

Clinical Neuroradiology: Radiology Rounds Revisited

Rahul Singh, Gabriel Virador, Ahmed K. Ahmed, Amra Sakusic, Benjamin Eidelman, Prasanna Vibhute, Sukhwinder S. Sandhu

Background

- The ACR's Imaging 3.0 Initiative aims to reverse the isolation between radiologists and clinicians caused by the introduction of PACs and EHR.
- One way to increase radiologist clinical engagement is by **re-instituting radiology rounds**.

Objective:

- The purpose of this study is to evaluate the value of **having a neuroradiologist present on neurology inpatient rounds**.

	Suboptimal	Optimal
Number of Imaging Studies	25/44 (57%)	19/44 (43%)
Scenario Present in ACR Appropriateness Criteria	13/25 (52%)	18/19 (95%)
ACR Appropriateness Rating (Median and Range)	8* (6-9)	8* (6-9)

Table 1. Appropriateness Rating of Neurology Inpatient Imaging Orders.

*There was no significant difference between the ACR Appropriateness Criteria rating of suboptimal and optimal imaging ($p>0.9$).

Methods

- A neuroradiologist attended neurology inpatient rounds, interpreting radiological findings and guiding new optimal imaging investigations.
- Recorded outcomes at the time of rounding included the **number of suboptimal imaging orders caught**, the ACR Appropriateness Rating of the orders, changes in patient management due to the intervention, decreased patient length of stay, and whether educational value was provided to neurology residents.
- The Appropriateness Ratings between suboptimal and optimal imaging were compared using the Mann-Whitney U test.

Results

- The neuroradiologist was present while 100 clinical cases were discussed. Neurology inpatient teams wished to obtain 44 new inpatient imaging studies. (Table 1)
- 25 (57%) of new neurology inpatient orders were found to be suboptimal.**
- The neuroradiologist **changed management in 38 (38%) cases and decreased the length of stay in 19 (19%) cases.**
- Additionally, the neuroradiologist **provided educational value** to neurology residents in **60 (60%) cases.**
- To Note: There were no structured scenarios in ACR Appropriateness Guidelines in 12 (48%) suboptimal imaging orders. There was no significant difference between the ACR Appropriateness Criteria rating of suboptimal and optimal imaging ($p>0.9$).

Conclusion

- The challenges involved in optimizing neurology inpatient imaging at tertiary care institutions may exceed the scope of ACR's Appropriateness Criteria.
- A clinical neuroradiologist embedded in neurology inpatient rounds may be able to **optimize new inpatient imaging orders, affect patient management, and decrease length of stay.**



Figure 1. Axial CT angiography showing the right CCA bifurcation site (white arrow) and left internal jugular vein valve (black arrow). Bifurcation was mistakenly diagnosed as a web by the treating clinician, refuted by the rounding neuroradiologist.

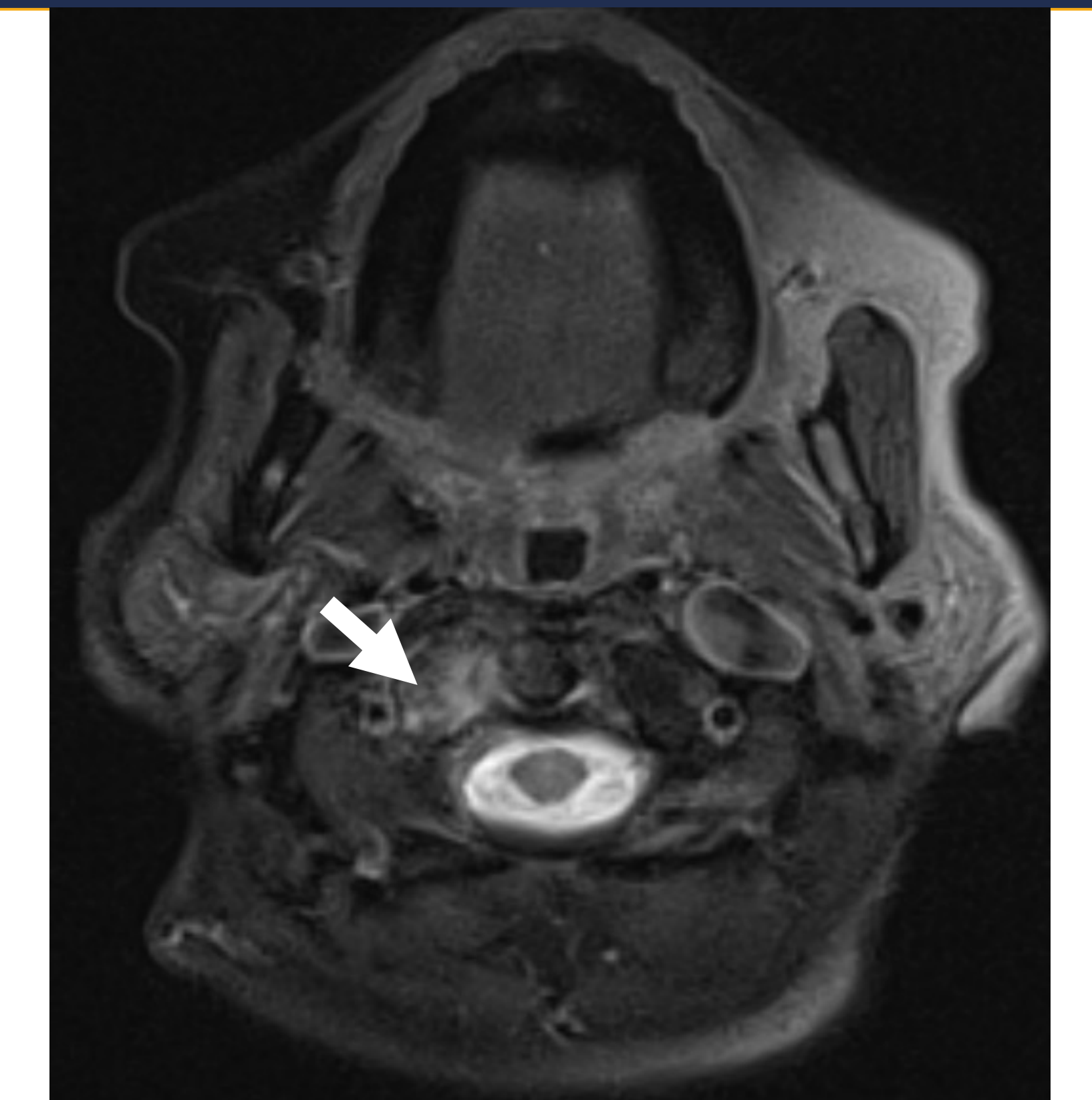


Figure 2. Axial T2W MRI demonstrating increased signal intensity at C1/C2 related to osteoarthritic changes. The rounding neuroradiologist determined that further MRI was unnecessary due to the known diagnosis of osteoarthritis. Imaging order was placed anyway and validated the neuroradiologist's recommendation.

References

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✉ sandhu.johnny@mayo.edu

🐦 @jsandhu11