Peer Review File

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Reviewer A

Comment 1: In the highlight box, key findings, the second sentences are duplicated in the first sentences. Erase one.

Reply 1: We thank the Reviewer for identifying this issue. We have made the appropriate deletion.

Changes in the text: The appropriate modification has been made to the Highlight Box (Line 90)

Comment 2: Study design and patient population are vague. Do you mean all 669 patients are from your hospital? One hospital or a group of hospitals? What is the RU provider office? is it different from your hospital? Are there any other hospitals in your area that can offer mTESE but are not part of your group? Because this is a retrospective study, these situations become very important. So please explain.

Reply 2: All 669 patients were evaluated at our tertiary academic center – which is one hospital located in the downtown center of a major metropolitan urban city. The Reproductive Urology clinic is located within the Department of Urology at this tertiary academic center. We agree with the Reviewer that the physical location and number of clinics and hospitals included in our catchment area is important to the reader, and this has been incorporated into the manuscript. There are other hospitals in our area that can offer mTESE, that are not part of our group. We also acknowledge this shortcoming as a possible source of bias in our retrospective study, and is mentioned in our limitations (Lines 249-252).

Changes in the text: The appropriate changes have been made to the Material and Methods section (Lines 162-169).

Comment 3: We need to know how much the cost of mTESE is in your hospital. This information is very important to understand the financial part of your results.

Reply 3: We thank the Reviewer for this question. Unfortunately, we are restricted from publishing the cost of the mTESE procedure by our institution, which is variable depending upon the presence or absence of insurance coverage. However, we do refer to this in the Discussion section (Lines 224-225), where it is noted that the costs can be highly variable, ranging from as little as $500 to > $5000.

Changes in the text: None.

Reviewer B

Comment 1: I congratulate the authors on their work assessing factors that potential impact the decision for a man with NOA to pursue microTESE. This is a well performed and well written study which I have very little criticism for. The authors acknowledge the limitations.

Reply 1: We thank the Reviewer for their feedback and comments.

Changes in the text: None.

Reviewer C

Comment 1: This manuscript described that this study included adult men (>18 years of age) who underwent SEA within the authors academic health system. Were chief complains of these patients ‘’wish for baby”? or included the patients with pre-marriage check (bridal check)?

Reply 1: Our patient population includes men referred to the Reproductive Urology clinic for evaluation for fertility/infertility. While most men in our clinic are seen for infertility, a small proportion of men are seen for assessment of fertility status prior to beginning attempts to conceive (i.e. adolescents with Klinefelter syndrome). We appreciate the Reviewer’s comment, implying that some men with NOA may not have been actively trying to conceive, and may have delayed mTESE for this reason. However, we have confirmed that all couples in the current study were trying to conceive.

Changes in the text: The appropriate clarification has been made to the Materials and Methods section (Line 148)

Comment 2: It is difficult to understand the sentence Page4 line149. ‘’Out of 669 patients evaluated for NOA, 169 met diagnostic criteria of being diagnosed with NOA.” Please describe more details.

Reply 2: We apologize for our wording on initial submission. 169 patients met diagnostic criteria for NOA among 669 azoospermic men screened for fertility evaluation.

Changes in the text: The appropriate change has been made to the Material and Methods section (Line 150-151).

Comment 3: NOA is not defined bilateral testicular volume 7.6 mIU/mL. Please described why the authors included these criteria.

Reply 3: NOA is defined by lack of sperm in the ejaculate due to failure of spermatogenesis. In a clinical setting, this entails two semen analyses showing azoospermia, no obvious etiology of obstruction (i.e. prior vasectomy, bilateral absence of the vas deferens), FSH>7.6 mIU/mL, and testicular long axis <4.6 cm as described by Schoor et al (PMID: 11743304). Since these patients do not routinely undergo testicular ultrasound for testicular volume measurements, bilateral

testicular volume <15 cc on clinical exam is an acceptable surrogate and has been previously published as diagnostic criteria for NOA (PMID: 33071639)

Changes in the text: The appropriate supporting citation has been added to the Material and Methods section (Line 153, Reference 13)

Comment 4: Does surgery of mTESE covered with health insurance? How cost is it in state of Illiois or the authors hospital? Is it different among the hospitals? How much is the patient cost?

Reply 4: We thank the Reviewer for these important questions. Insurance coverage for mTESE is variable in the state of Illinois and among the patients presenting at our institution. Unfortunately, we are restricted from publishing the cost of the mTESE procedure by our institution, which is variable depending upon the presence or absence of insurance coverage. However, we do refer to this in the Discussion section (Lines 224-225), where it is noted that the costs can be highly variable, ranging from as little as $500 to > $5000.

Changes in the text: None.

Comment 5: How to explain the patients about mTESE is the most important point whether patients elect mTESE. Please explain.

Reply 5: We agree that patient counseling is an important aspect of patient decision-making to undergo mTESE. However, each patient seen in our RU clinic is extensively counseled regarding the risks, benefits, expected recovery, and chance of successful sperm retrieval for the operation. We will include that the initial RU evaluation includes extensive discussion of these important details that may persuade or dissuade a patient from undergoing mTESE.

Changes in the text: The appropriate addition has been made to the Material and Methods section (Lines 155-157)

Comment 6: Patients who did not elect mTESE gave up having children? If you know, let me know.

Reply 6: Given the retrospective nature of the study, and that our clinic is a tertiary referral center, we do not have sufficient data or follow up on patient who elected to not pursue mTESE at our institution. We acknowledge this limitation in our Discussion section (Lines 249-252).

Changes in the text: None.

Reviewer D

Comment 1: In the results/analysis please justify why white race was used as reference for the logistic regression.

Reply 1: We thank the Reviewer for this comment. For any logistic regression, a single variable level must be chosen as the referent category for any number of reasons. In the current study, White race was chosen as the reference category due to having the largest N. Likewise, Private insurance was chosen as the reference category due to having the largest N.

Changes in the text: None.

Comment 2: One consideration would be to see if the patients who attempted to conceive for longer, also had a lower average income. This would shed a light on why they take longer to seek care and why they would choose TESE vs mTESE.

Reply 2: We thank the Reviewer for this suggestion. There was no statistically significant correlation between patients who attempted to conceive for longer and overall income. These variables also did not exhibit collinearity, and were therefore used independently for the multivariable regression analysis.

Changes in the text: None.