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Reviewer A

The authors describe the usefulness of microscopic varicocelelectomy using the VITOM telescope, but some major questions remain.

Comment 1: First, the authors mention few characteristics about the VITOM telescope. Specifications, magnification, settings and intraoperative use should be mentioned.

Reply 1: Details on the model, specifications, magnification and settings of VITOM had been added (see Page 4, line 71).

Changes in the text: In the setting of microscopic subinguinal varicocelelectomy, the VITOM 2D and 3D model equipped with high-definition or 4K ultra-high-definition image quality and stereopsis-3D capability (magnification: $\times 2$, field of view: 50 – 150 mm, depth of field: 35 – 100 mm) provides excellent imaging and anatomical details, which allows for better identification of testicular artery necessary for the surgery.

Comment 2: If the advantages of the VITOM telescope are to be discussed, the differences from conventional microscopes (on outcomes, complications, recurrence rates, etc.) should also be discussed. Were the authors performing low ligation with a conventional microscope prior to the introduction of this system? If so, a comparison should be made between the two techniques.

Reply 2: Details on the comparison between two techniques had been added according to recommendation provided reviewer (see Page 4, line 58-64).

Changes in the text: For example, none of the patients in the subinguinal microscopic group had developed post-operative hydrocele, whereas post-operative hydrocele were observed in the open inguinal group (13%) and laparoscopic group (20%). Besides, only one patient in the subinguinal microscopic group experienced recurrence of one varicocele compared to 7 and 9 patients in the open and laparoscopic groups, respectively. Microscopic subinguinal varicocelelectomy is capable of achieving small and aesthetic skin wound with fewer complications compared to conventional non-microscope varicocelelectomy.

Comment 3: In line 78, it was stated "The indications for varicocelelectomy for all patients were mainly testicular pain and testicular hypotrophy," but in line 109, it was stated that the patient's chief complaint was scrotal swelling, scrotal pain, or both. Wouldn't scrotal swelling without pain be an indication for surgery? It seems to me that there was a problem with the indication for surgery.

Reply 3: Related correction had been made to avoid contradiction (see Page 5, line 77).

Changes in the text: The indications for varicocelelectomy for all patients included testicular pain, testicular hypotrophy, scrotal swelling and scrotal pain.

Comment 4: In the Discussion, the characteristics of subinguinal microsurgical

varicocelelectomy are described, but they are well-known and are not considered in the discussion of varicocele using this device. Since this is a varicocelelectomy using a new device, the characteristics of it should be discussed in this article.

Reply 4: The characteristics and advantages of using VITOM in subinguinal microsurgical varicocelelectomy had been added in the Discussion (see Page 9, line 177-182; Page 11, line 210-213; Page 11, line 220-229).

Changes in the text:

Page 9, line 177-182: The use of $\times 7$ magnification in the VITOM system facilitates the identification and ligation of many small spermatic veins while preserving small arteries and lymphatics. In that way, surgical field magnification and illumination can be enhanced through high-definition 2D or 3D screen imaging. As such, the VITOM system offers high-resolution imaging, a more precise focusing and a more extensive depth of field than conventional operating microscope, which allows for better identification of smaller anatomical structures like veins and arteries.

Page 11, line 210-213: Not just magnification, VITOM provides the surgeons with a broader visual perspective instead of confining to an eyepiece like that in conventional operating microscope. This creates a more ergonomic work environment for surgeons by eliminating the need to confine vision to an eyepiece. This flexibility will help to improve the outcome of microscopic subinguinal varicocelelectomy.

Page 11, line 220-229: Previous studies which evaluated VITOM technology mentioned that VITOM enhanced surgeons' ability to perform their job and improved the surgical process through an improvement in work ergonomic without having to strain their eyes to a single eyepiece. The technology was also easy to use and could improve operation visualization and identification during the surgery, especially for small anatomical structures like testicular arteries and veins, which helped to improve their understanding and enhance the teaching and learning experience. From our experiences in this study, using VITOM during varicocelelectomy procedures provides sufficient magnification ($\times 16$) to identify the testicular artery. VITOM improves the learning curve of microsurgical varicocelelectomy with excellent video image quality, compared to the microscopic view from the microscope.

Reviewer B

Authors present a manuscript about their experience with the VITOM microscope for microsurgical varicocelelectomy. It is a small case series, that is also poorly written. It may be considered for publication after major revision.

My comments:

Comment 1: version of the SPSS software and citation should be included: IBM Corp. Released 2021. IBM SPSS Statistics for Windows, Version 28.0. Armonk, NY: IBM Corp

Reply 1: Version and citation of SPSS software had been added into the manuscript (see Page 6, line 96-98).

Changes in the text: Pearson chi-square analysis was performed using SPSS (version 28.0)

(IBM Corp. Released 2021. IBM SPSS Statistics for Windows, Version 28.0. Armonk, NY: IBM Corp) to identify the association between the variables.

Comment 2: in results session, authors state that patients: "who fulfilled the inclusion and exclusion criteria were recruited". Hence, inclusion and exclusion criteria should be described in methods session

Reply 2: Inclusion and exclusion criteria added according to the reviewer's comment (see Page 4, line 70-72).

Changes in the text: Patients with at least grade two varicocele (clinically palpable varicocele) with scrotal swelling or pain presented to our outpatient clinic and who had given their consent were included in the study. While patients who did not give their consent were excluded.

Comment 3: complications should be reported through Clavien-Dindo complication scale

Reply 3: The post-operative complications had been classified according to Clavien-Dindo complication scale (see Page 7, line 130; Page 16, table 1).

Changes in the text: In terms of clinical observation, all patients showed surgical complication Grade I according to the Clavien-Dindo Complication Scale, whereby all the complications were deviation from normal postoperative course without the need for pharmacological treatment or surgical, endoscopic and radiological interventions

Comment 4: logistic regression is used for dichotomous variables, not continuous variables (age). Moreover, small samples have an immense risk of bias when univariate or multivariate regression is performed. Therefore, authors should remove this analysis.

Reply 4: The analysis, Table 3 and results on the analysis had been removed according to reviewer's recommendation (see Page 6, line 96; page 7, line 127; page 15, line 263).

Changes in the text: Pearson chi-square analysis was performed using SPSS (version 28.0) (IBM Corp. Released 2021. IBM SPSS Statistics for Windows, Version 28.0. Armonk, NY: IBM Corp) to identify the association between the variables.

Comment 5: authors state that: "Recurrence after varicocele repair is the most variable complication, and "Hydrocele formation is the most common reported complication of varicocelectomy". Which is the most common complications?

Reply 5: Both sentences had been edited to avoid confusion (see Page 8, line 151; Page 9, line 175).

Changes in the text: Recurrence after varicocele repair is one of the most variable complication, varying from 0 – 35%. Hydrocele formation is another commonly reported complication of varicocelectomy in all methods of approaches and varies between 3% and 33% (average incidence 7%).

Comment 6: authors state that: "Nowadays, microsurgical varicocelectomy is considered the 'gold standard' technique for treating varicocele in both adults and adolescents,". This information is incorrect. Gold-standard is microsurgical subinguinal varicocelectomy

Reply 6: We have modified our text as advised by adding the word 'subinguinal' (see Page 10, line 187).

Changes in the text: Nowadays, microsurgical subinguinal varicocelectomy is considered the 'gold standard' technique for treating varicocele in both adults and adolescents, due to relatively more favorable outcomes and lesser postoperative recurrence and complication rates.

Reviewer C

The authors presented patients after microscopic varicocelectomy at their own center. The data presented in the study confirm the international literature's findings regarding the low risk of varicocele recurrence following this method compared to laparoscopic or traditional varicocelectomy. The microscopic method notably involves significantly lower postoperative complication risks.

The study presented by the authors is highly intriguing, and the data presented are substantively accurate. Undoubtedly, the article will be of great interest to urologists.

I recommend publishing the article without revisions.

Reply 1: Thank you for your comment.

Changes in the text: Changes have been made according to the comment from Reviewer A & B.

Reviewer D

This is an interesting study and the authors provide innovative insight into the treatment of varicocele. The article is generally well written and structured. The number of subjects included is limited, but represents a good starting point for future studies.

Reply 1: Thank you for your comment.

Changes in the text: Changes have been made according to the comment from Reviewer A & B.