Age-related sperm abnormalities due to varicocele: Is there an answer?

To date, the effect of patients’ age on the pathophysiology of varicocele-related sperm abnormalities has not been fully understood. Several mechanisms have been proposed to cause seminal alterations in varicocele: inhibition of the testicular temperature regulating systems, hypoxic damage due to venous stasis, retrograde flux of adrenal steroids or other toxic agents and alterations of the hypothalamus-hypophysis-testis axis are the most studied ones. Affirming the importance of early correction of varicocele, most authors claim that all these components could play a role in impairing sperm quality at times.[1] Nevertheless, insufficient evidence is available to recommend an invasive procedure with the aim of improving fertility.[2]

However, recent reports might prove that patients’ age at diagnosis and correction could have little or no impact on sperm features.[3]

In this interesting case-control study Andrade-Rocha analyses the seminal features of patients with varicocele at different ages, finding no significant differences between patients of different ages. Significant differences have been found comparing the different categories to a control group of fertile patients. A peculiarity of the study results that deserves to be remarked upon is the impact that varicocele seems to have on sperm quality more than quantity. In fact, while the number of spermatozoa were within normal ranges in all groups, vitality, motility, morphology and combined anomalies were significantly worse in patients with varicocele than in the control group. Moreover, the research of the most accurate sperm characteristic able to distinguish fertile and infertile patients succeeded in the identification of the morphological abnormalities and combined anomalies as the most predictive variables of infertility. Moreover, the ROC curve analysis yielded an ideal cutoff of specificity and sensitivity for these two features.[4]

Indeed, the study provides no ultimate answers concerning these issues. In fact, even though patients with varicocele have similar sperm abnormalities regardless of age, the study design is not able to give a prospective longitudinal dimension of the effect of varicocele on sperm features during time. Moreover, as patients younger than 18 years have not completed all the stages of seminal development, their inclusion in the analysis might limit the interpretability of the results.

In conclusion, even though a further step has been made in the long way of understanding the pathophysiology of varicocele, confirmations coming from future studies are still needed.

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References