



Name of Journal: *World Journal of Radiology*

ESPS Manuscript NO: 29365

Manuscript Type: Review

Dear Editor,

Thank you for considering our manuscript for publication. We appreciate the reviewers' comments and we have revised our manuscript accordingly. Changes have been highlighted on the annotated manuscript.

Response to comments of Reviewer, Code: 02488710

- **General comments:** This paper suggested that the functional imaging techniques, including US and MRI might provide early indications of testicular dysfunction in testes with varicocele. This paper provides much useful clinical information. Specific comments:
- **Comment 1:** Most urologists will not suggest using MRI for the diagnosis of varicocele. Authors might discuss this issue.

Author response: Page 14, Paragraph 1: Although MRI is not routinely used in the assessment of testes with varicocele, large prospective studies evaluating functional MRI data might validate the possible role of this technique in the investigation of harmful effects on spermatogenesis.

- **Comment 2:** What is the role of nuclear medicine for the evaluation of varicocele?

Author response: Page 9, Paragraph 1: In the past, various diagnostic imaging modalities were used for the evaluation of varicoceles, including venography, scintigraphy, and thermography [33-35]. Labeled blood-pool scintigraphy was reported as an accurate and noninvasive method for the detection and grading of varicocele. The



main contribution of radionuclide blood-pool imaging of the scrotum was in the detection and grading of subclinical varicocele in infertile men with no other cause of infertility. The technique was also accurate in the diagnosis of recurrent varicocele [33-35]. However, the above methods have been replaced by less invasive and more easily performed diagnostic tools, especially ultrasonographic examination of the scrotum.

- **Comment 3:** What is the role of embolization for the treatment of varicocele?

Author response: Page 14, Paragraph 1: Varicocele embolization represents a technically feasible, minimally invasive and outpatient treatment option for men with varicocele, with high success rates. A major advantage of embolization over surgery is the ability to simultaneously perform intra-operative venography [79-83]. Postoperative recurrence of varicocele has been mainly attributed to the persistence of collaterals or anomalous veins missed during surgical ligation [84-86]. Better anatomic delineation on pre-embolization venography enables the identification of these veins, therefore reducing the possibility of future recurrences [79-86]. Embolization may be suggested for patients with recurrence, although no strong evidence to recommend the ideal treatment for recurrent varicocele exists [79-86].

- **Comment 4:** This paper needs English revision.

Author response: Language editing was performed.

Response to comments of Reviewer, Code: 02884690

- **General comments:** The authors present a comprehensive review of imaging for assessment and followup of varicocele and the importance of the detection and treatment in the arena of spermatogenesis. This is a nicely written manuscript with clearly outlined goals, well flowing prose, and comprehensive citations from the body of literature on this subject.
- **Comment 1:** This manuscript is highlighted as an “Editorial” but perhaps should be considered a “Review” as it is a well-bodied review of the primary data from a number of different primary source articles.

Author response: This should be decided by the Editor.

- **Comment 2:** Consider adding the role of diagnosing recurrent or persistent varicoceles following primary treatment. Specifically, address the role of angiography to define the anatomic drainage in cases of recurrent or persistent varicoceles post ligation. This imaging approach is both diagnostic as well as therapeutic as selective angioembolization has been reported in a salvage setting: Rais-Bahrami et al, J Endourol, 2012. Sze et al, J Vasc Interv Radiol, 2008. Nabi et al, Urology, 2004.

Author response: Page 14, Paragraph 1: Varicocele embolization represents a technically feasible, minimally invasive and outpatient treatment option for men with varicocele, with high success rates. A major advantage of embolization over surgery is the ability to simultaneously perform intra-operative venography [79-83]. Postoperative recurrence of varicocele has been mainly attributed to the persistence of collaterals or anomalous veins missed during surgical ligation [84-86]. Better anatomic delineation on pre-embolization venography enables the identification of these veins, therefore reducing the possibility of future recurrences [79-86]. Embolization may be suggested for patients with recurrence, although no strong evidence to recommend the ideal treatment for recurrent varicocele exists [79-86].



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-References: Halpern J, Mittal S, Pereira K, Bhatia S, Ramasamy R. Percutaneous embolization of varicocele: technique, indications, relative contraindications, and complications. *Asian J Androl.* 2016; 18: 234-238 [PMID: 26658060 DOI: 10.4103/1008-682X.169985].

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-Rais-Bahrami S, Montag S, George AK, Rastinehad AR, Palmer LS, Siegel DN. Angiographic findings of primary versus salvage varicoceles treated with selective gonadal vein embolization: an explanation for surgical treatment failure. *J Endourol.* 2012; 26: 556-560 [PMID: 22077657 DOI: 10.1089/end.2011.0387].

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Response to comments of Reviewer, Code: 03271645

- **Comments:** This editorial manuscript is efficacy of diagnostic image study in varicocele patients. Moreover, author mentioned about period of treatment in varicocele patients with impaired spermatogenesis. And, it is very interesting about correlation testicular MRI image results with varicocele. However, I think that conclusion of this manuscript dose not match to title. In title, there is something correlation between spermatogenesis and results of image study. However, there is no mention about this, and no study about correlation of both. The manuscript is too long to read and the general and clinical explanation of varicocele too much.



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Author response: Page 17: Varicocele is a common medical condition entangled with many controversies. Determining which patients are negatively affected by varicocele would help clinicians better select those men who will benefit the most from therapy. Functional imaging techniques, including US and MRI, might provide early indications of testicular dysfunction in testes with varicocele. Large prospective studies are needed to validate the potential role of non-invasive imaging, including US and MRI, in the assessment of the functional status of the testis in men with varicocele, thereby helping to differentiate causal from incidental varicocele.

-The general part of this paper was reduced.



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