SNEAK PEAK OF THE READING ROOM: WHAT RADIOLOGISTS LOOK FOR IN CT EXAMS

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DISCLOSURES

• Galil Medical Consultant
• NIH funding for CEUS
WELCOME TO THE READING ROOM

• What makes a good exam?
• When is it too good?
• How to achieve a balance.
PERSPECTIVE

• Radiologist
  • Perception
  • Qualitative

• Physicist
  • Measured
  • Quantitative
TOUR OF THE READING ROOM
NOTHING GETS DONE WITHOUT THE TEAM
WHAT DO RADIOLOGISTS USE TO MAKE A DIAGNOSIS?

- Lesion or pathology to background contrast discrimination
- Morphology
- Pattern recognition
- Textural differences
- Structured approach and knowledge of normal
WHAT MAKES A “GOOD EXAM”

• Appropriate technique
• Appropriate coverage
• Appropriate phases
RISKS FROM IONIZING RADIATION

• Deterministic-high dose immediate damage
• Stochastic-additive lower dose long term damage (increasing risk with increasing dose but effect unrelated to dose)
DOSE REDUCTION, HOW LOW CAN YOU GO?

- Patient
- Indication

ALARA

Guidelines from survey studies with large scale distribution of delivered dose.
TECHNICAL FACTORS TO BE CONSIDERED

- Overlapping scans/Coverage
- Pitch
- Beam energy
- Photon Fluence
- Beam collimation
- Attenuation related dose modulation (tube current)
- Iterative reconstruction
- Reconstructions
ADMINISTRATION OF IODINATED CONTRAST

- Weight-based dosing has been shown to improve organ and vessel enhancement.
- Dual energy scanning allows us to decrease contrast dose.
- Smaller doses may not be as critical given decreased concern for CIN in patients with eGFR >30 ml/min.
- Split bolus dosing may decrease number of phases needed.
- In reality in many practices dose is determined by packaging.
SPLIT BOLUS INDICATIONS

- Urography
- Enterography
- Trauma
- Pancreatic imaging
PROTOCOL MANAGEMENT TEAM

- Lead CT Radiologist
- Section Lead Radiologists
- Medical Physicist
- Lead CT technologist
- Project Manager
- Quality Management consultant
- Quality Management fellow
- IT support
POINTS TO CONSIDER

• Active protocol management is key to maintaining quality and safety.
• Technologists are the “gateway” to protocol implementation.
• Techniques are always balanced with pre-test probability.