Letter to the Editor

Ultrasound-guided vacuum-assisted biopsy is an accurate type of biopsy to detect female breast cancer

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Comment on: Lu W, Tu L, Xie D, *et al.* A systematic review and meta-analysis: value of ultrasound-guided vacuum-assisted biopsy in the diagnosis and treatment of breast lesions. Gland Surg 2021;10:3020-9.

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We read the recent published paper by Lu and colleagues entitled "*A systematic review and meta-analysis: value of ultrasound-guided vacuum-assisted biopsy in the diagnosis and treatment of breast lesions*" (1). Lu and colleagues confirm that ultrasound-guided VAB has excellent performance in the diagnosis of breast cancer. We appreciate Lu *et al.* (1) for the valuable study, however, we have several concerns that need to be elucidated in order to augment the validity of the Lu *et al.*' (1) conclusions.

First, in the results section of the abstract, the authors depicted that the platelet-lymphocyte ratio (PLR) and neutrophil to lymphocyte ratio (NLR) were the effect sizes. However, the indicators of PLR and NLR had nothing to do with this study. Actually, the PLR and NLR are abbreviations for positive likelihood ratio and negative likelihood ratio. Furthermore, the authors revealed ultrasound-guided vacuum-assisted biopsy (VAB) in the treatment of breast lesions in the title. However, this study aimed to assess the performance of ultrasound-guided VAB diagnosing breast cancer, and did not refer to the treatment of breast cancer. Therefore, we consider that the title of this article might not be appropriate.

Second, this article is a systematic review and meta-analysis of diagnostic test accuracy studies. The odds ratio (OR) was introduced in the statistical analysis section. However, OR was not suitable for the present study and was not referred in the results section. Therefore, we believe that the unnecessary effect size depicted would result in misunderstanding. Furthermore, the assessment of the risk of bias and methodological quality of the included studies might be more appropriate by using the Quality Assessment of Diagnostic Accuracy Studies 2 tool, which is a revised quality assessment application developed definitely for a meta-analysis of diagnostic accuracy studies (2).

Third, the ten studies included in the heterogeneity assessment showed significant heterogeneity (χ^2=37.10 for sensitivity, P=0.011; χ^2=32.00 for specificity, P=0.043). As the significant heterogeneity, meta-regression and subgroup analyses should be performed to explore potential sources of heterogeneity. The covariates such as country, year of publication, and sample size might be taken into account when meta-regression and subgroup analyses are performed.

Fourth, the lack of evaluation of publication bias is an important issue. Publication bias is inherent to the publication process, where large or positive results are given precedence. Therefore, the Deeks' funnel plot asymmetry test should be applied to evaluate publication bias, through a P value >0.05 showing no significant publication bias (3). Therefore, without analysis of publication bias, the clinical validity of the findings can be called into question.

We appreciate that Lu *et al.* (1) analysed a valuable issue concerning the clinical efficacy on the use of ultrasound-guided VAB diagnosing breast cancer. We make these

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comments only to promote the clinical utility of ultrasound-guided VAB and recommend that the authors of similar such studies may take into account these comments.

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Ethical Statement: The authors are accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

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