MULTISLICE COMPUTED TOMOGRAPHY

"Multidetector row computed tomography (MDCT) is a powerful noninvasive imaging tool with a number of advantages over previous computed tomography (CT) technology. The incorporation of multiple detector rows enables faster scanning and thinner collimation. As a result, the entire body can be imaged in a single breath hold with improved *z*-axis resolution. These improvements have also expanded the clinical applications of CT. MDCT is considered an acceptable alternative to conventional imaging techniques such as catheter angiography, intravenous urography, and barium enema.." (Fishman & Horton 2007)

CLINICAL APPLICATIONS:

- Head & Neck – advanced
  - Cerebrovascular imaging
  - Perfusion neuroimaging
- Chest – lungs, airways, chest wall
- Abdomen & Pelvis – advanced
  - Viscera – liver, kidneys, pancreas, adrenals
  - Trauma
- Whole body Imaging + Staging
- CT Bowel + Virtual Endoscopy
- CTA
- Cardiac CT
- CT Musculoskeletal
- Dual Source
- Perfusion CT

For each Topic, you will answer the following:

- What is the clinical application?
- Why is this an advancement? What is different in terms of the technique for acquisition?
- How is contrast usage optimized? (where applicable)
- How is radiation dose optimized?
- What is different in terms of post processing?
- What are the advances in software that allow for these clinical applications?
- How will these applications impact and improve diagnosis?
- How does this relate to practice? What is happening in the departments you work in? Is it the same? Is it different?

QUALITY & CONSISTENT IMAGING RELIES ON EXAMINER EXPERTISE!!!

REFER to the Media Library FOR RELEVANT ARTICLES. Use the DUT Library Summons, electronic databases and Google Scholar for relevant articles.

Review the following links: http://ctisus.com/ & http://www.mdct.net/mdct/eng/index.html

INSTRUCTIONS:

1. Each student to pick a topic.
2. SELECT 3 relevant articles that highlight the clinical applications and benefits on the topic. (the attached articles are not exclusive)
3. Summarise the main points from the article. The focus of the summary must be on the topics listed above. Attach articles for review.
4. REVIEW the articles and EVALUATE each peer's response, using the attached grading form. Add your comments to the blog.

Go to the DISCUSSION on the same topic and COLLABORATE.