Nuclear Medicine Imaging

- Hot Spot Images; Areas of increased flow and metabolism
- Ex... Met static disease, Inflammatory processes
- Cold Spot Images; Areas of diminished flow or metabolism
- Ex... Cardiac Perfusion Infarct
Clinical Indications

- Hot Spot Bone
- Cold Spot Thallium
Frequently Performed Examinations

• Bone scans
  – Reasons to have a bone scan:
    • Fractures
    • Bone metastases
    • To investigate unexplained bone or back pain
    • Follow up lesion seen on plain x-ray
    • A vascular necrosis
Frequently Performed Examinations

– Reasons to have a bone scan:
  • Investigate possible child abuse
  • To establish viability of bone graph
  • Reflex sympathetic dystrophy (RSD)
Frequently Performed Examinations

- Hepatobiliary scans
  - Reasons to have hepatobiliary scans:
    - To diagnose suspected acute cholecystitis
    - To investigate possible biliary obstruction
    - To detect biliary leak
Total Ejection Fraction --
Ejection Fraction: 52.40 %
Ejection Rate: 1.71 %/min
Frequently Performed Examinations

• Lung Imaging
  – Reasons for lung imaging:
    • To diagnose pulmonary embolism
    • To diagnose recurrence of pulmonary embolism
    • To predict quantitative residual lung function after lung surgery
Frequently Performed Examinations

• Myocardial perfusion imaging
  – Reasons for myocardial perfusion imaging:
    • To confirm known or suspected coronary artery disease
    • To differentiate between coronary and non-coronary chest pain
    • To assess cardiac risk for preoperative patients having surgery
    • Follow up patients after heart surgery
Frequently Performed Examinations

• Renal Imaging
  – Reasons for renal imaging:
    • To assess function of kidneys
    • To diagnose or exclude urinary tract obstruction
Frequently Performed Examinations

• Gastric Empty Study
  – Reasons for gastric empty study:
    • To determine emptying rate of stomach
Max ROI Counts = 38954
Actual: T 1/2 = N/A
Est 1: T 1/2 = 120.94 min
Est 2: T 1/2 = 169.17 min
Frequently Performed Examinations

• Infectious Imaging
  – Reasons for infectious imaging:
    • To localize site of infection
Frequently Performed Examinations

• Positron Emission Tomography PET
  – Reasons to have pet imaging:
    • Detect diagnose, stage, and restage cancer
    • Monitor cancer therapy
    • Myocardial viability
    • Evaluate patients for dementia