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INVITED COMMENTARY

Male Fertility

Sperm morphology and reproductive success

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Drs. Sikka and Hellstrom[1] provide an excellent summary focusing on the basics of the endocrine evaluation of male fertility with a detailed look at the specifics of semen analyses. Discussing details such as concentration, motility and morphology, Sikka and Hellstrom[1] expand on how these tests are conducted in a laboratory setting. An understanding of these particulars is valuable to the Andrologist who must subsequently synthesize these reports and relay them to patients in a simplistic manner.

Of all the different laboratory investigations conducted in the male fertility analysis, sperm morphology has traditionally been judged to be the "most complex and difficult component to perform and interpret."[1] Indeed, the authors[1] point out that the multiple steps required in the process can each induce artifacts that could potentially alter the final interpretation.

Dr. Kruger, in the late 1980's,[2] first proposed the idea that sperm morphology contributed to reproductive success. Illustrating an inverse relationship between successful oocyte fertilization and sperm morphology, these results were propagated in the study by Bonde *et al.*[3] In that manuscript, men with abnormal morphologies had a decreased likelihood of achieving pregnancy. Unfortunately, these early works are not conclusive. As noted by Sikka and Hellstrom,[1] sperm morphology remains subject to inter- and intra-laboratory differences making it difficult, if not impossible, to draw an accurate assessments of the predictability of sperm morphology on outcomes.

Andrologists are often referred patients with isolated low sperm morphology. Given that morphology is not representative of fertilization potential, decisions on how to improve sperm morphology remain difficult to address. Smoking, alcohol consumption, caffeine intake and drug use can affect fertility; however, a conclusive connection between these factors and sperm morphology has not been demonstrated. Furthermore, use of dietary supplements and vitamins has not been shown to directly affect sperm morphology. While previous studies have found that varicocele repair improves strict morphology[4,5] with changes observed as early as 3 months following surgery,[6] these results are also still controversial.[7] Large-scale studies are needed focusing on the importance of sperm morphology on both natural and artificial fertilization outcomes to obtain final conclusive proof as to its role in fertility.

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