

PEER-REVIEW REPORT

Name of journal: *World Journal of Orthopedics*

Manuscript NO: 85366

Title: Metallosis with spinal implant loosening after spinal instrumentation: a case report and summary of current literature

Provenance and peer review: Unsolicited Manuscript; Externally peer reviewed

Peer-review model: Single blind

Reviewer's code: 05176598

Position: Peer Reviewer

Academic degree: MD

Professional title: Doctor

Reviewer's Country/Territory: China

Author's Country/Territory: Australia

Manuscript submission date: 2023-04-24

Reviewer chosen by: Geng-Long Liu

Reviewer accepted review: 2023-05-18 15:25

Reviewer performed review: 2023-05-22 11:30

Review time: 3 Days and 20 Hours

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 Grade E: Do not publish
Novelty of this manuscript	<input type="checkbox"/> Grade A: Excellent <input checked="" type="checkbox"/> Grade B: Good <input type="checkbox"/> Grade C: Fair <input type="checkbox"/> Grade D: No novelty
Creativity or innovation of this manuscript	<input type="checkbox"/> Grade A: Excellent <input type="checkbox"/> Grade B: Good <input checked="" type="checkbox"/> Grade C: Fair <input type="checkbox"/> Grade D: No creativity or innovation

Scientific significance of the conclusion in this manuscript	<input type="checkbox"/> Grade A: Excellent <input type="checkbox"/> Grade B: Good <input checked="" type="checkbox"/> Grade C: Fair <input type="checkbox"/> Grade D: No scientific significance
Language quality	<input type="checkbox"/> Grade A: Priority publishing <input type="checkbox"/> Grade B: Minor language polishing <input checked="" 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 type="checkbox"/> Minor revision <input checked="" 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

SPECIFIC COMMENTS TO AUTHORS

The authors report a case of 78 year-old female with spinal revision surgery to relieve worsening lower back pain. After the replacement of bilateral loosened L3 to L5 screws, the back pain and lower limb weakness in the patient got largely resolved. The authors also found that the loosened screws showed evidence of fretting with stained dark grey, and histopathology of stained tissues revealed aggregates of non-refractile, non-polarisable black granular foreign material mostly in a perivascular location, consistent with metallosis. Generally speaking, the authors performed a successful spinal revision surgery operation. However, how metallosis affected the back pain in this particular case remains uncertain under the conditions that other possibilities especially implant loosening per se might also cause or affect back pain, and there is lack of blood metal concentration data. The Literature review, which mainly emphasizes the studies about metallosis, included in the Discussion seems to implicate that metallosis led to the progression of back pain in the reported aged case herein. This implication might be true, but it needs more data (e.g., histopathological pictures, biochemical assay for blood samples) to support this conclusion. Some points for possible revision: 1)

Add more histopathological or biochemical data, if available, to support the impact of metallosis on the progression of back pain in the case. 2) Make a major revision for the Discussion. It is suggested that the discussion revolves around all possible causes in the reported case, not just the metallosis. Discussion should be discussion, but not a literature review. Therefore, it is suggested that the paper title does not include the word "review". 3) Specify the detailed diagnosis time and hospital name in "Chief complaints". 4) Figure 1 title is missing. 5) Several spaces are missing, for example, "surgeryand" and "levelwith" in page 7, "L5polyaxial" and "Newtitanium" in page 8. Please check all other possible typing errors.

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Peer-review model: Single blind

Reviewer's code: 02699853

Position: Peer Reviewer

Academic degree: MD, PhD

Professional title: Academic Fellow, Academic Research, Assistant Professor, Director

Reviewer's Country/Territory: Spain

Author's Country/Territory: Australia

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Reviewer performed review: 2023-05-25 15:50

Review time: 8 Days and 4 Hours

Scientific quality	<input type="checkbox"/> Grade A: Excellent <input checked="" type="checkbox"/> Grade B: Very good <input type="checkbox"/> Grade C: Good <input type="checkbox"/> Grade D: Fair <input type="checkbox"/> Grade E: Do not publish
Novelty of this manuscript	<input type="checkbox"/> Grade A: Excellent <input checked="" type="checkbox"/> Grade B: Good <input type="checkbox"/> Grade C: Fair <input type="checkbox"/> Grade D: No novelty
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Conclusion	<input type="checkbox"/> Accept (High priority) <input checked="" type="checkbox"/> Accept (General priority) <input 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

SPECIFIC COMMENTS TO AUTHORS

I congratulate the authors for this interesting study well planned and developed. It is true that not much is said about the subject despite the frequent findings of metallosis in the tissues close to the connections between screws and bars which, although stable in the early days, are the seat of micro-movements resulting in fretting corrosion between the elements. of the assembly. I believe, with the authors, that it is a problem that requires some vigilance on the part of spine surgeons in all cases of instrumentation, especially if there are small symptoms of discomfort or radiological signs of instability of the implants.

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Peer-review model: Single blind

Reviewer's code: 03678933

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Reviewer's Country/Territory: China

Author's Country/Territory: Australia

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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
Novelty of this manuscript	<input type="checkbox"/> Grade A: Excellent <input type="checkbox"/> Grade B: Good <input checked="" type="checkbox"/> Grade C: Fair <input type="checkbox"/> Grade D: No novelty
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	Conflicts-of-Interest: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No

SPECIFIC COMMENTS TO AUTHORS

The case reported in this paper is metallosis caused by Implant Loosening after Spinal Instrumentation. This case is relatively rare in clinical practice at present, and metallosis has not been reported much. So this case has certain novelty. Combined with previous literature reports, the relevant clinical and imaging characteristics of metal disease caused by implant loosening after spinal internal fixation and serological characteristics of metal poisoning were summarized, which provided certain guiding significance for later clinical diagnosis and treatment. This enlighten the author in the later clinical work process: for patients undergoing spinal internal fixation, the possibility of metal disease should be considered if there are characteristic clinical symptoms and imaging features. Comments to the author are as follows: 1. The order of chief complaint, present history and past history in the Case report should be clear. The history of present disease can be described chronologically. 2. Specific physical examinations are not given in the Examination findings, such as heel and hip test, straight leg elevation test, Achilles tendon reflex, knee reflex, great toenail extension test, etc. In the case of limited imaging, the importance of physical examination is self-evident. How to accurately determine the

surgical method without physical examination? 3. Is it possible to discuss metal disease more clearly in the order of literature review, etiology, clinical manifestations, auxiliary examination (imaging, serological examination, pathological evidence) and treatment? 4. In the discussion section, the author did not describe the effective measures to avoid the recurrence of internal fixation loosening and other problems. 5. I think the logic of this conclusion part is a little confused. You can revise the discussion part as I suggested and then summarize it.

RE-REVIEW REPORT OF REVISED MANUSCRIPT

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Academic degree: MD

Professional title: Doctor

Reviewer's Country/Territory: China

Author's Country/Territory: Australia

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Review time: 1 Hour

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 checked="" type="checkbox"/> Accept (General priority) <input type="checkbox"/> Minor revision <input type="checkbox"/> Major revision <input type="checkbox"/> Rejection
Peer-reviewer	Peer-Review: <input checked="" type="checkbox"/> Anonymous <input type="checkbox"/> Onymous



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statements

Conflicts-of-Interest: [] Yes [Y] No

SPECIFIC COMMENTS TO AUTHORS

(1) Figure 1 title is still missing. (2) Please check "Supplementary-Material-revision" for correct.