

Peer review file

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Reviewer A

Comment 1: Page 5 line 2: Please include a sentence on why stress fractures reoccur in the same location. E.g. return to play following stress fracture may precede full bone healing and/or recovery of bone strength properties, making the fracture site vulnerable to reinjury.

Reply 1: Comment added (Page 5, Line 4-5)

Comment 2: Page 7 line 3: Please use SI units (kg) for the tension

Reply 2: SI units (kg) added (Page 7, Line 7)

Comment 3: Page 7 line 22: The specific clinical and functional objectives would be very useful to be defined for other practitioners to refer to.

Reply 3: These have been included in a new table (Table1.)

Comment 4: Page 7 line 24: How were bowling loads and technique assessed and optimized? This throws up an important question – would players have achieved full healing if they had have followed this rehab programme? While it is important to optimise an individual's technique during rehabilitation I feel it is beyond the scope of this paper. This manuscript is important in regard to outcomes following surgery and this sentence may detract from your key findings which is that the surgery was successful.

As compliance to rehab is one of your concluding remarks, I think further information is needed on the contents of this rehabilitation.

Reply 4: Comments added (Page 8, Line 6-11)

Comment 5: Page 8 Line 22: This is quite a large range of months between surgery and follow up. Would time since surgery affect an individual's ability? I would expect to see something regarding this in the limitations. Was this the ability survey? If so, could you refer to this as such to make clear to the reader.

Reply 5: Yes, the survey was taken at a wide range of periods post-op. This is a consequence of a partly retrospective study in a very specific group. It takes time to collect a reasonable cohort. The information in the survey was more descriptive and quantitative. This didn't impact on the primary outcome of the study, namely how many returned to play professional cricket and the period between surgery and return to play. Also, the fact that no player ever reported a reduction in bowling performance post-operatively, either early on or later, means that the timing of the survey was less relevant for this key outcome. I have added a comment to the limitations paragraph in the discussion (Page 16, line 12-14)

Comment 6: Page 8 Line 22: For your average months (and all subsequent) could you determine if data is normally distributed and report as mean \pm SD, or if non-normal, median \pm IQR.

Reply 6: median \pm IQR added throughout.

Comment 7: Page 9 Line 7-8: Is from their first confirmed stress fracture or their last stress fracture before surgery?

Reply 7: First confirmed (Page 9, line 22-23)

Comment 8: Page 10 Line 11-19: Could this be summarized? E.g. X% of players returned to

playing at the same or better level than previously?

Reply 8: This paragraph has been edited with your suggested comment added (Page 11, line 5-6)

Comment 9: Page 11 Line 3-5: It would be good to know some baseline levels of VAS for what is usually experienced by a fast bowler.

Reply 9: I have this data from a separate study, but it's not yet published so I don't feel I can include it.

Comment 10: Page 11 Line 13-14: I am a little confused by the repeated VAS measurements as seen in the previous paragraph – is this an independent cohort or measurements taken at a different time period? Please could you clarify.

Reply 11: The earlier VAS scores were recorded prospectively, all at 12 months post op. The second set of VAS scores were recorded at final follow-up.

Comment 11: Page 11 lines 7-10: While useful, this is quite a subjective measure, is there any measure of bowling speed, or bowling average which could be used to compare pre and post surgery performance?

Reply 11: It is totally subjective, but bowling does not have a more specific objective standardized measure of performance. We considered speed but felt this was a poor surrogate for overall performance and thus stuck with the players perception. When patients are considering this surgery, they trust the testimonials of other players, so we have included them in the study despite their subjective nature.

Comment 12: Page 11 Lines 16-20: Again, was it the surgery or the more thorough rehabilitation strategy which achieved healing/successful return to play??

Reply 12: It's impossible to know. We have acknowledged this in the discussion "We therefore acknowledge that the keys to success in this specific cohort are multifactorial and it is impossible to accurately apportion how much of the clinical success in our cohort was related to surgical factors versus post-surgery rehabilitation versus changes in bowling loads and technique" (Page 15, Line 21-24)

Comment 13: Page 12 Line 19 – Page 13 line 3: This may be more suited to the introduction.

Reply 13: What should be included in the introduction (vs discussion) has always perplexed me. The Editor of the Lancet once suggested in a lecture that the intro should largely comprise of 4 concise paragraphs (covering 'what we know, what we don't know, why we did this and then the question being asked/tested'). They recommended not to review the entire field of research or include what could be found in a standard textbook. I tend to follow this advice and limit the introduction accordingly.

Comment 14: Page 13 Lines 5-11: Introduction

Reply 14: See above.

Comment 15: Page 13: 11-14: This has already been described in the methodology.

Reply 15: I wanted to provide a summary of the evolution of this technique and have therefore repeated the specific aspects of our technique for comparison.

Comment 16: Page 13 lines 19-21: If the 'Bucks' technique is successful then what is the rationale to use the method proposed in this paper? If so, could you include in the introduction?

Reply 16: The rationale for using the cable-screw system is outlined in the discussion (Page 14, Line 14-24). Again, my preference is to keep the introduction concise.

Comment 17: Page 14 line 4: pars'

Reply 17: Changed (Page 14, Line 20).

Comment 18: Page 15 lines 4-16: This paragraph is really important! I am pleased you have acknowledged this chicken and egg situation. Lines 13-15 are particularly important, highlighting the interdisciplinary cooperation required to successfully achieve full return to play in fast bowlers.

Reply 18: Agree completely.

Comment 19: Page 15 Line 22: delete superscript 9.

Reply 19: Deleted (Page 16, Line 16).

Comment 20: Overall, I think this is a useful paper for practitioners working with cricket fast bowlers with stress fracture and during rehab. To make the paper publishable I believe further information is required about what rehabilitation included, how intensity during this phase was progressed, what the functional objectives of each phase were, and what was required for players to progress to the next phase of rehabilitation.

Reply 20: The additional information has been presented in table form (Table 1.)

Reviewer B

Comment 1: Very interesting study of spondylolytic defects related to 'high torque' sport. Only question would be if any statistic on incidental number of cases seen in this population verse normal, non-cricket group?

Reply 1: Comparison made in the introduction (Page 4, Line 20-22)