Applications of Diagnostic Imaging
Computed Tomography
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Computed Tomography

- Ionizing radiation
  - Requires concern and careful utilization
- Excellent discrimination between subtle tissue density differences
- Moderately expensive
- Readily available
- Growing spectrum of applications across a broad spectrum of diseases and body parts
Computed Tomography

• Primary applications:
  • First line evaluation in suspected cerebral vascular events – hemorrhagic vs. ischemic
  • First line evaluation in soft-tissue and skeletal trauma
  • First line evaluation in suspected pulmonary embolism
  • First line evaluation in suspected urinary calculi
Computed Tomography

• Primary applications:
  • Head & Neck
    • CVA evaluation
    • Carotid and intra-cerebral vascular evaluation
    • Head-neck trauma – evaluation for subdural and epidural hematoma – evaluation for cervical fracture
    • Neoplasm staging
  • Thorax
    • Lung- mediastinum nodule/ mass evaluation,
    • Cardiac, coronary, pulmonary and great vessel vascular evaluation
    • Airway evaluation
    • Neoplasm staging
Computed Tomography

• Primary applications:
  • Abdomen/ Pelvis
    • Solid organ evaluation
    • Urinary tract evaluation for calcification
    • CT angiography
    • CT colonography
    • CT urography
    • Lumbar spine evaluation (pacemakers, stimulators)
    • Neoplasm Staging
Computed Tomography

• Primary applications:
  • Bones & Joints
    • 3-D joint reconstructed images
    • Evaluation of fracture union
    • Evaluation of neoplasm / extent

• Secondary applications:
  • Evaluation of patients with a contraindication to MRI imaging
  • Bone mineral density analysis