Reviewer’s report

Title: Assessment of free-hand transperineal targeted prostate biopsy using multiparametric magnetic resonance imaging-transrectal ultrasound fusion in Chinese men with prior negative biopsy and elevated prostate-specific antigen

Version: 0 Date: 22 Sep 2016

Reviewer: Andrey Fedorov

Reviewer’s report:

This is a relevant study investigating the utility of MR-TRUS fusion guided biopsy sampling and PI-RADS on a cohort of Chinese men. The conclusion are consistent with the similar studies in demonstrating the benefits of TB relative to SB, and further improvement of performance while combining TB and SB on the same patient. The article could be of moderate interest to the reader by contributing to the increasing volume of knowledge evaluating and comparing targeted biopsy approach.

The main direction for the suggested improvement of the article are as follows:

1) Methodology description of the fusion biopsy procedure is not sufficient. The "freehand biopsy procedure" needs to be defined in more details. Specifically, how did the operator, in absence of template, guided the insertion of the needle in this transperineal approach? How was the needle puncture point decided? Indeed, the authors may be right that "freehand biopsy procedure" was not evaluated before, but it is not clear what that procedure entails. "freehand" typically refers to the approach used to handle the ultrasound probe, not to perform the biopsy itself.

2) The manuscript suffers from numerous language issues, as detailed below. I strongly suggest the authors approach a native English speaker editor to seek help in improving the text.

Some specific comments follow.

Methodology

* what was the position of the patient? how was the patient constrained to the biopsy table?

* " the biopsy started with TB using the free-hand transperineal technique without the guide of template." - more details needed

* "All targeted lesions were biopsied at least two cores and sampled once in both axial and sagittal planes." - this statement is confusing. This could be confused with the needle insertion approach, which I presume remained transperineal.

* Was SB performed using transperineal or transrectal approach?
* Since SB was performed after TB, there is a possibility that the operator could easily remember the locations of the targets from the TB done just before. Why was SB not done before TB?

* Pathology analysis - what was the criteria to prescribe RP to the biopsy patients?

Discussion

* please put in context the recent article by Radtke et al. [1]

Language comments:

* Page 5 positivitywas

* Page 7 PSA related anxiety and repeated biopsy dilemma will consist

* Page 7 the concept of targeted biopsy (TB) on suspicious areas through magnetic resonance imaging (MRI) guidance established

* Page 7 wildly used

* Page 7 soft prostate resolution of MRI

* Page 7 practicability

* Page 8 bicentric results -- uncommon term

* Page 8 acquirement of different MRI sequences

* Page 9 the new system had not well validated

* Page 10 significance cancer

* Page 11 mean MRI lesion per patient <-- mean number of MRI lesions?

* Page 12 SB alone lost 14 cases of cancer <-- missed?

* Page 13 Supplementary Figure 1 also showed a strong relationship existed between PI-RADS score and biopsy results.

* Page 14 result may due

* Page 15 the incidence of infectious complications following TRUS guided transrectal approach for prostate biopsy is steadily escalated

* Page 16

Are the methods appropriate and well described?
If not, please specify what is required in your comments to the authors.

No

Does the work include the necessary controls?
If not, please specify which controls are required in your comments to the authors.

Yes

Are the conclusions drawn adequately supported by the data shown?
If not, please explain in your comments to the authors.

Yes

Are you able to assess any statistics in the manuscript or would you recommend an additional statistical review?
If an additional statistical review is recommended, please specify what aspects require further assessment in your comments to the editors.

I am able to assess the statistics

Quality of written English
Please indicate the quality of language in the manuscript:

Not suitable for publication unless extensively edited

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