Ultrasound
-How does it work

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Ultrasound
Diagnostic Ultrasound

- High frequency sound waves emitted from sound source (transducer)
- Transducer placed on patient’s body
- Sound waves echo off interfaces of internal structures and return to transducer
- Information is processed and displayed on a monitor based on time and intensity of returning echo

Special terms used on ultrasound reports
- Echogenic, Hyperechoic, Hypoechoic, Anechoic
Ultrasound Principles
Ultrasound Principles
Ultrasound Abdomen
Diagnostic Ultrasound

• Interfaces are the signal source

• Major applications:
  • Gall bladder evaluation
  • Fluid collections
  • Differentiation of cysts from solid
  • Fetal evaluation
  • Solid organ evaluation, heart, liver, pancreas, kidney

• Doppler ultrasound particularly useful for vascular flow
Ultrasound Machine
Ultrasound Machine in use
US 1st Trimester Fetus
Cystic Hygroma
Brain Parenchymal Hemorrhage
Normal Liver US
Normal Liver – Common Duct

Common Duct

Portal Vein

LONG CBD
Normal Gallbladder Ultrasound
Gall Bladder US

Gallstones
Gallstones

- Ultrasound upper abdomen
- Longitudinal scan
- Round echogenic structures in gallbladder = stones (arrows)
- Acoustic shadowing (lines)
- Bile is dark (anechoic)
Normal Right Kidney
Endovaginal Imaging

Uterus outlined

vessels
Pelvic Ultrasound IUD
Pelvic Ultrasound
Appendicitis
Mucoceole Appendix
Testicular Torsion/ Infarction

Bright echo related to infarction