



Barriers to use of semen analysis in the adolescent with a varicocele: Survey of patient, parental, and practitioner attitudes

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Summary

Background

The American Society for Reproductive Medicine Practice Committee recommends obtaining a semen analysis (SA) in pediatric patients presenting with a varicocele in the absence of significant testicular atrophy. Among infertile adults with a varicocele, surgery is indicated in the presence of abnormal semen analysis regardless of testicular atrophy. Despite these two statements, semen analysis is not widely utilized by pediatric urologists in the USA managing a patient with a varicocele.

Objective

We explored the attitudes of patients, parents, and practitioners toward SA to identify potential barriers to the use of SA in the evaluation of the adolescent varicocele.

Study design

We conducted a survey of Society for Pediatric Urology members regarding their management of adolescent varicoceles, with focus on the utilization of SA. The survey consisted of 14 multiple choice questions and two open-ended questions regarding use of SA in practice, barriers to its use, indications for varicocelectomy, and demographics. We also surveyed patients presenting for initial evaluation of a varicocele, as well as their parents, regarding their knowledge about SA and their attitude towards obtaining it. Statistical analysis was performed ($p < 0.05$ significant).

Results

The practitioner survey response rate was 53% (168). Only 13.1% routinely incorporated SA in their practice, with 48% of all responders having some degree of discomfort asking for a SA. Of practitioners who cited discomfort, 90% never order a SA for patients with varicoceles. From the 46% of physicians who ordered a SA, we noted significant practice variability (see Figure). The patient/parent survey demonstrated that this population was uncomfortable with the notion of obtaining a SA, with most patients/parents citing lack of knowledge about SA as the main barrier. Patient and parent knowledge was found to correlate.

Discussion

This study uniquely addresses an issue that has not been discussed in the adolescent varicocele literature to date. It can increase awareness of the option of incorporating SA data in management of the adolescent who presents with a varicocele.

Conclusion

Recognizing and then breaking through the barriers to obtaining a SA, would improve patient care, providing a direct assessment of the impact of a varicocele on fertility potential and thus best determining which patients require surveillance versus surgical intervention. This study suggested that the barriers to SA are surmountable.

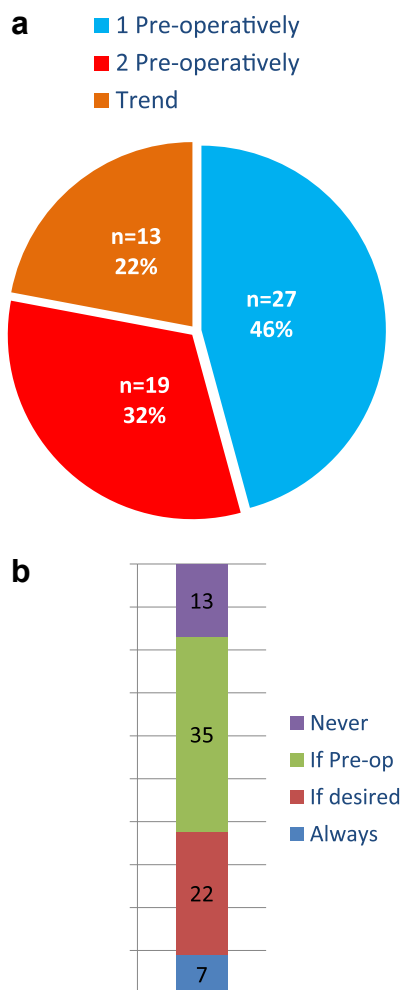


Figure (a) Physicians' practice pattern when ordering a semen analysis: 46% ordered one SA preoperatively; 32% ordered two SA preoperatively; 22% of physicians trended SA over time. (b) Percentage of pediatric urologists who obtain a postoperative semen analysis.

Introduction

The clinical significance of a left-sided varicocele in an adolescent is unclear given that the benefit of surgical correction of a varicocele and testicular size discrepancy has not been clearly correlated with adult fertility potential [1–3]. In the pediatric population, an association between a left-sided varicocele and left testicular growth arrest has been noted [4], although this finding has not been consistent, and there is notable catch-up growth in patients who present with asymmetry but do not undergo intervention [5]. Studies demonstrate that volume differentials of greater than 10% or 20% between normal and affected testes correlate with a significantly decreased sperm concentration and total motile sperm count, implying that future fertility potential may be at risk [6,7], and that surgical intervention is indicated. A study of 360 adolescents found that those who harbored a grade 2–3 varicocele showed sperm progressive motility and

concentration that were lower in the two varicocele groups but were not different according to grade [8].

Among adults, there is an association between diminished fertility with abnormal semen parameters in the presence of a varicocele, although the pathophysiological mechanism of this correlation is controversial and poorly understood [9]. Varicocelectomy has been shown to increase the rate of spontaneous births in patients who present with infertility and were found to have a varicocele and an abnormal semen analysis [10], as well as improve semen parameters [11] and testosterone levels [12].

The current indications for surgical correction of the varicocele found in an adolescent are based on findings that may indirectly reflect fertility potential. Yet semen analysis, which offers the most direct indication of fertility potential, is not commonly used in this population. Although the WHO criteria for normal semen parameters are based on adults [13], we may assume that Tanner 5 adolescents have comparable normal parameters. This study aims to assess the utilization of semen analyses in managing adolescents with varicoceles and to identify possible barriers to its use by surveying the practices of pediatric urologists and their attitudes, as well as the attitudes of patients and their parents, towards providing a semen sample.

Materials and methods

After IRB approval, surveys were given to 37 consecutive patients with a chief complaint of a varicocele, aged 14–21 (four patients > 17 years), prior to initial consultation with their pediatric urologists. A survey with a slight variation on the questions (see [Appendices A and B](#)) was also given to the parent accompanying the patient on the initial visit. The surveys asked about attitudes and knowledge regarding semen analysis and were filled out privately and independent of parent to patient influence. An anonymous electronic survey was emailed to the active membership of the Society for Pediatric Urology. This survey consisted of 14 multiple-choice questions and two open-ended questions regarding use of semen analyses in practice, barriers to use of semen analysis in practice, indications for varicocelectomy, practice volume, and demographics (see [Appendix C](#)). Statistical analysis was performed using chi-square and Fisher's Exact tests for categorical data and two-tailed *t* tests for continuous data ($p < 0.05$ significance).

Results

Patient–parent surveys

Thirty-seven consecutive adolescent male patients referred for a varicocele and their parents (27 mothers, 10 fathers) were offered the four-question survey without any declinations. The level of education for 30 of the 37 (81%) parents attending the visit and filling out the survey was higher than a high school degree. Parents reported that no patient had a birth-father with known fertility issues.

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