**Peer Review File**

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| Reviewer A- Reviewer B the DISCUSSION | |
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| Recommendations | Corrections |
| "Anatomically TT is classified as extra-vaginal, torsion occurs at the level of the external inguinal ring commonly seen in neonates."<br>Comment - extravaginal TT does indeed almost exclusively occur in neonates (or prenatally), but it is an uncommen/rare disease; so instead of "commonly", perhaps "usually only observed" might be better. | Anatomically TT is classified as extra-vaginal, torsion occurs at the level of the external inguinal ring usually only observed in neonates<br><br>See track changes |
| "Although doppler ultrasound (U/S) is the common imaging study used,"<br>Comment - similar problem as before. Perhaps "most common"? | Although doppler ultrasound (U/S) is the most common imaging study used |
| "Patient history, physical examination and urinalysis can usually confirm the diagnosis..."<br>Comment - Diagnosis of testicular torsion is only definitely confirmed at surgery. Instead of "confirm", consider "indicate" or "suggest". | Patient history, physical examination and urinalysis can usually indicate confirm the diagnosis (11, 12) but diagnosis of testicular torsion is only definitely confirmed at surgery. It has been recommended that imaging studies do not need to be performed if these clinical assessments are suggestive of torsion, and rather such a patient should undergo immediate surgical exploration if in doubt (13, 14). |
| "Surgical intervention is the most effective treatment for intravaginal testicular torsion..."<br>Comment - "most effective?" I respectfully disagree. As manual detorsion cannot be considered a definitive treatment, surgery is, matter-of-fact, the only available effective treatment for the disease. | Surgical intervention is the only effective most effective treatment for intravaginal testicular torsion, with the best results noted if performed before the testes become necrotic optimal generally within 6 hours of the onset of symptoms (15) |

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| "A diagnostic test that is simple, cheap, non-invasive, easily accessible with a superior sensitivity and specificity is favoured in clinical practice, whilst ultrasound scan with doppler is considered the "Gold Standard", testicular scintigraphy has a 95% sensitivity compared to 85-93% for U/S (14, 17)."<br><br>Comment - please rewrite, very confusing...Also, consider rewriting the two paragraphs that follow this one as one single paragraph, which will provide the rationale for your study. | A diagnostic test that is simple, cheap, non-invasive, easily accessible with a superior sensitivity and specificity is favoured in clinical practice, whilst and doppler U/S ultrasound scan with doppler is considered the "Gold Standard", with a sensitivity of 85%-93%. Comparatively, testicular scintigraphy has a superior sensitivity of 95% (14, 17).<br><br>Testicular scintigraphy is a noninvasive imaging study which evaluates testicular perfusion, differenting a non-perfused testicle of acute torsion from the hyperemic tissues seen in epididymo-orchitis and other scrotal conditions which present with similar clinical symptoms. It is thus documented to have additional benefits of not only having a value-added diagnostic role in non-surgical testicular pathologies (7,8); but also, its ability to classify the findings in terms of early, mid or late phase torsion (see Table 1), gives an added benefit to the role it plays in prompt diagnosis and surgical intervention. Successful intervention is highly dependent on the time of onset and presentation to the emergency department or urology department with a complaint of scrotal pain. |
| "Thus, we aimed to determine the effectiveness of testicular radionuclide scintigraphy in correctly diagnosing testicular torsion among patients referred to the Department of Nuclear Medicine at Dr George Mukhuri Academic Hospital." | Thus, we aimed to determine the effectiveness of testicular radionuclide scintigraphy in correctly diagnosing missed testicular torsion and its significance and role as an |

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| Comment - As this last paragraph of the intro is set to contains the hipothesis and goal of the study, consider fleshing it out a little more, i.e., try to include a hypothesis or a more clearly defined goal. | imaging modality among in the management of these patients |
| METHODS<br><br>The study's inclusion criteria, as written in the first two paragraphs, is not clear. Did the authors include all scintigraphy patients, or did they collect all cases and selected cases based on the calculated sample size? Please consider rewriting. | A cohort of all patients, pediatric and adult, referred for who underwent testicular scintigraphy Department of Nuclear Medicine at Dr George Mukhari Academic Hospital (DGMAH), during the period of Jan 2016-December 2021 were included in our study. These consisted of patients who presented to the accident and emergency as well as the Urology outpatient departments with a history of acute scrotal pain. |
| RESULTS<br><br>"The reason for the low numbers of U/S cases on the PACS may be due to the referral system. U/S is a bed side examination, that may be done in casualty or in the ward, therefore there may be patients who didn't get referred to radiology for<br>18 their U/S thus no available reports"<br>Comment - perhaps include this explanation in the "problems/issues" section of the discussion. | Added to the limitations section in the discussion |
| "Illustrated by marked increase in flow and blood pool in the affected scrotum in the flow images and subsequent increased activity in the epididymis, and following the anatomical outline will be appreciated as an incomplete rim of activity in TS."<br>Comment - Redundant, is it not? This text is more fitting to be included in a figure legend, or perhaps in the discussion. | Removed from the results section.<br>Placed in the figure legend |
| DISCUSSION<br><br>I found this section too confusing in its writing and logical flow to comment, and my unsurprising recommendation is to carefully rewrite it. | See Track changes within the discussion. |

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| It seems that Table 3 is not really needed. Since there is perfect agreement between imaging and surgical findings, a simple statement in the results section is more than enough. | Removed from the results section |
| Table 5 has several issues, not the least of them is the inappropriate use of a statistical test and p-value, to effect comparisons that are not meaningful. I respectfully suggest to the authors to abstain from statistical testing unless they have a clear and justifiable (to us readers) reason to do so. The paper describes a retrospective patient series selected by a specific imaging indication, and there is no problem whatsoever in writing it as such | Statistical testing has been removed from the table |