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INVITED COMMENTARY

Male Fertility

Asymptomatic postpubertal male with equally sized normal testicles with palpable left varicoceleA Scott Polackwich¹, Edmund Sabanegh Jr²*Asian Journal of Andrology* (2016) 18, 310; doi: 10.4103/1008-682X.161601; published online: 28 August 2015

Varicoceles are a common finding in the general public. The incidence appears to increase later in life with a contemporary study finding an increase in incidence of 10% per decade of life.¹ While common in the general population, they are even more common among those presenting for a fertility evaluation, as high as 39% in some series and are often initially diagnosed during such examinations.² Others present without symptoms or fertility issues and are found incidentally on a physical exam by a general practitioner. Care for the asymptomatic varicocele is controversial, especially in those, in which the testicles are equally sized. While there has been a considerable amount of research about the progression of such varicoceles in adolescent boys, there is much less knowledge about asymptomatic varicoceles in the postpubertal male. In patients who are symptomatic with either fertility issues or varicocele related pain, there are clear indications for varicocele repair.³ The question for asymptomatic patients is whether a varicocele causes any problems other than infertility or pain and whether untreated varicoceles will inevitably lead to the development of such issues, especially after puberty.

Currently, it is not recommended to fix varicoceles to improve fertility in those who have a normal semen analyses. However, some studies demonstrate that patients with an incidentally discovered varicocele may be found to have seminal abnormalities such as one that evaluated the seminal characteristics of 143 men aged 14–53 years of age, so further investigation into seminal changes is suggested in those of reproductive age.⁴ For those patients without any demonstrable abnormality, it is unclear whether a varicocele is a progressive lesion, and whether leaving it unrepaired will eventually cause seminal issues. There are several small studies evaluating this that show contradictory results; a study of 13 patients with semen analyses at presentation and 9–96 months later demonstrated progressive worsening of semen parameters.⁵ This is in contrast to a study of 46 men (24 of which had a varicocele, and 22 who were controls) who were followed up for 8 years. Those with a varicocele had no deterioration in seminal parameters while the control group did.⁶

Semen analysis is not a perfect marker of fertility, and repairing varicoceles in patients may improve fertility rates in those with normal semen analyses. A study of 540 men with at least 1-year of attempted pregnancy found that among those whose semen concentration was 20 million ml⁻¹ or greater had a postvaricocelectomy pregnancy rate of 60%.⁷ Typically, one would expect a much lower rate, closer to 20%, for treatment independent pregnancy rate in previously infertile couples, suggesting a possible effect of the varicocele ligation.⁸ While this is interesting and suggests improvement in fertility with ligation in patients with normal semen parameters, the generalizability of this study is more limited, and this is not an accepted indication for treatment so far.

There are some studies showing that varicoceles may cause injury to the testicle outside of the typical symptoms of infertility and pain. In a study of 835 men, 325 of which had a palpable varicocele demonstrated that those with a varicocele had significantly lower testosterone levels than those without, 416 versus 469 ng dl⁻¹.⁹ This effect of testosterone does not seem to be affected by grade as shown in a study of 1111 men.¹⁰ Repair in these individuals did seem to improve testosterone. About 29% of patients had >50% improvement in serum testosterone. Other studies have shown that mean improvements in total serum testosterone ranging from 90 to 178 ng dl⁻¹, which was not related to the grade of the varicocele.^{9,11–13} This has not been replicated by other groups and has not become a standard reason for repair of a varicocele.

Treatment approach to the truly asymptomatic varicoceles in the postpubertal male remains an area of controversy. While there are indications to offer a ligation in patients who have accompanied seminal abnormalities or pain, in those who do not, the current recommendation is to observe them. In those who present with infertility, a normal partner evaluation and normal semen analysis, there is scant data to perform a varicocele ligation. There is emerging data about hypogonadism and varicoceles, but this has not made its way into the current recommendations so far. When confronted with such patients, we explain the controversies and gaps in knowledge while typically recommending against surgical intervention.

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¹Male Infertility and Microsurgery, ²Department of Urology, Glickman Urological and Kidney Institute, Cleveland Clinic Foundation, 9500 Euclid Avenue, Q10, Cleveland, OH 44195, USA

Correspondence: Dr. AS Polackwich (polacka@ccf.org)