Review of: "Deep Learning-based Automated Rare Sperm Identification from Testes Biopsies"

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Potential competing interests: The author(s) declared that no potential competing interests exist.

In this manuscript Ryan Lee et al described "Deep Learning-based Automated Rare Sperm Identification from Testes Biopsies".

As a biologist I really enjoyed reading the manuscript and in my opinion the manuscript is well structured, written in Standard English and could be potentially considered for publication after minor revisions.

The main research question should be clearly stated in the introduction and the relevant previous attempts implementing AI system for sperm analysis could be considered.

Authors have tried to introduce NOA as the main target group of this study, therefore, biological and clinical aspect of NOA is relatively important for the broad range of readers so providing definitions and statistics in the introduction would greatly improve the manuscript.

Authors may consider: doi.org/10.1007/s00439-020-02112-y and doi.org/10.1016/j.lfs.2021.119336 and doi: 10.5812/jjcmb.115298.

The discussion section should be improved as well and the applicability of the introduced AI system should be discussed along with the previously published papers stating advantages, possible disadvantages and challenges.

Adding a line or so in training step about inter-species variations also will improve the manuscript.