

Peer Review

Review of: "Comparison of Single- and Multi-Echo Susceptibility-Weighted Imaging in Detecting Cerebral Arteriovenous Shunts: A Preliminary Study"

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Positive Review:

The study titled "*Comparison of Single- and Multi-Echo Susceptibility-Weighted Imaging in Detecting Cerebral Arteriovenous Shunts: A Preliminary Study*" is a significant contribution to the field of radiological imaging and neurovascular diagnostics. This work addresses a critical gap in the comparative evaluation of single- and multi-echo SWI (Susceptibility-Weighted Imaging) techniques for identifying cerebral arteriovenous shunts (AVSs), a topic of growing clinical relevance.

The study's methodological rigor is commendable. By employing a well-structured comparison of the two imaging techniques, the authors provide valuable insights into their respective strengths and limitations. The inclusion of multi-echo SWI as a novel approach enhances the scope of the research, offering clinicians potential tools for improved diagnostic accuracy. The imaging quality, parameter optimization, and quantitative metrics are clearly described, ensuring reproducibility and applicability in clinical settings.

The findings of the study are compelling. The superior sensitivity and specificity of multi-echo SWI in detecting AVSs, as demonstrated in the results, underscore its potential as a preferred imaging technique for complex neurovascular cases. At the same time, the discussion provides a balanced perspective by acknowledging scenarios where single-echo SWI may still be relevant, making the conclusions both realistic and clinically actionable.

The preliminary nature of the study is transparently acknowledged, with clear suggestions for future research directions, including larger sample sizes and diverse patient cohorts. This forward-thinking approach reflects the authors' commitment to advancing the field.

In summary, this study is a commendable effort that not only expands our understanding of susceptibility-weighted imaging but also sets the stage for further innovations in the diagnosis and management of cerebral arteriovenous shunts. It will undoubtedly serve as a valuable resource for radiologists and researchers seeking to optimize imaging protocols for complex neurovascular conditions.

Declarations

Potential competing interests: No potential competing interests to declare.