

Missed Diagnoses on Abdominal CT: Lessons Learned



BACKGROUND



Diagnostic errors in radiology, particularly in abdominal CT scans, can have significant implications for patient care and outcomes:

- Perceptual errors:** Missed lesions or abnormalities, satisfaction of search errors.
- Interpretation errors:** Misclassification of lesion, failure to recognize clinical significance.
- Communication errors:** Inadequate or unclear radiology reports, lack of timely communication.
- Technical errors:** Inadequate or suboptimal imaging technique, artifacts or image quality issues.
- Knowledge-based errors:** Limited experience, knowledge gaps.
- Cognitive errors:** Anchoring bias, confirmation bias.



TOP SIX ORGANS AND PATHOLOGIES MISSED



1. **Vascular** – atherosclerosis/thrombi



2. **Abdominal wall** – ventral hernias

3. **Skeletal** – osseous lesions



4. **Liver** – steatosis



5. **Renal** – solid renal masses

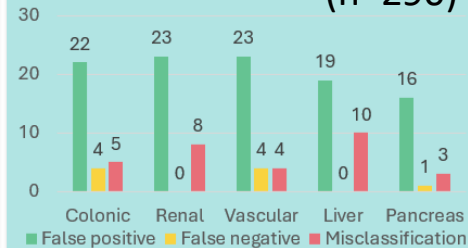
6. **Ureter** – calculi



AVAILABLE DATA



Errors by organ location and type (n=290)



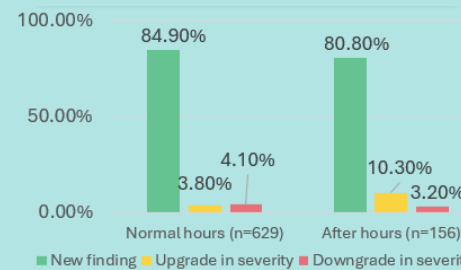
Chin SC et al:

Bar chart depicting frequency of errors by organ location and type¹.

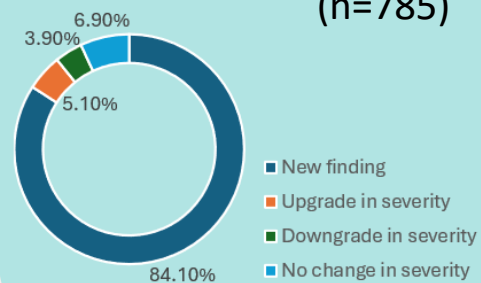
Errors by time of interpretation

Rosenkrantz AB et al:

Bar chart depicting frequency of errors by time of interpretation².



Implications on patient health (n=785)



Rosenkrantz AB et al:

Pie chart depicting overall proportion of errors by implications on patient health².



LESSONS LEARNED



Proper technique – Is the scan **adequate** for the clinical indication (contrast study/ decubitus imaging/ multiple phases/ added sequences)? If not, communicate.

Are we missing something? Get the full clinical information. Talk to the provider; sometimes the medical records aren't enough.

Complete the checklist – **Structured reporting** on – 1. all phases, 2. all planes (using multiplanar reconstruction or MPR) and 3. all **window settings**.

The more eyes the better! – Never be shy to approach a colleague or a senior for their opinion! Another pair of eyes help more often than one can imagine.

Take a break – Rest your eyes and avoid burnout. Shifts are there for a reason³.



REFERENCES

- Chin SC, Weir-McCall JR, Yeap PM, et al. Evidence-based anatomical review areas derived from systematic analysis of cases from a radiological departmental discrepancy meeting. *Clin Radiol*. 2017;72(10):902.e1-902.e12. doi:10.1016/j.crad.2017.06.001.
- Rosenkrantz AB, Bansal NK. Diagnostic errors in abdominopelvic CT interpretation: characterization based on report addenda. *Abdom Radiol (NY)*. 2016;41(9):1793-1799. doi:10.1007/s00261-016-0741-8.
- Horton KM, Johnson PT, Fishman EK. MDCT of the abdomen: common misdiagnoses at a busy academic center. *AJR Am J Roentgenol*. 2010;194(3):660-667. doi:10.2214/AJR.09.3280