

PEER-REVIEW REPORT

Name of journal: World Journal of Orthopedics

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Title: Radiographic Evaluation of Vascularity in Scaphoid Nonunions: A Review

Reviewer's code: 05431084

Position: Peer Reviewer

Academic degree: MD

Professional title: Doctor

Reviewer's Country/Territory: United States

Author's Country/Territory: United States

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Reviewer chosen by: Jin-Lei Wang

Reviewer accepted review: 2020-09-18 23:56

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Scientific quality	<input type="checkbox"/> Grade A: Excellent <input type="checkbox"/> Grade B: Very good <input checked="" type="checkbox"/> Grade C: Good <input type="checkbox"/> Grade D: Fair <input type="checkbox"/> Grade E: Do not publish
Language quality	<input type="checkbox"/> Grade A: Priority publishing <input checked="" type="checkbox"/> Grade B: Minor language polishing <input type="checkbox"/> Grade C: A great deal of language polishing <input type="checkbox"/> Grade D: Rejection
Conclusion	<input type="checkbox"/> Accept (High priority) <input type="checkbox"/> Accept (General priority) <input checked="" type="checkbox"/> Minor revision <input type="checkbox"/> Major revision <input type="checkbox"/> Rejection
Re-review	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Peer-reviewer statements	Peer-Review: <input checked="" type="checkbox"/> Anonymous <input type="checkbox"/> Onymous Conflicts-of-Interest: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No



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SPECIFIC COMMENTS TO AUTHORS

This article provided a review of methodology and efficacy of different imaging modalities in assessing the vascular status of scaphoid fractures and nonunions. The ability to accurately assess vascular compromise to scaphoid non-unions is critical for providers as appropriate counseling must be given to patients regarding significantly lower union rates in nonunion surgery in the presence of osteonecrosis. One significant limitation that is inherent to the design of this article is that the review is not systematic in nature but instead provides a summary without the ability to draw conclusions with impacts on clinical practice. The format of this type of paper provide a brief overview of the topic but presents a select view of the evidence while making conclusive statements. It is important in this type of review to avoid definitive statements regarding clinical guidelines as the study is subjective in its inherent design. Minor edits: Introduction - When discussing higher nonunion rates of the the proximal and distal poles, no specific comparison of the rate of union in the two fracture sites is provided. - The sentence starting "Plain radiographs, computed tomography (CT)..." mentions that providers frequently assess the scaphoid blood supply and viability. It would seem that radiographs, CT and MRI are useful modalities to assess the viability of the scaphoid and presence/absence of AVN but not to specifically assess blood supply to the scaphoid. Consider rewording this phrase. Assessing Perfusion in Scaphoid Nonunions - Sentence starting "Furthermore, the primary finding suggesting...." needs to be rewritten or removed. It is unclear which study the authors are talking about as a different citation is used from the sentence prior. - I recommend rephrasing the bony scintigraphy paragraph to start with stating that it lacks sensitivity and resolution and eliminate the first sentence of the paragraph. - As a stylistic point, mentioning "one study" or "another study" and then saying "the authors" is not pleasant to read. Instead utilizing the authors names for recognition of the aforementioned studies is much



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easier to read and correlate to each study. Post-operative Assessment of Perfusion in Scaphoid Nonunions - Nonunion surgery does not always require augmentation with bone grafts. Changing this sentence to "fixation often requires". - Using the phrase proximal reperfusion is not accurate. This implies that all scaphoid nonunions are due to proximal fragment osteonecrosis which is not the case. Predicting Nonunion Formation - Avoid definitive statements and recommendations. Rather state what the evidence suggests. Saying that one study concluded a certain finding is not enough to make practice recommendations. ie. Sentence that starts "As such, MRIs cannot predict which...." Conclusions - A citation about T1-rho MRI sequences in the assessment of scaphoid nonunions is required. This is otherwise an opinion statement.