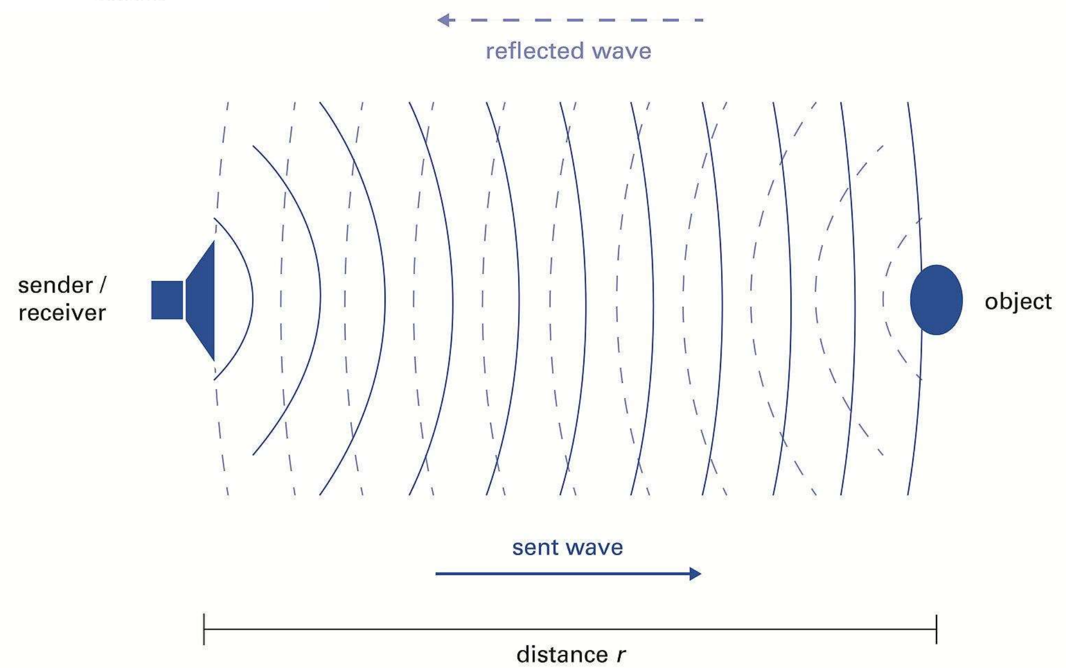


Figure 2.1 The frequencies of audible sound and ultrasound.

Piezo electric crystals





Ultrasound wave propagation.

- Speed of transmission is largely determined by the stiffness of the tissue: the stiffer the tissue, the faster the speed.

- Strong reflections – white dots - Gall stones, bone.
- Weaker reflections – grey dots - Most solid organ, thick fluid, necrosis.
- No reflection – black dots - Cyst fluid, blood.

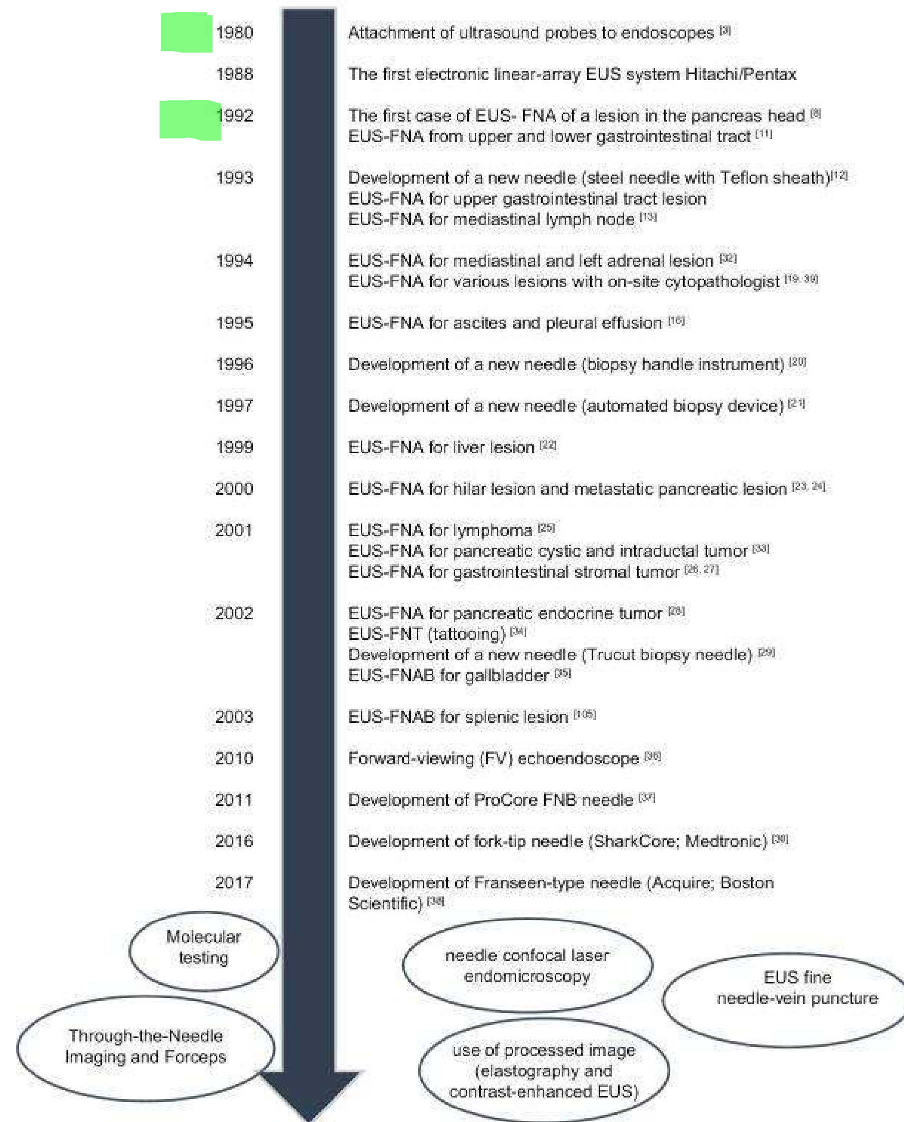
Scope of discussion

- 1. Introduction.
- 2. Evolution of endoscopic ultrasound.
- 3. How is it beneficial compared to other modalities?
- 4. Common Indications
- 5. Advanced procedures.
- 6. Case scenarios.

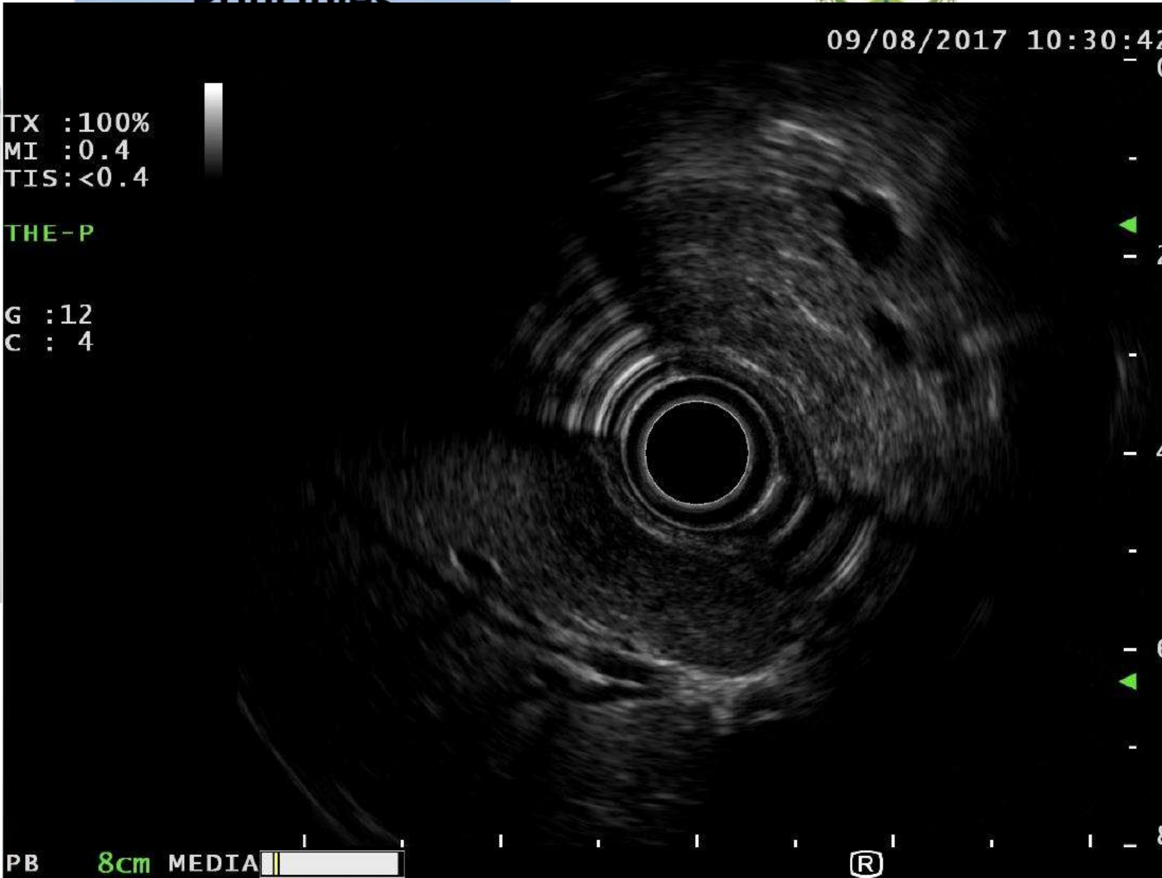
Introduction to EUS

- EUS has been in existence last 40 years and has been evolving over the years.
- Two technologies put into one – can have endoscopy as well as eus at the same session.
- High resolution/real time imaging.
- Started as a diagnostic tool and currently a therapeutic modality.

Evolution of EUS

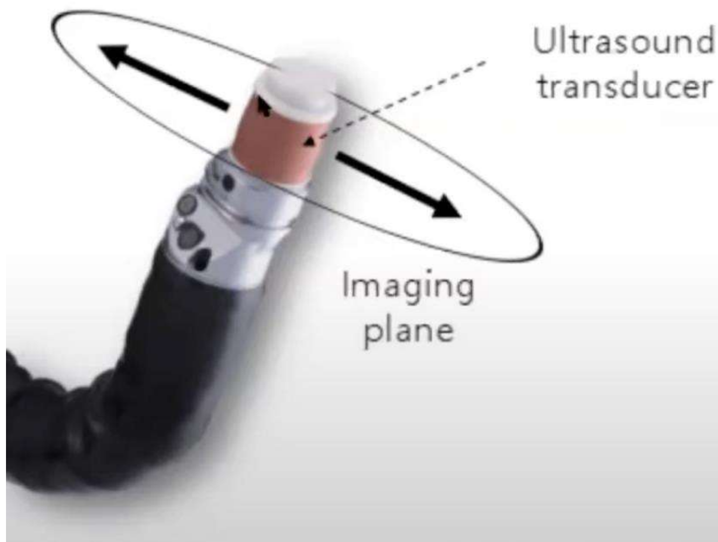


Principles



Instruments

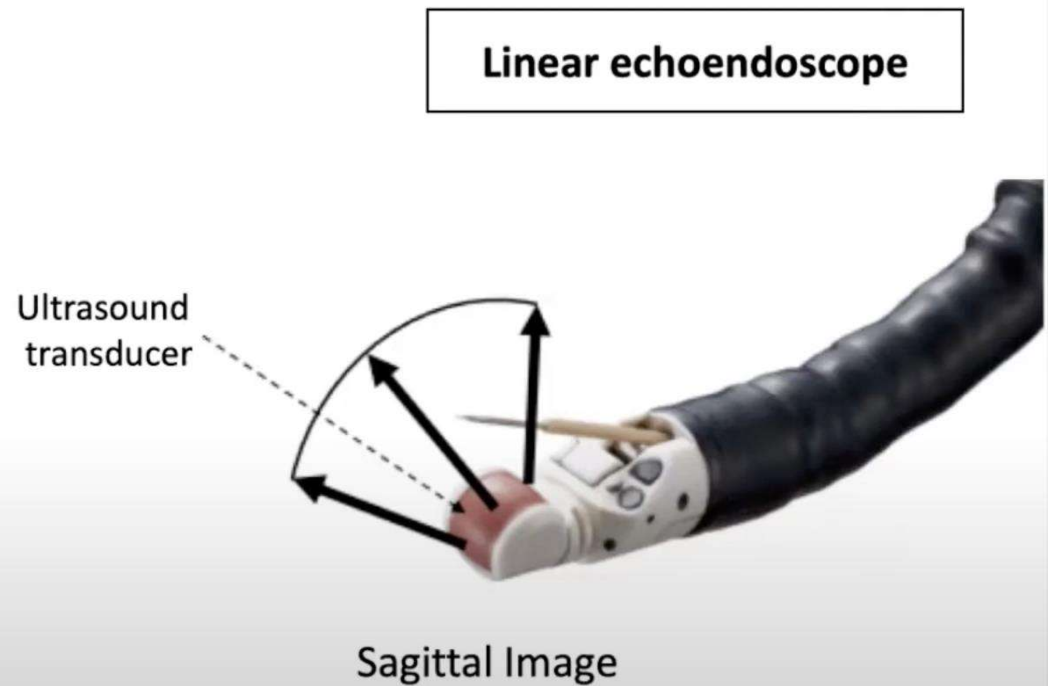
Radial echoendoscope



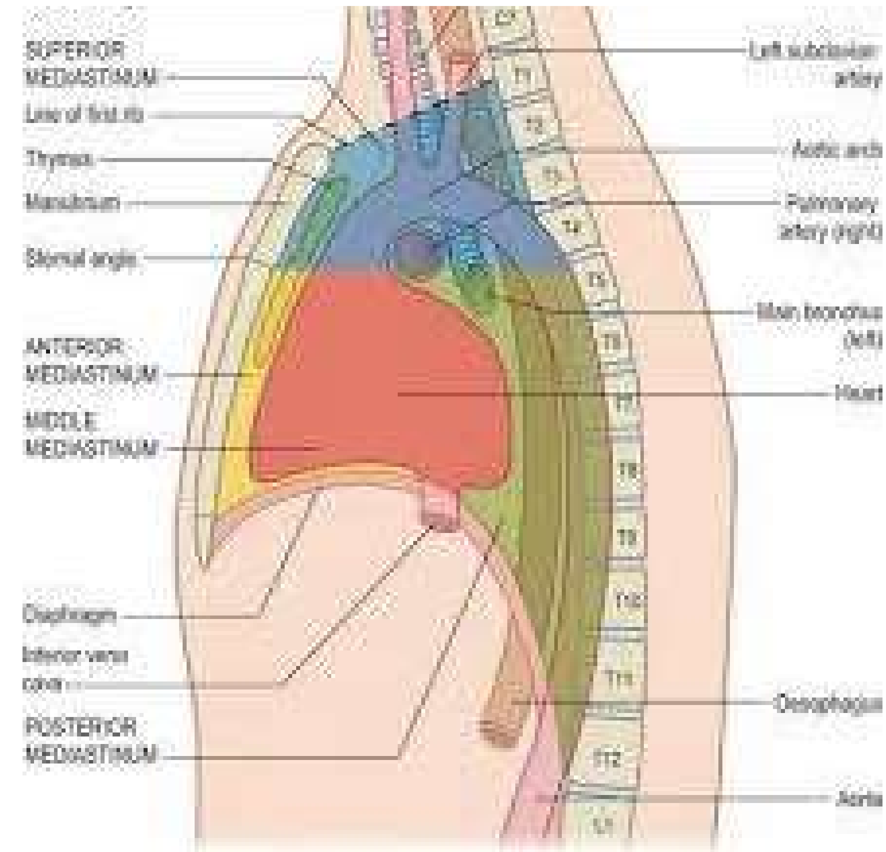
- Ultrasound scanning range: 360^0
- Field of view: 100^0
- Direction of view: 55^0
- Depth of field: 3-100 mm
- Working channel diameter: 2.2 mm

Instruments

- Ultrasound scanning range: 180^0
- Field of view: 100^0
- Direction of view: 55^0
- Depth of field: 3-100 mm
- Working channel diameter: 3.7 mm

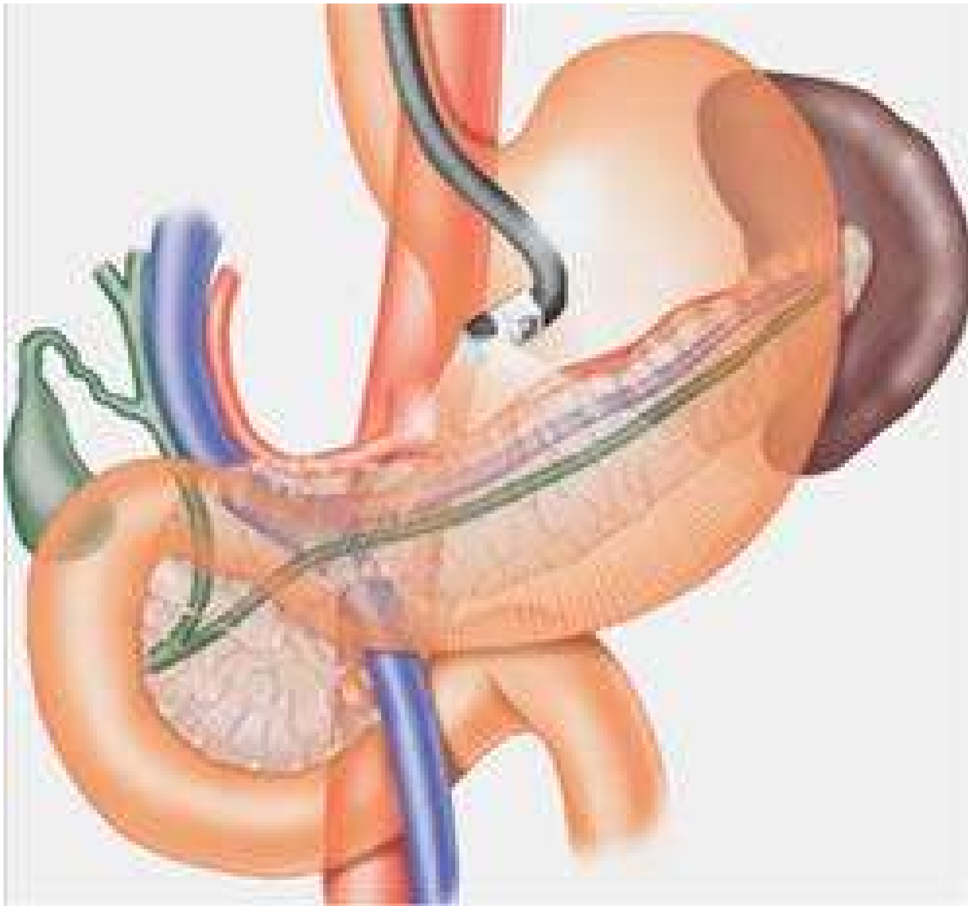


FNAC – accessible sites



- Peri-oesophgeal lesions/LN.
- Subcarinal space/Mediastinal nodes
- Periaortic LN
- Mediastinal mass
- Oesophageal submucosal lesions (Leiomyoma)
- Malignant stricture oesopahgus.
- Lung cancer/early Oesophageal cancer staging/depth of invasion.

FNAC – accessible sites



- Peripancreatic /pancreatic lesions (solid/cystic).
- Retroperitoneal mass/LN
- Periportal LN
- Left adrenal lesions
- Renal lesions
- Liver and splenic lesions (rare)
- Coeliac nodes
- Mass lesions – bile duct cut off.
- Submucosal lesions (GIST)