

Peer Review File

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Reviewer A:

Comment 1: Since spondyloptosis is defined as 100% slippage (Meyerding's classification), the presence of a contact between the two end plates in your cases raises the question of whether it is a spondyloptosis or a grad IV spondylolisthesis? Please if you have a slide where there is no contact between end plates, it would be preferable.

Reply 1: We agree that the image used did not demonstrate 100% misalignment between endplates. The diagnosis of spondyloptosis was made from the initial trauma imaging including the first chest X-ray. We exchanged figure 1 with the initial x-ray from which the diagnosis was made from.

Changes in text: Figure 1

Comment 2: Line 138 define OT, PT

Reply 2: The abbreviations were corrected.

Changes in text: Lines 117-118

Comment 3: The authors state: "To date, there have been less than a dozen cases of lateral thoracic spondyloptosis reported in the literature" please provide a reference or state "according to our review"

Reply 3: To confirm an up to date and accurate count of the number of cases of traumatic lateral thoracolumbar spondyloptosis we updated our literature search. We found a total of 13 cases that apply. The manuscript has been amended to state "according to our review there have been 13 cases of traumatic lateral thoracolumbar spondyloptosis".

Changes text: 153-157

Comment 4: Since the authors did not perform a systematic review, it would be helpful for future authors if you put a short table indicating and summarizing the reviewed cases.

Reply 4: We added Table 1 which outlines that cases found in our review. The patients' neurologic status after the injury and after treatment are shown. Additionally, the approach and treatment methods are listed.

Changes in text: Table 1

Comment 5: Line 210 define PTSD

Reply 5: The abbreviation was corrected

Changes in text: Line 182

Comment 6: Line 214 : Vranceanu et. al à Vranceanu, et al.

Reply 6: This was corrected in the manuscript

Changes in text: Line 186

Reviewer B:

Comment 1: By reading the title I presumed you were going to make a review about the other dozen published cases and I don't see any of that. In those cases, how many did just a posterior approach? and a 360° approach? which were the results?

Reply 1: We created Table 1 to outline the results of the cases found in our literature review. The neurologic status at the time of presentation and after treatment are listed. Additionally we provided the approach and treatment used in each case.

Changes in text: Table 1

Comment 2: How many hours after the injury was the patient stabilized to the thoracic spine?

Reply 2: The patient was hemodynamically unstable and arrival and underwent aortic repair prior to internal spinal stabilization. He was taken to the operating room approximately 16 hours after initial presentation to the hospital.

Changes in text: Line 85

Comment 3: Was he paraplegic immediately after trauma?

Reply 3: Yes, the neurological exam taken during the secondary survey which occurred immediately after the patient was stabilized at the hospital showed no evidence of motor or sensory function below the level of the umbilicus.

Changes in text: None

Comment 4: In that particular case of the literature in which the patient hadn't an ASIA A neurological status, what did they do differently?

Reply 4: After updating our literature review, we found 2 cases in which the patient was not ASIA A on initial presentation. Both patients improved after treatment on a classification basis. Table 1 outlines all cases found in our literature search.

Changes in text: Table 1

Reviewer C: No comments to address

Reviewer D:

Comment 1: The authors use a lot of abbreviations in the manuscript, which is currently accepted in the scientific literature; however, there are places in the paper that are clearly specific to the country from which the paper comes (the US). These include, for example, EMS, ORIFF, CRPP, PT, OT. I think that for some readers, especially those from Europe or Asia, these acronyms may be a hindrance to a good understanding of the work. Therefore, I encourage you to rewrite it so that these terms are clear to any reader

Reply 1: The abbreviations were corrected to make the manuscript more widely understandable.

Changes in text: Lines: 53, 94-95, 117-118, and 185

Comment 2: Every scientific paper has a purpose; I lacked a clear statement of the purpose of the paper. The abstract includes background, case description and conclusion. The introduction section also does not show the purpose of the study, unless that is how the sentence: In this care we will address both a unique combination of polytrauma as well as the long term associated physical and psychological complications.

Reply 2: We clarified our objective at the end of the introduction. The goal for our case report was to add to the literature on an injury that is both rare and sparsely talked about. Additionally, we want to highlight the gaps that these patients face in both treatment of their physical injury and the psychological toll that comes with debilitating injuries.

Changes in text: Lines 45-48

Comment 3: To the psychological problems of such patients after severe polytrauma, the authors devote a significant part of the paper, while showing the problems of the patient whose case they described. Since the patient's mental problems appear to be severely aggravated, the question arises whether the patient was prepared for the fact that such problems would occur in him. It is common hospital practice that patients are prepared for the fact that physical disabilities will accompany them for the rest of their lives. I think that increasing the role of psychological care at the stage of the patient's stay in the hospital and after leaving the hospital could be an important conclusion of this work.

Reply 3: We agree and this is a point that we tried to emphasize in our manuscript. The patient was set up with mental health services while in the hospital. He did have inconsistent follow up after discharge. With a sample size of 1 no conclusions can be drawn about the effectiveness of

any treatment. From the literature that we cited in the discussion there is evidence that activating mental health services early to help set and cope with a difficult prognosis is beneficial.

Changes in text: NA

Comment 4: Do the authors recognize the limitations of the work; if so, what are they?

Reply 4: The authors do recognize that this is a case report where the patient had a very unique combination of injuries. Lateral spondyloptosis is very rare condition and there are few examples in the literature. Additionally, the patient in our case as well as the other cases in the literature had poor outcomes making it challenging to surmise any recommendations. Other limitation within our particular case include the patient's inconsistent follow up. There are gaps in the documentation of his course and he missed numerous medical treatments/appointments.

Changes in text: Lines 213-220