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INVITED COMMENTARY

Male Fertility

Asymptomatic male currently not desiring fertility with bilateral subclinical varicocele found on ultrasound evaluation and borderline semen analysis results

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Varicoceles are a fountain of inspiration for male health providers since times immemorial, and it has haunted men ever since with so many different and multifaceted aspects that even today, basic scientists and andrologists are finding new and exciting discoveries derived from its pathophysiology, clinical outcomes, and consequences. Varicocele is a perfect model to link basic science with technological innovation in diagnostic testing in semen analysis and surgical techniques improving medical practice and improving male reproductive and general health. The word “varicocele” is derived from a combination of two ancient languages, from Latin: *varix* (tortuous blood flow) and from Greek: *kele* (edema). The current classification system is over 50-year-old and although the definition of varicocele includes the existence of venous reflux, classification only stands for vein dilation of the Pampiniform plexus into three major clinical categories.¹ Maybe, it is time to develop a new classification system that includes both vein dilation and venous reflux.

Subclinical varicoceles are designated those neither palpable nor suspected on physical examination, nevertheless are diagnosed with accessory radiological techniques including, but not limited to radiographic testing and Color Doppler-ultrasound. False positive results may emerge from small dilated veins over diagnosed by a Doppler-ultrasound as they only look for vein diameter as the solely gold standard parameter and might cause clinically challenge situations to the health professional to explain patient's current afflicting problem; moreover, what or what not do to. The question for correcting subclinical varicocele is a matter of debate although the European Association of Urology and American Society of Reproductive Medicine guidelines does not recommend fixing subclinical varicoceles.^{2,3} Others have found no improvement in pregnancy rates after repair of subclinical varicoceles. Some studies demonstrated the benefit of correcting a right subclinical varicocele in the presence of a left clinical varicocele.⁴

The topic of this paper is to discuss the role of subclinical varicoceles in men not wishing to father an offspring at this moment who underwent an andrological evaluation for other reasons, but infertility. The question that emerges is why such a patient would go to the office and why would one look at a varicocele in the first place. To try to explain this question, I have looked at Androscience database from 2001 to 2015 and located 128 men with bilateral unrepaired subclinical varicoceles. Of these, a subset of 46 patients entered the context of men not desiring current fertility, with median age at initial diagnosis of 32.4 years

old (20–47 years old). Of notice, as a standard procedure, all patients were submitted to a careful physical examination including the external genitalia and palpation of the epididymis and testicles. Testicular volume was accessed using a Seager pachymeter and a Prader orchidometer. Any alteration in testis consistency, volume, or irregularity found in the initial examination was followed by a Doppler-stethoscope examination with the patient in the orthostatic position after 5 min standing at room temperature around 22–23°C. A positive reflux was considered using the Valsalva maneuver and continuous reflux auscultation (>2 s). Reasons for an initial appointment were routine andrological evaluation (9 patients), testicular pain (7 patients), varicocele found somewhere else in a check-up testicular color Doppler-ultrasound (6 patients), alleged complains related to hypogonadism (5 patients), after testicular self-examination alterations, investigation of delayed puberty and epididymitis (3 patients each), and premature ejaculation, low ejaculatory volume, evaluation of sexually transmitted diseases, nongonococcal urethritis, potential gonadotoxin exposure (2 patients each). Of notice, the three patients with past medical history of delayed puberty were diagnosed as pure Klinefelter Syndrome (2 patients) and one mosaicism (46, XY/47, XXY). Median right testicular volume was 18.3 ml and left testicle 16.9 ml. Excluding three Klinefelter patients, median sperm concentration was 38.22 million sperm ml⁻¹, total motility 60.2%, progressive motility 37%, and WHO normal morphology 26%. Creatine-kinase activity as an indicator of sperm quality and maturity measurement was 0.107 ± 0.086 IU 10⁻⁸ sperm (normal <0.036 IU 10⁻⁸ sperm).⁵ Relatively small increase in CK activity in this group may be related to some degree of defect in spermiogenesis leading to inhibition of complete sperm maturation.⁶

Of these 46 initial patients, 27 were followed up for over 5 years and although sperm concentration did not fell significantly, total motility showed a decrease of 44% as well as WHO normal morphology 21% and an increase in CK activity to 0.221 ± 0.116 IU 10⁻⁸ sperm.

To some degree, we can conclude that subclinical varicocele with long reflux has some effect on sperm maturation that may not significantly impair spermatogenesis. The routine use of color Doppler-ultrasound may increase the frequency or urological consultation for subclinical varicoceles, and the andrologist must be prepared to evaluate properly and propose a follow-up for these men. These findings, including diagnosis of potential medical conditions, in a routine urological evaluation, may raise the awareness of male reproductive health and improve the care of men in the reproductive age.

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