OPEN PEER REVIEW

Open Peer Review (OPR)

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Asian Journal of Sports Medicine
Article DOI: 10.5812/asjsm.108983
Published in: Asian Journal of Sports Medicine: In Press(In Press); e108983

Peer Review Report for "A Hospital Clinic Experience with Isolated Lateral Meniscal Tears in Sports: A Chart Review on Rugby"

Author(s): Satoshi Ochiai, Tetsuo Hagino, Shinya Senga, Naofumi Taniguchi, Takashi Ando, Hirotaka Haro

Review Timeline:

Submit Date: 31 Aug 2020
Revised Date: 18 Jan 2021
Accepted Date: 10 Feb 2021

Revision (0)

Here, you can see the **Reviewers**, **Associate Editors** and **EICs'** comments from the beginning to the end of the revision process.

Soroush Baghdadi: Reviewer | Revision (0) 23 Sep 2020

Dear AE,
I want to congratulate the authors of the manuscript titled “Isolated lateral meniscus tear in the middle segment: association with rugby” for their work.
In this study, the authors have assessed the injury patterns and MR findings in lateral meniscus tears in rugby players. They have also tried to describe the possible explanations for the occurrence of such injuries.
The manuscript is relatively well-written, and the proposed association is interesting, but it has many flaws that need to be addressed before the paper is ready for publication:
1) First and foremost, this study is not evaluating the association between rugby and lateral meniscus tears. This is a case series of lateral meniscus tears in rugby players. You can never prove, or even propose, an association with this study design. What if 80% of your patients are rugby players? Then you are just dealing with a case of sampling bias. Therefore, the whole manuscript should be revised with this in mind.
2) As stated, the title does not represent the study at all. The title should be changed to “Isolated lateral meniscus tears in rugby players”. The association is just a hypothesis which is not addressed in this study at all.
Abstract:

3) Again, you did not investigate any relationship here. Change the objective to something like “describe a series of lateral meniscus tears in rugby players” or a similar sentence.
4) methods, last line: you did not analyze any relationship. Revise.
5) results: change “rugby position” to “player position”. Second line: why should patients report any cause? Revise.
6) Conclusion: this conclusion is not derived from the results of this study. you are just restating your hypothesis. Revise.
Background:
7) line 14-16: you have not stated a clear ‘research question’ or hypothesis here. Change accordingly.
Methods:
8) Figure 1 does not add anything to the paper and is redundant. Remove the figure.
9) Because this study is describing the patterns of meniscus injuries in rugby players, I suggest you move the lines 27-32 to the results section. This is not part of the methods but is your results.
10) Instead, I suggest adding a paragraph describing the positions in rugby to readers who are unfamiliar with the sports. I am sure rugby is big in Japan, but this is definitely not the case across all Asia. So, please describe the player positions in a few sentences.
Results
11) I suggest adding time from injury to your variables. I suppose most of these would be acute injuries, but it’s interesting to know the data.
12) line 63: change “were found in all…” to “were found in none..”
13) femorotibial angle and the tibial slope measurement should be explained in the methods. I suggest adding a representative radiograph.
14) Figure 2: I have two comments. First, what do you mean by PDT2-weighted for the second image? I suppose you mean proton density. Also, both cuts are practically the same. I suggest removing one (probably the T1 image). If possible, you can add a coronal image from a different patient for comparison.
15) you have described the arthroscopic findings. Please add the treatment chosen for the tears. How many were debrided, how many were repaired?
Discussion
16) Generally well-written.
Conclusion
17) As mentioned for the conclusion of the abstract, these are not your findings. Remove your speculations and add what you have found in this study. As you have not (and could not, with this design) investigate any relationship or association, you cannot conclude that such an association exists. A proper conclusion would state that “in the study of 11 cases of lateral meniscus tears in rugby players” we found such and such…
Thanks.

Victor Lopez, Jr.: Reviewer | **Revision** (0) 7 Oct 2020

Dear AE,
We thank the authors and editors for allowing us to review their manuscripts.
General comments for the authors:
- The title should be re-written. Please include a better phrasing of the actual population

being evaluated. Maybe “A hospital clinics experience with isolated lateral meniscal tears in sports, a chart review on rugby (union?)”?

- There is a grammatical concern through-out the document which could be addressed through a proof-reader. As a reviewer, I did not focus on this, it should be addressed in any other submissions. Also, an author with detailed knowledge of rugby may benefit the overall paper.

- The proportion or prevalence needs to be clearly documented in the abstract methodology and manuscript methodology and documented in the results section, especially if they plan on stating the authors are using an epidemiological descriptive analysis. The table states n=26, but in the manuscript, it states n=27? Then the figure legend states another number n=46? These need to be clearly documented a flow chart may be beneficial at this juncture, or add more to figure including populations.

- Once this is clarified I recommend to the authors to revisit the title edit, if necessary.

- The references are quite classic, particularly on the subject of meniscal biomechanics, injuries and treatments. Yes, many of these references are classic references and I do understand their use, but more relevant literature should be incorporated. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6423358/There are also more relevant rugby references on biomechanics which should be included. Especially among Preatoni E, etal

- Was this rugby union or rugby league and which format (7s, 10s or 15s). What was the population? Do you have the level of play? Was this among community rugby players, university, sub-elite or elite? Or clinic patients that documented they played rugby union or rugby league? Were they recreational?

- A couple of points to consider in the manuscript

- cannot state caused by rugby need to restate throughout as “associated with rugby or involvement with the sport of rugby and that forwards could have been injured in the scrum”

- Ages influence the cohort’s injury, maybe note age groups 17-20, 20-25? (https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5508267/)

- Do you have how many continued to play vs how many stopped playing due to pain, or pain scales?

- Do you have how many had surgery vs how many had conservative treatment and for how long?

- return to play outcomes?

ABSTRACT

Background:

…“we have noted a high rate of lateral meniscus tear in the medial segment among rugby players.” Compared to who? Which paper and what population? Or are you eluding to that a majority of your sports injured meniscal patients were encountered from rugby (n=11)? Please clearly state or change to “..we have found among our clinical sports population that encountered isolated lateral meniscal tears (n=27), to occur more often in the forwards position (n=10/27) in rugby, which could support it occurring in forwards play.”

- Objectives: ..” and isolated lateral meniscus tear in the middle segment.” Please re-write.

Methods:

- The methods need to be re-written to clearly note the methodology (retrospective chart review) and actual population clearly (charts with isolated meniscal tears found associated with sporting activity). …..“Among 4452 patients diagnosed with meniscus tears, 27 patients had isolated lateral meniscus tear in the middle segment. The cause of injury was

sports activities in most of the cases, and rugby was the most common." Include "..diagnosed via arthroscopy…"

- The table states n=26 (patients involved in sports?), but in the manuscript, it states n=27 (total knees?)? needs to be clear.
- Please re-write that this is your "clinical cohort and from this injured population you evaluated charts retrospectively that had an isolated medial meniscal tear from their involvement in the sport of rugby." please clarify what was your "sports activities in most of the cases"? what were the other injuries from? Were sports injuries in the n=27 (11/26 sports=rugby?, 1 degenerative), what was the breakdown. The reader shouldn't have to jump to the tables to understand this breakdown. Please re-word this section.
- "We studied the 11 cases of rugby-related injury", should be "..retrospectively reviewed charts…" include "with an arthroscopic diagnosis."

Results:

- Please clarify and re-write, arthroscopy diagnosed meniscal tears or MRI diagnosed? was majority of knee (n=6/11) reported an unknown cause? Or mechanism or phase of play? Was it during the sport of rugby? need to clearly note. Were there any pain scales documented from this population? Kujala? Koos? On clinical exam any swelling? Any return to sport data?

Conclusions:

- Need to re-write "In this study of isolated lateral meniscus tear in middle segment, the high frequency of injury in players in the front row and large proportion of injury with unknown cause suggest a high association of this injury with scrum."

Yes, in theory, this could be hypothesized that 10 out of 11 players noted were in the forwards position and yes that all of them could have been involved in the scrum. I do not know if this could be supported without further evidence with only n=5, front row players. Could have been an awkward step, tackle, ruck or maul that possibly hyperextended the knee? Yes, over-extending is often found in scrummaging, which may force the forward row players to hyperextend but not necessarily the hooker that is actually hooking the ball at this juncture.

MANUSCRIPT

Background & Objectives

- Line 5: Grammar "…tear is estimated to be 11.5 per 100,000 population in the United States" please re-write to "….tears is estimated to be 11.5 per 100,000 in the United States population" is this in general or sporting population?
- Line 8: Grammar "…in stable knee…" change to "…in stable knees…"
- Line 12: should include a citation of the incidence of meniscal injuries in rugby? please cite accordingly, to support this paper, rugby union (15-a-side) vs the rugby-7s (7-a-side).
- Line 13: "…we have noted a high rate of lateral meniscus tear in the medial segment among rugby players.." change to "..we have found among our clinical sports population that encountered isolated lateral meniscus/meniscal tears occur more often in the forwards position in rugby, which could support it possibly occurring in the scrum."
- Line 14-16: this should be included in the methods
- Line 15-16: please clearly re-state the objectives/aims

Methods:

- Line 19: The methods need to be re-written, inclusion and exclusion criteria.
- Line 20-21: "…were diagnosed with meniscus tear by arthroscopy in our Center…" should

this be included in each methods section (including abstract), or should be re-written as confirmed diagnosis, because in the earlier methods section, it is stated that

- Line 22-32: should be included in the results section. This is the actual epidemiological findings.

“Among these cases, 261 knees of 249 patients had isolated lateral meniscus tear with no morphological abnormalities including discoid meniscus and no concurrent injuries such as ligament rupture and bone fracture. From these cases, we found only 46 knees of 44 patients (1.0% of all knees with meniscus tear) with tear in the middle segment (Cooper classification zone E (5)) (Figure 1).

- The vast majority of the tears in the middle segment were radial or oblique tears, found in 28 knees of 27 patients (10.8 % of all cases with isolated lateral meniscus tear and 61.4% of cases with tear in middle segment). The causes of injury were sport activities in 26 patients and age-related degeneration in the remaining patient. Rugby was the most common sport with 11 cases (39.2%), followed by soccer and baseball with 4 cases each, and then basketball with 2 cases (Table.1).

- Line 33: should change “In this study, we studied the 11 knees of 11 patients with radial or oblique tear in the medial segment of the lateral meniscus caused by rugby.” to the actual study done “chart reviewed for isolated meniscal tears that were associated with rugby players.

- Line 35: “injured side”? laterality of injury; “situation”? Phase of play?

- Line 37: Physical presentation and exams conducted?

- Line 37: compliance with the journal’s policy fully, shouldn’t this be the ethics board for expedited retrospective chart review(RCR)? Or followed institutional board review RCR?

- Line 42: is there importance on dominant side?

- Line 49: “Situation at the time of injury” doesn’t this mean “phase of play”

- Line 50: should be “unknown” as compared to “unclear”

- Line 50-51: These lines do not support your theory of a hyperextension in the scrum? What were the forwards injured by? You may need to clearly state the phase of play or mechanism that injured the forward players. The proportions do not support the theory of 6 forwards being injured from scrum?

- How many mechanisms documented were front row players? 6-unknown, 2-tackle, 1-running, what about the other 2?

- Lines 89-92: please be consistent in citing references, could use Brooks and kemp clin sp med 27 (2008). For an overview of rugby union (rugby-15-a-side) adult elite injuries. Please do not use incidence in youth when comparing adults or elite play. If you choose to use community play, I would use the papers by Simon Roberts et al.

- Line 93 “In rugby, since the physique and the role of the player differ depending on the position, the site and frequency of injury also vary (13,14).” Not certain if these are correct references? First is the consensus statement, and the second is on rugby-7s?

- Line 94: grammar “Report has shown”

- Line 97: would not use “the vast majority” please reword.

- Line 99-102: this does not support the authors' theory that by deduction, the other injuries were from the scrum? This needs to be reworded to state that meniscal injuries could possibly be from another phase of play or awkward mechanism or injury in rugby.

- The authors could transition to discuss possible mechanisms of injury to cause meniscal tears and thus include the discussion of scrums. Would then need to include other

mechanical concerns in rugby play that could possibly induce hyperextension ie: lower leg tackles, sudden stops, leg planting etc.. to induce this pathology.
- Line 109: grammar: study used a cadaver knee or multiple knees?
- Line 112: grammar: "…during the scrum…"
- Line 113: grammar: "…in the scrum…"
- Line 116: grammar: "…lateral meniscus tears…"
- Line 122: change "position of forward" to "forward position"
- Line 125: "…and proceed with appropriate treatment…" what are the outcomes if not acutely and appropriately treated? What are the long-term problems with continuance or return to play.
- 127: "especially scrum" cannot clearly support this from the proportions found.
- 128: "posture" or technique?
- 133: Please reword "the high frequency of injury in players in the front row and large proportion of injury with unknown cause suggest a high association of this injury with scrum."
Thanks.

REFEREE: Associate Editor | **Revision** (0) 16 Oct 2020

Dear EIC,
This paper has been examined by 2 external reviewers and then re-evaluated in-house. The reviewers believe that the manuscript is interesting but not publishable in its current form. They have raised a number of points, listed on the website.
Thanks.

REFEREE: EIC | **Revision** (0) 16 Oct 2020

Dear Author,
Thank you for submitting your manuscript to Asian J Sports Med. Your manuscript has now been reviewed by two reviewers and an Associate Editor. I now have the reports of the Referees, which suggest that your manuscript might be suitable for publication following a number of revisions. I attach some reviewer comments and invite you to submit a revised version of your manuscript addressing the points made.
Thanks.

OPEN PEER REVIEW

Revision (1)

Reply to Reviewers

Ideally, the reviewing process can significantly improve the submitted manuscripts by allowing the authors to take into account the advice of reviewers. Author(s) must reply to all reviewers' comments in a separate Word file, point by point. A "**Reply to Reviewers**" document is submitted along with revised manuscript during submission of revised files, summarizing the changes that the authors made in response to the reviewers' comments. The responses to reviewers' comments specifies how the authors addressed each comment the reviewers made.

You can read the authors' responses to the reviewers' comments in the next page.

Numbered Reviewer Remark and Manuscript Line Number	Author Response	Revised Manuscript Line Number and Text Change
Reviewer 1		
General comments		
1. The title should be re-written. Please include a better phrasing of the actual population being evaluated. Maybe “A hospital clinics experience with isolated lateral meniscal tears in sports, a chart review on rugby (union?)”?	We thank the reviewer for suggesting an easy-to-understand title. We have changed the title taking into consideration the comments of two reviewers. 。	*Title changed*: “A hospital clinic experience with isolated lateral meniscal tears in sports: a chart review on rugby”
2. There is a grammatical concern through-out the document which could be addressed through a proof-reader. As a reviewer, I did not focus on this, it should be addressed in any other submissions. Also, an author with detailed knowledge of rugby may benefit the overall paper.	Together with the changes pointed out in Comment 3, we have made major changes throughout the manuscript. The manuscript was checked by a proof-reader before resubmission. We have also asked a former World Cup rugby player and a former Japan U-19 forward coach to confirm the contents of this paper, and added Acknowledgement.	*Added two co-authors*: Professor Hiroyuki Kajihara Department of Business Administration, Yamanashi Gakuin University Professor Kouji Yoshida Department of Political Administration, Faculty of Law, Yamanashi Gakuin University *Added Ackowledgement:* “**Acknowledgement** The authors thank Professor Hiroyuki kajihara of the Department of Business Administration and Professor Kouji Yoshida of the Department of Political Administration, Faculty of Law, Yamanashi Gakuin University, for proviing expert opinions on rugby. ” (Lines 245-249)
3. The proportion or prevalence needs to be clearly documented in the abstract methodology and manuscript methodology and documented in the results section, especially if they plan on stating the authors are using an epidemiological descriptive analysis. The table states n=26, but in the manuscript, it states n=27? Then the figure legend states another number n=46? These need to be clearly documented a flow chart may be beneficial at this juncture, or add more to figure including populations.	We apologize for the errors. The correct numbers are as follows: ・44 cases (46 knees) had lateral meniscus tear in the middle segment ・Among those with lateral meniscus tear in middle segment, 27 patients (28 knees) had horizontal or oblique tear ・Among those with horizontal or oblique tear, 26 patients sustained injury associated with sports. Following the advice of the reviewer, we have constructed a flow-chart to document all the cases, which is Figure 1 in the revised manuscript. Figure 1 in the original manuscript was deleted as advised by another reviewer.	*Changed:* “Among 4452 cases (4666 knees) of arthroscopically proven meniscus tear diagnosed at our Center, 249 cases (261 knees) had isolated lateral meniscus tear with no morphological abnormalities including discoid meniscus and no concurrent injuries such as ligament rupture, bone fracture and severe cartilage lesion. Of these cases, only 44 cases (46 knees) (1.0% of all knees with meniscus tears) had tears in the middle segment (Cooper classification zone E). More than half of the tears in the middle segment were radial tears, found in of 27 cases (28 knees) (61.4% of tears in middle segment, 10.8 % of all isolated lateral meniscus tears). The causes of injury were sport activities in 26 cases and age-related degeneration in the remaining case (Figure 1). Rugby was the most common sport with 11 cases (39.2%), followed by soccer and baseball with 4 cases each, and then basketball with 2 cases (Table 1).” (Lines 76-87) *Changed:* Fig. 1: Flowchart
4. The references are quite classic,	Following the reviewer’s	*Added references:*

particularly on the subject of meniscal biomechanics, injuries and treatments. Yes, many of these references are classic references and I do understand their use, but more relevant literature should be incorporated. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6423358/There are also more relevant rugby references on biomechanics which should be included. Especially among Preatoni E, etal	advice, we have cited more recent papers related to rugby. We thank the reviewer for recommending the useful references.	2) Scholes C, Houghton ER, Lee M, Lustig S. Meniscal translation during knee flexion: what do we really know? Knee Surg Sports Traumatol Arthrosc. 2015 Jan;23(1):32-40. doi: 10.1007/s00167-013-2482-3. 6) Karia M, Ghaly Y, Al-Hadithy N, Mordecai S, Gupte C. Current concepts in the techniques, indications and outcomes of meniscal repairs. *Eur J Orthop Surg Traumatol*. 2019;29(3):509-520. doi:10.1007/s00590-018-2317-5 (10) Tsujii A, Amano H, Tanaka Y, Kita K, Uchida R, Shiozaki Y, Horibe S. Second look arthroscopic evaluation of repaired radial/oblique tears of the midbody of the lateral meniscus in stable knees. J Orthop Sci. 2018 Jan;23(1):122-126. doi: 10.1016/j.jos.2017.09.023. Epub 2017 Oct 18. PMID: 29054554. (12) Ridley TJ, McCarthy MA, Bollier MJ, Wolf BR, Amendola A. Age Differences in the Prevalence of Isolated Medial and Lateral Meniscal Tears in Surgically Treated Patients. *Iowa Orthop J*. 2017;37:91-94. (15)Roberts SP, Trewartha G, England M, Stokes KA. Incidence and Nature of Medical Attendance Injuries in English Community Rugby Union. *Orthop J Sports Med*. 2014;2(12):2325967114562781. Published 2014 Dec 19. doi:10.1177/2325967114562781 (16)Brooks JH, Fuller CW, Kemp SP, Reddin DB. Epidemiology of injuries in English professional rugby union: part 1 match injuries. Br J Sports Med. 2005 Oct;39(10):757-66. doi: 10.1136/bjsm.2005.018135. (18) Dallalana RJ, Brooks JH, Kemp SP, Williams AM. The epidemiology of knee injuries in English professional rugby union. Am J Sports Med. 2007 May;35(5):818-30. doi: 10.1177/0363546506296738. (19) Ogaki R,Takemura M, Takaki S, Shimasaki T, Furukawa,T. Epidemiology of knee injuries in Japanese collegiate rugby union players, The Journal of Physical Fitness and Sports Medicine, 2017;6(5): 343-348, doi.org/10.7600/jpfsm.6.343 21)Preatoni E, Stokes KA, England ME, Trewartha G. Engagement techniques and playing level impact the biomechanical demands on rugby forwards during machine-based scrummaging. Br J Sports Med 2015;49:520–528,. (26)Tenuta JJ, Arciero RA. Arthroscopic evaluation of meniscal repairs. Factors

		that effect healing. Am J Sports Med. 1994 Nov-Dec;22(6):797-802. doi: 10.1177/036354659402200611. (27) Tsujii A, Amano H, Tanaka Y, Kita K, Uchida R, Shiozaki Y, Horibe S. Second look arthroscopic evaluation of repaired radial/oblique tears of the midbody of the lateral meniscus in stable knees. J Orthop Sci. 2018 Jan;23(1):122-126. doi: 10.1016/j.jos.2017.09.023.
5. Was this rugby union or rugby league and which format (7s, 10s or 15s). What was the population? Do you have the level of play? Was this among community rugby players, university, sub-elite or elite? Or clinic patients that documented they played rugby union or rugby league? Were they recreational?	To address the reviewer's comment, we have added more information on the level of the rugby players.	*Added*: "All were students belonging to 15-player rugby clubs at high school or univerisity. Nine subjects were playing at the level of national matches, and two were playing at the level of prefectural qualifying matches." Lines 92-95)
A couple of points to consider in the manuscript		
6. cannot state caused by rugby need to restate throughout as "associated with rugby or involvement with the sport of rugby and that forwards could have been injured in the scrum"	We have avoided using "caused by rugby" in the whole paper. We have changed the sentence.	*Changed*: "This study suggests that radial lateral meniscus tears in the middle segment occur more frequently in rugby players, especially those in forward position." (Lines 218-219)
7. Ages influence the cohort's injury, maybe note age groups 17-20, 20-25? (https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5508267/)	We have read the article that the reviewer recommended. Survey in our center shows that the injury rate is high in young rugby players. Given our small sample, it is not possible to analyze by age stratification. We have cited the reference in Discussion.	*Added*: "The lateral meniscus is more mobile than the medial menicus, and isolated lateral meniscus tears occur more frequently in a traumatic setting in younger patients (12)." (Lines 158-160) *Reference added*: (12) Ridley TJ, McCarthy MA, Bollier MJ, Wolf BR, Amendola A. Age Differences in the Prevalence of Isolated Medial and Lateral Meniscal Tears in Surgically Treated Patients. *Iowa Orthop J*. 2017;37:91-94.
8. Do you have how many continued to play vs how many stopped playing due to pain, or pain scales?	We have added Lysholm score ,VAS, and KOOS scores at presentation, and the status of sport activity after injury.	*Added:* " At presentation, Lysholm scores ranged from 48 to 69 (average 57.1±5.8), VAS scores from 48 to 80 (average 59±11.3), and KOOS total scores from 220 to 375.7 (average 306.7±51.2). As for the status of sport activities after symptom onset, 5 patients with injury at unknown phase of play continued to participate in competition, and the remaining 6 patients suspended competition training, or only continued basic training (drills)." (Lines 113-118)
9. Do you have how many had surgery vs how many had conservative treatment and for how long?	We judged that recovery is difficult by conservative treatment in cases suspected of horizontal or oblique tear in the later meniscus on MRI.	*Added*: "The time from injury to arthroscopic examination and surgery was 5-16 (average 9) weeks in patients injured during tackle, 1 week in the patient

	Therefore, we selected one-stage arthroscopic surgery for all patients. The results are shown in section 4-4 in the manuscript. The time to surgery was longer in cases injured at unknown phase of play due to various reasons such as patient's delay to seek treatment and patient's wish to wait until the end of the league matches.	injured when running, and 6-56 (average 21) weeks in patients injured at unknown phase of play. Arthroscopic findings showed no cases with tear in the vascular zone correspodning to Cooper classification E-0 or E-1. Therefore, partial meniscetomy was performed in all patients." (Lines 140-144)
10. return to play outcomes?	All patients underwent arthroscopic partial meniscectomy had favorable postoperative course, and returned to play at the pre-injury competition level. We have added a new section in Results, and described the treatment outcome at the final examination.	*Added:* "Full weight-bearing was permitted 10 days after the operation, light exercise at jogging level was permitted at 8 weeks, and return to competition at 12 weeks. The treatment outcome at the final postoperative follow-up [follow-up period 6–13 (average 9.5±2.9) months] was as follows: Lysholm scores 84–100 (average 94.8±6), VAS scores 0–10 (average 5.3±4.7), and KOOS total scores 461.4–500 (average 481.3±12.1). All patients returned to playing rugby with no subjective symptoms." (Lines 145-150)
ABSTRACT		
11. Background: …"we have noted a high rate of lateral meniscus tear in the medial segment among rugby players." Compared to who? Which paper and what population? Or are you eluding to that a majority of your sports injured meniscal patients were encountered from rugby (n=11)? Please clearly state or change to "..we have found among our clinical sports population that encountered isolated lateral meniscal tears (n=27), to occur more often in the forwards position (n=10/27) in rugby, which could support it occurring in forwards play."	We thank the reviewer for the comment. We have made extensive changes in Abstract, complying with journal style. First of all, we have totally changed Background	*Changed*: "In our clinical experience with patients diagnosed anthroscopically with lateral meniscus tears in the middle segment, rugby players are more prevalent than players of other sports. We hypothesized that this injury is prone to occur during specific movements while playing rugby." (Abstract, lines 1-5)
12. Objectives: .." and isolated lateral meniscus tear in the middle segment." Please re-write.	We have changed the objective sentence, taking into consideration the comment of two reviewers.	*Changed:* "This study aimed to describe a series of lateral meniscus tears in rugby players." (Abstract, lines 7-8)
13. Methods: The methods need to be re-written to clearly note the methodology (retrospective chart review) and actual population clearly (charts with isolated meniscal tears found associated with sporting activity). ….."Among 4452 patients diagnosed with meniscus tears, 27 patients had isolated lateral meniscus tear in the middle segment. The cause of injury was sports activities in most of the cases, and	We apologize for the errors in the original manuscript, and we appreciate the useful suggestions from the reviewer. We have revised Methods, incorporating the suggestions of the reviewer.	*Changed* "We retrospectively reviewed the medical charts of cases with arthroscopically confirmed isolated lateral meniscus tear in the middle segment associated with rugby players diagnosed at our center between 2006 and 2020. We investigated the epidemiology of injury including the player position and phase of play; the symptoms; and imaging and arthroscopic findings." (Abstract, lines 10-14)

rugby was the most common." Include "..diagnosed via arthroscopy…" The table states n=26 (patients involved in sports?), but in the manuscript, it states n=27 (total knees?)? needs to be clear. Please re-write that this is your "clinical cohort and from this injured population you evaluated charts retrospectively that had an isolated medial meniscal tear from their involvement in the sport of rugby." please clarify what was your "sports activities in most of the cases"? what were the other injuries from? Were sports injuries in the n=27 (11/26 sports=rugby?, 1 degenerative), what was the breakdown. The reader shouldn't have to jump to the tables to understand this breakdown. Please re-word this section. "We studied the 11 cases of rugby-related injury", should be "..retrospectively reviewed charts…" include "with an arthroscopic diagnosis."		
14. Results: Please clarify and re-write, arthroscopy diagnosed meniscal tears or MRI diagnosed? was majority of knee (n=6/11) reported an unknown cause? Or mechanism or phase of play? Was it during the sport of rugby? need to clearly note. Were there any pain scales documented from this population? Kujala? Koos? On clinical exam any swelling? Any return to sport data?	We have rewritten Results, giving a brief description of the study population, player position, phase of play of injury, treatment, and outcome. Since including all the details of symptoms, treatment outcome and status of recovery will result in a lengthy abstract, we have described the details only in the main text.	*Changed*: "Of 4452 cases (4666 knees) diagnosed arthroscopically with meniscus tears, 27 cases (28 knees) were isolated radial lateral meniscus tears in the middle segment, 26 of which were sports-associated, including 11 cases related to rugby. Among the 11 rugby players, 10 were forwards, 5 of whom were in the front row. Injury was associated with tackle in 4 patients, while the phase of play of injury was unknown in 6 patients." (Abstract, lines 16-21) "All patients underwent arthroscopic partial meniscectomy. The postoperative course was favorable. All patients returned to play rugby at the pre-injury competition level. (Abstract, lines 23-25)
15. Conclusions: Need to re-write "In this study of isolated lateral meniscus tear in middle segment, the high frequency of injury in players in the front row and large proportion of injury with unknown cause suggest a high association of this injury with scrum." Yes, in theory, this could be hypothesized that 10 out of 11 players noted were in the forwards position and yes that all of them could have been involved in the scrum. I do not know if this could be supported without further evidence with only n=5, front row players. Could have	We agree that we overstated our conclusion. We have rewritten Conclusion stating only the clear findings in this study and omitted the speculations.	*Changed:* " This study suggests that radial lateral meniscus tears in the middle segment occur more frequently in rugby players, especially those in forward position. For these patients, manual examination is useful for clinical screening. If this injury is suspected, the injury should be confirmed at an early stage by MRI and arthroscopy, followed by appropriate treatments including arthroscopic surgery" (Abstract, lines 27-31)

been an awkward step, tackle, ruck or maul that possibly hyperextended the knee? Yes, over-extending is often found in scrummaging, which may force the forward row players to hyperextend but not necessarily the hooker that is actually hooking the ball at this juncture.		
MANUSCRIPT		
Background & Objectives		
16.Line 5: Grammar "…tear is estimated to be 11.5 per 100,000 population in the United States" please re-write to "….tears is estimated to be 11.5 per 100,000 in the United States population" is this in general or sporting population?	We thank the reviewer for the correction. Population referred to general population. We have changed the sentence accordingly.	*Changed:* ".....tears is estimated to be 11.5 per 100,000 in the United States general population, ..." (Lines 39-40)
17. Line 8: Grammar "…in stable knee…" change to "…in stable knees…"	We have corrected the word as advised.	*Changed:* "..... in stable knees....."" (Line 42)
18.Line 12: should include a citation of the incidence of meniscal injuries in rugby? please cite accordingly, to support this paper, rugby union (15-a-side) vs the rugby-7s (7-a-side).	We tried to search for the paper recommended by the reviewer but could not find it. We found other references and cited in Discussion.	*Added:* "In addition, the rate of meniscus tears was reported to be 2.4－16%." (Lines 167-168) *Added references:* (18) Dallalana RJ, Brooks JH, Kemp SP, Williams AM. The epidemiology of knee injuries in English professional rugby union. Am J Sports Med. 2007 May;35(5):818-30. doi: 10.1177/0363546506296738. (19) Ogaki R, Takemura M, Takaki S, Shimasaki T, Furukawa T. Epidemiology of knee injuries in Japanese collegiate rugby union players, The Journal of Physical Fitness and Sports Medicine, 2017;6(5): 343-348, doi.org/10.7600/jpfsm.6.343
19.Line 13: "…we have noted a high rate of lateral meniscus tear in the medial segment among rugby players.." change to "..we have found among our clinical sports population that encountered isolated lateral meniscus/meniscal tears occur more often in the forwards position in rugby, which could support it possibly occurring in the scrum."	This study was conducted based on the high frequency of rugby players sustaining lateral meniscus tear in the medial segment, and our analysis suggested that scrum was involved in this injury. To address the comments of two reviewers, we have added our hypothesis for this investigation.	*Changed:* "Among patients diagnosed anthroscopically with lateral meniscus tears in the medial segment encountered in our Center, we noticed that rugby players were clearly more prevalent than players of other sports. We hypothesized that this injury is prone to occur during specific movements while playing rugby." (Lines 54-58)
20.Line 14-16: this should be included in the methods	This part has been totally revised. The original sentences were deleted.	
21.Line 15-16: please clearly re-state the objectives/aims	We have clearly re-stated the objective/aim.	*Changed:* "This study aimed to describe in detail a series of lateral meniscus tears in rugby players"(Lines 57-58)
Methods		
22.Line 19: The methods need to be re-	Following the reviewer's	*Changed:*

written, inclusion and exclusion criteria.	advice, we have rewritten Methods	"We retrospectively reviewed the medical charts of our Center between January 2006 and April 2020 for cases with an arthroscopically confirmed diagnosis of meniscus tear. Inclusion criteria were cases with isolated lateral meniscus tears involving the middle segment, and the tears were either transverse or oblique. Exclusion criteria were morphological abnormal meniscus such as discoid meniscus, and other concurrent injuries such as ligament rupture, fracture, and serious cartilage injury. Among the cases identified, we focused on those in which injury was associated with rugby activities. We investigated the epidemiology of injury including laterality of injury, player position and phase of play; the symptoms; and imaging and arthroscopic findings." (Llines 62-70)
23.Line 20-21: "…were diagnosed with meniscus tear by arthroscopy in our Center…" should this be included in each methods section (including abstract), or should be re-written as confirmed diagnosis, because in the earlier methods section, it is stated that	We have rewritten this part specifying that the cases were arthroscopically proven meniscus tear. Please see our response for comment 22 above.	*Changed:* Please see above (comment 22).
24.Line 22-32: should be included in the results section. This is the actual epidemiological findings. "Among these cases, 261 knees of 249 patients had isolated lateral meniscus tear with no morphological abnormalities including discoid meniscus and no concurrent injuries such as ligament rupture and bone fracture. From these cases, we found only 46 knees of 44 patients (1.0% of all knees with meniscus tear) with tear in the middle segment (Cooper classification zone E (5)) (Figure 1). The vast majority of the tears in the middle segment were radial or oblique tears, found in 28 knees of 27 patients (10.8 % of all cases with isolated lateral meniscus tear and 61.4% of cases with tear in middle segment). The causes of injury were sport activities in 26 patients and age-related degeneration in the remaining patient. Rugby was the most common sport with 11 cases (39.2%), followed by soccer and baseball with 4 cases each, and then basketball with 2 cases (Table.1).	Following the reviewer's suggestion, we have moved this part to Results and partially modified the content.	*Moved to Results and partially changed*: "Among 4452 cases (4666 knees) of arthroscopically proven meniscus tear diagnosed at our Center, 249 cases (261 knees) had isolated lateral meniscus tear with no morphological abnormalities including discoid meniscus and no concurrent injuries such as ligament rupture, bone fracture and severe cartilage lesion. Of these cases, only 44 cases (46 knees) (1.0% of all knees with meniscus tears) had tears in the middle segment (Cooper classification zone E). More than half of the tears in the middle segment were radial tears, found in of 27 cases (28 knees) (61.4% of tears in middle segment, 10.8 % of all isolated lateral meniscus tears). The causes of injury were sport activities in 26 cases and age-related degeneration in the remaining case (Figure 1). Rugby was the most common sport with 11 cases (39.2%), followed by soccer and baseball with 4 cases each, and then basketball with 2 cases (Table 1)." (Lines 76-87)
25.Line 33: should change "In this study, we studied the 11 knees of 11 patients with radial or oblique tear in	We have changed this part as explained in comment 22.	*Changed*: Please see above (comment 22).

the medial segment of the lateral meniscus caused by rugby." to the actual study done "chart reviewed for isolated meniscal tears that were associated with rugby players.		
26.Line 35: "injured side"? laterality of injury; "situation"? Phase of play?	We have changed the expressions as suggested.	*Changed:* "....including the laterality of injury, player position, and phase of play……." (Lines 69-70) **"Laterality of injury"** (Line 89)
27.Line 37: Physical presentation and exams conducted?	We apologize for these statements. We have revised them.	*Changed:* "This retrospective chart review was approved by the institutional review board of the National Hospital Organization, Kofu National Hospital (serial number: 27-8)." (Lines 71-72)
28.Line 37: compliance with the journal's policy fully, shouldn't this be the ethics board for expedited retrospective chart review(RCR)? Or followed institutional board review RCR?		
29.Line 42: is there importance on dominant side?	We speculated that the loads on left and right lower limbs would be slightly different depending on the position of the rugby player. We examined laterality because we wanted to know whether props and locks have injury on the right or left side of the scrum, whether hookers have injury on the hooking side, and whether kickers have injury on the side of the pivot foot. However, we found no significant difference.	
30.Line 49: "Situation at the time of injury" doesn't this mean "phase of play"	We have changed the expression as suggested.	*Changed:* "2. Phase of play" (Line 99)
31.Line 50: should be "unknown" as compared to "unclear"	We have changed the expression as suggested.	*Changed:* "The most common phase of play was "unknown"(line 100)
32.Line 50-51: These lines do not support your theory of a hyperextension in the scrum? What were the forwards injured by? You may need to clearly state the phase of play or mechanism that injured the forward players. The proportions do not support the theory of 6 forwards being injured from scrum? How many mechanisms documented were front row players? 6-unknown, 2-tackle, 1-running, what about the other 2?	We apologize for the mistake. Injury when tackling and when being tackled were reported by 2 patients each. We have corrected this point. We also added phase of play by player position. Almost all the front row players sustained injuries with unknown cause and only one hooker was injured during tackling.	*Changed:* "When injuries were examined by phase of play, "unknown" was most common (6 patients), followed by tackle (2 patients when tackling and 2 patients when being tackle), and running (1 patient when taking off to run)." (Lines 103-105) *Added:* "When further categorized by player position, the phase of play in front row players was unknown in 4 cases and tackle in 1 case; that in second row players was unknown in 1 case and running in 1 case; and that in one three-quarter back player was tackle." (Lines 103-105)
33.Lines 89-92: please be consistent in citing references, could use Brooks and kemp clin sp med 27 (2008). For	We thank for reviewer for recommending the references. We have cited the references	*Changed:* "The rates of injury in elite and professional rugby players were reported

an overview of rugby union (rugby-15-a-side) adult elite injuries. Please do not use incidence in youth when comparing adults or elite play. If you choose to use community play, I would use the papers by Simon Roberts et al.	and specified the type of rugby players.	to be 91-294/1000 player-hours." (Lines 163-164) *Added:* "In addition, the rates of meniscus tears were reported to be 2.4－16%." (lines 167-168) *Changed and Added references*: (15)Roberts SP, Trewartha G, England M, Stokes KA. Incidence and Nature of Medical Attendance Injuries in English Community Rugby Union. *Orthop J Sports Med*. 2014;2(12):2325967114562781. Published 2014 Dec 19. doi:10.1177/2325967114562781 (16)Brooks JH, Fuller CW, Kemp SP, Reddin DB. Epidemiology of injuries in English professional rugby union: part 1 match injuries. Br J Sports Med. 2005 Oct;39(10):757-66. doi: 10.1136/bjsm.2005.018135. (18) Dallalana RJ, Brooks JH, Kemp SP, Williams AM. The epidemiology of knee injuries in English professional rugby union. Am J Sports Med. 2007 May;35(5):818-30. doi: 10.1177/0363546506296738. (19) Ogaki R, Takemura M, Takaki S, Shimasaki T, Furukawa T, Epidemiology of knee injuries in Japanese collegiate rugby union players, The Journal of Physical Fitness and Sports Medicine, 2017;6(5): 343-348, doi.org/10.7600/jpfsm.6.343
34.Line 93 "In rugby, since the physique and the role of the player differ depending on the position, the site and frequency of injury also vary (13,14)." Not certain if these are correct references? First is the consensus statement, and the second is on rugby-7s?	We apologize for citing inappropriate references. We have cited the paper of Simon Roberts recommended in the previous comment.	*Deleted:* Original references 13)14) *Added* reference 15) Roberts SP, Trewartha G, England M, Stokes KA. Incidence and Nature of Medical Attendance Injuries in English Community Rugby Union. Orthop J Sports Med. 2014;2(12):2325967114562781. Published 2014 Dec 19. doi:10.1177/2325967114562781
35.Line 94: grammar "Report has shown"	We have changed the expression to "McIntosh has shown ...."	*Changed*: "McIntosh has shown that the injury rate of forwards is higher than that of backs, and the frequencies of injury during tackles and scrums are high" (Lines 170-172)
36.Line 97: would not use "the vast majority" please reword.	We have given the actual number of players.	*Changed:* "Of the 11 rugby players who had lateral meniscus tear in medial segment in the present study, 10 players were forward players." (lines 172-173)
37.Line 99-102: this does not support	Following the reviewer's	*Added*:

the authors theory that by deduction, the other injuries were from the scrum? This needs to be reworded to state that meniscal injuries could possibly be from another phase of play or awkward mechanism or injury in rugby. The authors could transition to discuss possible mechanisms of injury to cause meniscal tears and thus include the discussion of scrums. Would then need to include other mechanical concerns in rugby play that could possibly induce hyperextension ie: lower leg tackles, sudden stops, leg planting etc.. to induce this pathology.	suggestion, we have added other possible mechanisms of injury. We have also speculated the mechanism of injury during scrum.	"Although there is a possibility that injury is caused by a direct external force during tackles and repeated side steps and sudden stops, the injury rates of backs and third row players are too low to support this possibility. Considering the specialized maneuvers of front row players, the meniscus tear may be related to repeated scrums in rugby." (Lines 177 -180)
38.Line 109: grammar: study used a cadaver knee or multiple knees?	The study used 14 cadaver knees. We have specified the number of knees.	*Changed*: "a study using 14 cadaver knees ..... " (line 187)
39.Line 112: grammar: "…during the scrum…"	We have changed accordingly.	*Changed*: "... during the scrum." (Lines 190-191)
40.Line 113: grammar: "…in the scrum…"	We have changed accordingly.	*Changed*: ".... in the scrum....." (Line 191)
41.Line 116: grammar: "…lateral meniscus tears…"	We have changed accordingly.	*Changed*: ".... lateral meniscus tears....." (Line 195)
42.Line 122: change "position of forward" to "forward position"	We have changed accordingly.	*Changed*: "forward position...." (Line 209)
43.Line 125: "…and proceed with appropriate treatment…" what are the outcomes if not acutely and appropriately treated? What are the long-term problems with continuance or return to play.	Radial tears in the middle segment of lateral meniscus are difficult to recover with conservative therapy, and we consider these tears to be an indication for surgical therapy. We have discussed the risks if these tears are not treated, and the surgical procedure used.	*Added:* "If this injury is left undiagnosed or untreated, there is a risk that the tear may progress and induce osteoarthritis, with the possibility that patients may not be able to continue rugby activities. Since the tears occur mostly in the avascular zone, conservative therapy is unlikely to improve the injury, and surgical therapy is considered to be the first treatment option. In general, the minimally invasive arthroscopic partial meniscectomy is selected. In recent years, surgical repair aiming at preserving the meniscus has been actively attempted, but the healing rate is reported to be 61%, which cannot be considered effective." (Lines 201 -208) *Added references:* (26) Tenuta JJ, Arciero RA. Arthroscopic evaluation of meniscal repairs. Factors that effect healing. Am J Sports Med. 1994 Nov-Dec;22(6):797-802. doi: 10.1177/036354659402200611. (27)Tsujii A, Amano H, Tanaka Y, Kita

		K, Uchida R, Shiozaki Y, Horibe S. Second look arthroscopic evaluation of repaired radial/oblique tears of the midbody of the lateral meniscus in stable knees. J Orthop Sci. 2018 Jan;23(1):122-126. doi: 10.1016/j.jos.2017.09.023.
44.127: "especially scrum" cannot clearly support this from the proportions found.	We agree that "especially scrum" should be deleted.	*Deleted:-* "~~especially scrum~~"
45.128: "posture" or technique?	We have changed to "scrum technique", as suggested.	*Changed:* "…..the scrum technique." (Line 215)
46.133: Please reword "the high frequency of injury in players in the front row and large proportion of injury with unknown cause suggest a high association of this injury with scrum."	We have revised this sentence to avoid speculation.	*Changed:* "This study suggests that lateral meniscus tear involving the middle segment occurs frequently in rugby players, especially in those in forward position." (Lines 218-219)
Reviewer 2		
1) First and foremost, this study is not evaluating the association between rugby and lateral meniscus tears. This is a case series of lateral meniscus tears in rugby players. You can never prove, or even propose, an association with this study design. What if 80% of your patients are rugby players? Then you are just dealing with a case of sampling bias. Therefore, the whole manuscript should be revised with this in mind.	We thank the reviewer for the pertinent comment. We have revised the sentence on study design and added information such as the numbers of patients by type of sport. In order to verify the conclusions of this study, it is necessary to conduct a large-scale study to investigate the situation of injuries by player position in the rugby team, and to analyze meniscus tear at various limb postures using cadaver knees or computer simulation. We report this series as a basis for proposing a full study on this issue in the future. We have revised the entire paper, and avoided explicit statements in the conclusion.	*Added:* Numbers of patients by type of sport in Table 1.
2) As stated, the title does not represent the study at all. The title should be changed to "Isolated lateral meniscus tears in rugby players". The association is just a hypothesis which is not addressed in this study at all.	We thank the reviewer for suggesting appropriate title for this report. We have changed the title taking into consideration the comments of both reviewers,.	*Changed*: Title " A hospital clinic experience with isolated lateral meniscal tears in sports: a chart review on rugby"
Abstract		
3) Again, you did not investigate any relationship here. Change the objective to something like "describe a series of lateral meniscus tears in rugby players" or a similar sentence.	We agree with the reviewer's comment. We have changed the sentence.	*Changed:* "This study aimed to describe a series of lateral meniscus tears in rugby players." (Abstract, lines 7-8)
4) methods, last line: you did not analyze any relationship. Revise.	We have changed the sentence to address this comment.	*Changed*: "We retrospectively reviewed the medical charts of cases having arthroscopically confirmed isolated

		lateral meniscus tear in the middle segment associated with rugby players in our center between 2006 and 2020." (abstract, lines 10-14)
5) results: change "rugby position" to "player position". Second line: why should patients report any cause? Revise.	We have changed "rugby position" to "player position" thrughout the paper. Regarding the causes of injury, we have revised the sentence.	*Changed*: "rugby position" to "player position" thrughout the paper. *Changed*: "Injury was associated with tackle in 4 patients, while the cause of injury was unknown in 6 patients." (Abstract, lines 19-21)
6) Conclusion: this conclusion is not derived from the results of this study. you are just restating your hypothesis. Revise.	We agree that we overstated the conclusion. We have rewritten Conclusion stating only the clear findings in this study and omitted the speculations.	*Changed*: "This study suggests that radial lateral meniscus tears in the middle segment occur more frequently in rugby players, especially those in forward position. For these patients, manual examination is useful for clinical screening. If this injury is suspected, the injury should be confirmed at an early stage by MRI and arthroscopy, followed by appropriate treatments including arthroscopic surgery" (Abstract, lines 27-31)
Background		
7) line 14-16: you have not stated a clear 'research question' or hypothesis here. Change accordingly.	We have added our hypothesis in Background.	*Added:* "We hypothesized that this injury is prone to occur during specific movements in rugby competition." (Lines 56-57)
Methods		
8) Figure 1 does not add anything to the paper and is redundant. Remove the figure.	We have removed Figure 1 in the original manuscript. Following the advice of the other reviewer, we have added a new Figure 1 showing a flowchart of case selection.	*Deleted:* "Figure 1" in original manuscript. Added: New Figure 1 showing a flowchart of case selection.
9) Because this study is describing the patterns of meniscus injuries in rugby players, I suggest you move the lines 27-32 to the results section. This is not part of the methods but is your results.	We have moved this part to Results, and partially revised the content.	*Moved and partially changed:* "Among 4452 cases (4666 knees) of arthroscopically proven meniscus tear diagnosed at our Center, 249 cases (261 knees) had isolated lateral meniscus tear with no morphological abnormalities including discoid meniscus and no concurrent injuries such as ligament rupture, bone fracture and severe cartilage lesion. Of these cases, only 44 cases (46 knees) (1.0% of all knees with meniscus tears) had tears in the middle segment (Cooper classification zone E). More than half of the tears in the middle segment were radial tears, found in of 27 cases (28 knees) (61.4% of tears in middle segment, 10.8 % of all lateral meniscus tears). The causes of injury were sport activities in 26 cases and age-

		related degeneration in the remaining case (Figure 1). Rugby was the most common sport with 11 cases (39.2%), followed by soccer and baseball with 4 cases each, and then basketball with 2 cases (Table 1)." (Lines 76-87)
10) Instead, I suggest adding a paragraph describing the positions in rugby to readers who are unfamiliar with the sports. I am sure rugby is big in Japan, but this is definitely not the case across all Asia. So, please describe the player positions in a few sentences.	As suggested, we have added a paragraph describing rugby played in Japan.	*Added*: "Rugby is a full contact team sport played by two teams competing to bring an oval-shaped ball into the opponent's in-goal to score points. In Japan, rugby is generally played with 15 players on each side. Player positions are broadly divided into forwards and backs. Forwards compete for the ball in a scrum and require big body size and great strength, while backs advance the ball by passing, dodging, kicking, and other maneuvers, and require running ability and agility." (Lines 48-53)
Results		
11) I suggest adding time from injury to your variables. I suppose most of these would be acute injuries, but it's interesting to know the data.	As suggested, we have added time from injury to arthroscopic examination/surgery in a new section "Treatment methods and outcome"	*Added*: "The time from injury to arthroscopic examination and surgery was 5-16 (average 9) weeks in patients injured during tackle, 1 week in cases injured when running, and 6-56 (average 21) weeks for cases injured at unknown phase of play." (Lines 140-142)
12) line 63: change "were found in all…" to "were found in none.."	We have changed the sentence as suggested.	*Changed:* "The narrowing of joint space and the osteophyte formation were found in none of the patients." (Lines 122-123)
13) femorotibial angle and the tibial slope measurement should be explained in the methods. I suggest adding a representative radiograph.	We have added Figure 2 which are representative radiographs, and explained FTA and PTS in the legend.	*Added*: "Femorotibial angle (FTA) ranged from 171 to 179°, with an average of 176.1°(Figure 2a). Posterior tibial slope (PTS) ranged from 3.5 to 10.5°, with an average of 7.4°(Figure 2b)." (Lines 123-125) *Added*: Figure 2. Measurements of articular axis Legend to Figure 2: "(**a)** FTA: On an anteroposterior radiograph, draw two transverse diameters on the femoral diaphysis. Join the midpoints of the transverse diameters to draw the femoral axis. Repeat the same procedure to draw the tibial axis. The angle between the femoral axis and the tibial axis is defined as the FTA. **(b)** PTS: On a lateral radiograph, draw the transverse diameters of the tibial diaphysis at 5 cm and 15 cm distal to the tibial articular surface. Join the midpoints of the transverse diameters to draw the bone axis. The angle between the the

		perpendicular line of bone axis and the horizontal line along the tibial joint surface is defined as the PTS" (legend, lines 332-341)
14) Figure 2: I have two comments. First, what do you mean by PDT2-weighted for the second image? I suppose you mean proton density. Also, both cuts are practically the same. I suggest removing one (probably the T1 image). If possible, you can add a coronal image from a different patient for comparison.	We have presented only one T1-weighted image in this figure.	
15) you have described the arthroscopic findings. Please add the treatment chosen for the tears. How many were debrided, how many were repaired?	We have added a new Section: Treatment methods and outcome.	*Added*: **4-4. Treatment method and outcome** "The time from injury to arthroscopic examination and surgery was 5-16 (average 9) weeks in patients injured during tackle, 1 week in cases injured when running, and 6-56 (average 21) weeks for cases injured at unknown phase of play. Arthroscopic findings showed no cases with ter in the vascular zone correspodning to Cooper classification E-0 or E-1. Therefore, partial meniscetomy was performed in all patients (*2)(*3). Full weight-bearing was permitted 10 days after operation; light exercise at jogging level was permitted at 8 weeks, and return to competition at 12 weeks. The treatment outcome at the final postoperative follow-up [follow-up period 6–13 (average 9.5±2.9) months] was as follows: Lysholm scores 84–100 (average 94.8±6), VAS scores 0–10 (average 5.3±4.7), and KOOS total scores 461.4–500 (average 481.3±12.1). All patients returned to playing rugby with no subjective symptoms." (Lines 139-150)
Discussion		
16) Generally well-written.	We thank the reviewer for the positive comment.	
Conclusion		
17) As mentioned for the conclusion of the abstract, these are not your findings. Remove your speculations and add what you have found in this study. As you have not (and could not, with this design) investigate any relationship or association, you cannot conclude that such an association exists. A proper conclusion would state that "in the study of 11 cases of lateral meniscus tears in rugby players" we found such and such…	Following the reviewer's suggestion, we have rewritten Conclusion stating only the clear findings in this study and omitting the speculations.	*Changed:* "This study suggests that horizontal or oblique lateral meniscus tears in the middle segment occur more frequently in rugby players, especially those in forward position. For these patients, manual examination is useful for clinical screening. If this injury is suspected, the injury should be confirmed at an early stage by MRI and arthroscopy, followed by appropriate treatments including arthroscopic surgery." (Lines 218-222)

OPEN PEER REVIEW

Revision (1)

Here, you can see the **Reviewers**, **Associate Editors** and **EICs'** comments from the beginning to the end of the revision process.

Soroush Baghdadi: Reviewer | **Revision** (1) 5 Dec 2020

Dear AE,
I would like to thank the authors of the revised manuscript titled “A hospital clinic experience with isolated lateral meniscal tears in sports: a chart review on rugby” for submitting their work.
While I appreciate the changes made and their response to my comments, I think some of my concerns were not addressed properly.
1) line 4-5: This is not the hypothesis you can prove with this design. Did you perform biomechanical tests to prove that some movements in rugby render the patient prone to meniscal injury?
2) line 27: the conclusion is not derived from the study.
3) line 56: Similar to the abstract.
4) line 218: conclusion should be revised again.
Thanks.

REFEREE: Associate Editor | **Revision** (1) 25 Dec 2020

Dear EIC,
The paper is greatly improved after revision, but still, some minor remarks are remained.
Thanks.

REFEREE: EIC | **Revision** (1) 25 Dec 2020

Dear Author,
The second round of peer review of the manuscript is completed. I now have the reports of the Referees, which suggest that this manuscript needs more correction.
Thanks.

OPEN PEER REVIEW

Revision (2)

Reply to Reviewers

Ideally, the reviewing process can significantly improve the submitted manuscripts by allowing the authors to take into account the advice of reviewers. Author(s) must reply to all reviewers' comments in a separate Word file, point by point. A "**Reply to Reviewers**" document is submitted along with revised manuscript during submission of revised files, summarizing the changes that the authors made in response to the reviewers' comments. The responses to reviewers' comments specifies how the authors addressed each comment the reviewers made.

You can read the authors' responses to the reviewers' comments in the next page.

Numbered Reviewer Remark and Manuscript Line Number	Author Response	Revised Manuscript Line Number and Text Change
Reviewer 1		
1. line 4-5: This is not the hypothesis you can prove with this design. Did you perform biomechanical tests to prove that some movements in rugby render the patient prone to meniscal injury?.	We agree that the hypothesis we wrote cannot be proven with our study design. We have changed the hypothesis to one that can be proven by our study design.	*Changed* *From*: "We hypothesized that this injury is prone to occur during specific movements while playing rugby." *To*: "We hypothesized that meniscus tear in the middle segment is a common injury in rugby players and is associated with specific positions in rugby." (Lines 4-5)
2. line 27: the conclusion is not derived from the study.	We have rewritten the conclusion based on the results obtained from the study.	*Changed* *From*: "This study suggests that radial lateral meniscus tears involving the middle segment occur frequently in rugby players, especially in forwards. For these patients, manual examination is useful. When this injury is suspected, the injury should be confirmed early by MRI and arthroscopy, followed by appropriate treatments such as arthroscopic surgery." *To*: "In this study, radial lateral meniscus tear involving the middle segment occurred frequently in rugby players, mostly in forward positions. arthroscopic partial meniscectomy achieved return to play in all players" (Lines 27-29)
3. line 56: Similar to the abstract.	We have changed the sentence as in Abstract.	*Changed* *From*: "We hypothesized that this injury is prone to occur during specific movements in playing competition." *To*: "We hypothesized that meniscus tear in the middle segment is a common injury in rugby players and is associated with specific positions in rugby." (Lines 56-58)
4. line 218: conclusion should be revised again.	We have changed Conclusion as in Abstract.	*Changed* *From*: "This study suggests that radial lateral meniscus tears involving the middle segment occur frequently in rugby players, especially in forwards. For these patients, manual examination is useful. When this injury is suspected, the injury should be confirmed early by MRI and arthroscopy, followed by appropriate treatments such as arthroscopic surgery." *To*: "In this study, radial lateral meniscus tear involving the middle segment occurred frequently in rugby players, mostly in forward positions. Arthroscopic partial meniscectomy achieved return to play in all players." (Lines 219-221)

OPEN PEER REVIEW

Revision (2)

Here, you can see the **Reviewers**, **Associate Editors** and **EICs'** comments from the beginning to the end of the revision process.

REFEREE: Associate Editor | **Revision** (2) 10 Feb 2021

Dear EIC,
All corrections and revisions are appropriate for me.
Thanks.

REFEREE: EIC | **Revision** (2) 10 Feb 2021

Dear Author,
The third round of peer review of your manuscript has been completed, and I am pleased to inform you that your manuscript has now been accepted for publication in our journal.
Thanks.