

Globozoospermia: Is There a Role for Varicocele Repair?

Androlog Summary

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Note: Postings to *Androlog* have been lightly edited before publication.

Varicocele is one of the most common abnormalities associated with male infertility. Although a great deal has been written regarding the pathophysiology and management of this lesion, the role of varicocele repair in selected clinical situations may be difficult to determine. Dr Eric Seaman poses a question regarding just such a case when he inquires about the potential utility of varicocele repair in a patient presenting with globozoospermia.

I just saw a 20-year-old male with asymptomatic varicocele and testis volumes of 17 and 15 mL for right and left testes, respectively. He is otherwise healthy. Semen analysis performed at the request of the referring physician revealed globozoospermia. No morphologically normal sperm were identified.

Does varicolectomy have any role here?

Eric Seaman, MD

Dr Hector Chemes responds, indicating that the pathophysiology of globozoospermia is such that varicocele repair would not contribute positively in this clinical setting.

Globozoospermia is a primary condition, probably of genetic nature, that results in spermatozoa without acrosomes and with serious problems in the morphogenesis of the head. Besides the obvious consequence of the lack of acrosome in sperm penetration, there are also

abnormalities reported in the perinuclear theca, a structure possibly related to oocyte activation after penetration. Varicocele does not play any role in this pathology, and varicolectomy will not modify this phenotype.

There is ample bibliography; we have published 2 reviews on sperm pathology including globozoospermia (reprints (or pdf files) are available for those interested):

Chemes HE. Phenotypes of sperm pathology: genetic and acquired forms in the infertile male. *J Androl.* 2000;21:799–808.

Chemes HE, Rawe VY. Sperm pathology: a step beyond descriptive morphology. Origin, characterization and fertility potential of abnormal sperm phenotypes in infertile men. *Hum Reprod Update.* 2003;9:405–428.

Dr Douglas Carrell joins the discussion, again suggesting a genetic etiology for globozoospermia and expressing his belief that varicocele repair would not be of any benefit to this patient.

If the globozoospermia is complete (all sperm without acrosomes), my opinion is that there would be a low likelihood of a varicocele being the cause. Several possible globozoospermia genes have been proposed and studied by our lab and others, with varying results, but globozoospermia does appear to have a genetic component. If there is incomplete globozoospermia, the likelihood may be greater.

One additional caveat: in our animal model for induced varicoceles we have not seen any increase of globozoospermia. That may or may not mean something.

Finally, Dr Marc Goldstein, in a comment that is short but to the point, makes it unanimous that this is not a situation that is well suited to varicocele repair.

Varicolectomy is of no value for total globozoospermia with no normal sperm.