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Online Survey on Varicocele Clinical Practice

July 21st, 2021

Dear Colleague

Thank you very much for taking the time to answer this online survey on Global Attitudes and Practices relating to Varicocele. Despite thousands of papers, the management of varicocele remains controversial and individualized, and the same patient is likely to receive very different opinions and management from different experts.

This survey is an attempt to understand how the medical experts around the world view and manage varicoceles, and how these practices may differ amongst experts, and from official guidelines or recommendations based on systematic reviews. Identifying areas of divergent opinion would help us identify those areas needing further research to achieve consensus on best management for our patients.

The survey may take between 15 to 20 minutes and is a little long as it seeks to cover all aspects of practice related to varicocele, but the results will help shape the direction of future research for standardizing evaluations and treatments to serve patients best. We hope you will be able to take the time to answer it in depth.

Please contact me (Ashok Agarwal, agarwaa@ccf.org), Dr. Renata Finelli (finellr@ccf.org), or Dr. Shinnosuke Kuroda (kurodas2@ccf.org) in case of any problem in accessing the survey.

Thank you once again for your time and contribution to this major academic activity; we plan to share the results of this survey when completed.

Sincerely,
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Respondent Demographics

1. In which country do you currently practice?*

-- Please Select --

2. I practice as a:*

- ○ Clinical Andrologist (exclusively)
- ○ Urologist with a special interest in male infertility
- ○ General Urologist
- ○ General Surgeon
- ○ Gynecologist
- ○ Other, please specify

3. Have you done a fellowship or had special training in Clinical Andrology / Male Infertility?*

-- Please Select --

4. My primary practice location is:*

- ○ University hospital
- ○ Public hospital
- ○ Private hospital (academic)
- ○ Private hospital (non academic)
- ○ Private clinic
- ○ Other, please specify

5. What is your age (years)?*

- ○ 25-34
- ○ 35-44
- ○ 45-54
- ○ 55-64
- ○ 65+

6. Years of practice after completing training?*

- ○ < 5years
- ○ 5 to 10 years
- ○ 11 to 20 years
- ○ > 20 years

7. How many varicocele operations (embolisation or surgery) do you perform in a year? (pre-COVID)*

- ○ <5 (none/rarely)
- ○ 5-20 (occasionally)
- ○ 20-50 (routinely)
- ○ >50 (high volume)

8. What is your level of agreement with the statement: "The results of varicocele treatment for male infertility are controversial"*

- ○ Totally agree
- ○ Somewhat agree
- ○ Somewhat disagree
- ○ Totally disagree

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Varicocele Demographics

9. In your patients with varicocele what is the estimated proportion of the following conditions? (total % should be 100%; include 0% if you do not see one of these conditions)*

	0%	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%
Unilateral clinical varicocele %	○	○	○	○	○	○	○	○	○	○	○
Bilateral clinical varicocele %	○	○	○	○	○	○	○	○	○	○	○
Bilateral mixed varicocele (clinical + subclinical) %	○	○	○	○	○	○	○	○	○	○	○

10. In your patients with varicocele what is the estimated proportion of different grades of varicocele? (total % should be 100%)*

	0%	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%
Subclinical: %	○	○	○	○	○	○	○	○	○	○	○
Grade 1: %	○	○	○	○	○	○	○	○	○	○	○

Grade 2: %	○	○	○	○	○	○	○	○	○	○	○
Grade 3: %	○	○	○	○	○	○	○	○	○	○	○

11. What is the estimated frequency of these presenting complaints in your patients with varicocele (adult or adolescent)? (total % should be 100%)*

	0%	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%
Primary infertility ____ %	○	○	○	○	○	○	○	○	○	○	○
Secondary infertility ____ %	○	○	○	○	○	○	○	○	○	○	○
Palpable / visible asymptomatic varicocele ____ %	○	○	○	○	○	○	○	○	○	○	○
Pain or discomfort ____%	○	○	○	○	○	○	○	○	○	○	○
Testosterone deficiency ____ %	○	○	○	○	○	○	○	○	○	○	○
Testicular atrophy ____%	○	○	○	○	○	○	○	○	○	○	○

12. In your practice, approximately what percentage of men with primary infertility due to OAT (oligoasthenoteratozoospermia) have a clinical varicocele?*

- ○ < 10%
- ○ 10% - 25%
- ○ 25% - 50%
- ○ > 50%

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Approach to Diagnosis of Varicocele

13. In your practice, how do you establish the diagnosis of varicocele? (you can choose multiple options)*

- ☐ Physical examination alone
- ☐ Diagnostic testing (sonography, venography, etc) alone
- ☐ Clinical findings confirmed by handheld Doppler
- ☐ Clinical findings confirmed by duplex Doppler ultrasound
- ☐ Clinical findings confirmed by venography
- ☐ Clinical findings confirmed by thermography
- ☐ Primarily by physical examination, but also sonography if examination is difficult

14. What is the sonographic venous diameter under Valsalva maneuver that you consider diagnostic of a varicocele?*

- ○ >= 2.0 mm
- ○ >= 2.5 mm
- ○ >= 3.0 mm
- ○ >= 4.0 mm
- ○ I do not perform ultrasound by myself

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Management of Clinical Varicocele for Infertility

15. Which laboratory tests do you usually perform for men with a clinical varicocele and infertility? (you can choose multiple options)*

- ☐ Semen analysis
- ☐ Sperm DNA fragmentation
- ☐ Oxidative stress testing
- ☐ Hormonal assay

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16. When the first semen analysis is abnormal, how many semen analyses do you recommend prior to deciding to proceed with a varicocele repair?*
- ○ No further analysis
- ○ 1 additional test within 4 weeks.
- ○ 1 additional semen analysis, at least 3 months apart
- ○ More than 1 additional semen analyses (multiple reports)

17. What are your indications for varicocelectomy in an infertile couple? (you can choose multiple options)*
- ☐ Infertility with clinical varicocele, abnormal semen analysis, and normal female partner <35 years old
- ☐ Infertility with clinical varicocele, normal semen analysis, normal female partner, but elevated SDF (Sperm DNA Fragmentation)
- ☐ Infertility with clinical varicocele, normal semen analysis, normal female partner, but elevated OS (Oxidative Species)
- ☐ Infertility with clinical varicocele, and abnormal semen analysis or elevated SDF, irrespective of female partner status.
- ☐ Infertility with clinical varicocele, normal semen analysis, normal SDF, normal female partner, but failed IUI / IVF
- ☐ Clinical varicocele with normal semen analysis, normal SDF, but ipsilateral testicular atrophy
- ☐ Large asymptomatic, varicocele with normal semen analysis, and normal testicular size
- ☐ I do not recommend varicocelectomy. I rather prefer to proceed with other treatments (IUI/IVF/ICSI)

18. In a couple with PRIMARY infertility, clinical varicocele, abnormal semen analysis (moderate OAT) and a female partner < 35 years old, with a normal fertility evaluation, what would it be your first choice for treatment?*
- ○ Medical treatment alone (no varicocelectomy) followed by ART if no improvement
- ○ Medical treatment, followed by varicocelectomy if there is no improvement.
- ○ Varicocelectomy, followed by medical treatment if there is no improvement.
- ○ Varicocelectomy followed by ART (IUI, IVF and/or ICSI) if no improvement
- ○ Proceed directly to ART (IUI, IVF and/or ICSI).

19. In a couple with SECONDARY infertility, clinical varicocele, abnormal semen analysis (moderate OAT) and a female partner with a normal fertility evaluation, what would it be your first choice for treatment?*
- ○ Medical treatment alone (no varicocelectomy) followed by ART if no improvement
- ○ Medical treatment, followed by varicocelectomy if there is no improvement.
- ○ Varicocelectomy, followed by medical treatment if there is no improvement.
- ○ Varicocelectomy followed by ART (IUI, IVF and/or ICSI) if no improvement
- ○ Proceed directly to ART (IUI, IVF and/or ICSI).
- ○ Choice of treatment will depend on female partner's age

20. Do you recommend varicocelectomy for isolated teratozoospermia?*
-- Please Select --

21. Do you recommend varicocelectomy for isolated asthenozoospermia?*
-- Please Select --

22. Do you recommend varicocelectomy for severe necrozoospermia?*
-- Please Select --

23. If a man has OAT and clinical varicocele and the couple is willing to undergo IVF what do you recommend? (you can choose multiple options)*
- ☐ Proceed with IVF
- ☐ Recommend varicocele repair before considering IVF
- ☐ Recommend varicocele repair before IVF, only if SDF is high
- ☐ Correct varicocele if IVF fails
- ☐ Depends on the severity of the varicocele
- ☐ Depends on the female age
- ☐ Depends on the male age
- ☐ Depends on the duration of infertility

24. While correcting a left clinical varicocele, when do you offer right side simultaneous varicocelectomy? (you can select multiple options)*
- ☐ Right clinical varicocele
- ☐ Right subclinical varicocele
- ☐ I do not perform bilateral simultaneous varicocele repair

25. In a man with a clinical varicocele, OAT, and infertility when are you likely to NOT advise varicocele repair? (you can select multiple options)*
- ☐ Male age >40 years
- ☐ Female age >35yrs
- ☐ Small testes (<10 ml)
- ☐ FSH above normal
- ☐ Grade of varicocele is mild (grade 1)
- ☐ Severe OAT (< 1 mill/ml)
- ☐ Will usually advise surgery despite any of the above

26. In patients with severe OAT (sperm count < one million) and grade 2 or 3 varicocele with normal female factor:*
- ◯ You usually do not advise varicocelectomy
- ◯ You usually recommend varicocelectomy
- ◯ You consider varicocelectomy only if medical treatment and ICSI fail.

27. For infertile men with moderate OAT but only a grade 1 bilateral varicocele how often do you recommend repair of their varicoceles?*
- ◯ Do not recommend surgery in such cases
- ◯ < 10% (rarely)
- ◯ 10% - 25% (occasionally)
- ◯ 25% - 75% (usually)
- ◯ I recommend surgery to all such men

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Technical Aspects and Additional Steps During Varicocele Repair

28. Which varicocele repair technique do you prefer?*
- ◯ Microsurgical subinguinal varicocele repair
- ◯ Microsurgical inguinal varicocele repair
- ◯ Conventional inguinal varicocele repair
- ◯ Retroperitoneal (Palomo's) varicocele repair
- ◯ Laparoscopic repair
- ◯ Robot assisted varicocele repair
- ◯ Retrograde embolization
- ◯ Antegrade sclerotherapy
- ◯ Retrograde sclerotherapy

29. Do you perform varicocelectomy using an operating microscope? (you can select multiple options)*
- ☐ Yes, I use it routinely
- ☐ I don't have microscope
- ☐ I don't have microsurgical skills
- ☐ I feel that a microscope doesn't make much difference in outcomes
- ☐ I use magnifying loupes
- ☐ I feel comfortable with naked eye

30. During the operation how do you identify the testicular artery? (you can select multiple options)*
- ☐ I do not look for artery, I just avoid area of pulsation
- ☐ I use an intra operative Doppler
- ☐ I use papaverine to enhance pulsations
- ☐ I identify the artery without any magnifying aid
- ☐ I use an operating microscope
- ☐ I use operating loupes

31. During varicocelectomy, how often do you ligate external spermatic veins / cremasteric veins?*
- ◯ Never
- ◯ Often
- ◯ Always

32. During varicocelectomy do you ligate Gubernacular branches?*
- ◯ Always ligate
- ◯ When patient has grade 3 varicocele
- ◯ When operating for recurrence
- ◯ Rarely
- ◯ Never

33. Do you routinely perform testicular biopsy at time of varicocele repair in men with OAT?*
-- Please Select --

34. In which case(s) would you discuss sperm cryopreservation prior to repair of a varicocele?*
- ◯ In all cases
- ◯ Solitary testicle
- ◯ Severe OAT
- ◯ Never
- ◯ Other (please specify)

35. How long does it usually take for a patient to undergo varicocele repair from the time you recommend surgical correction?*
- ○ Immediately agree
- ○ Up to 3 months
- ○ From 3 to 6 months
- ○ 6 months - 1 year
- ○ >1 year
- ○ Very variable

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Follow-up

36. In your experience which of the following pre-surgery parameters predict varicocele repair success in terms of pregnancy? (you can choose multiple options)*
- ☐ Higher grade of varicocele
- ☐ Bilateral varicocele
- ☐ Larger testes volume
- ☐ Lower serum FSH level
- ☐ Higher serum testosterone level
- ☐ Higher total sperm count
- ☐ Higher total motile sperm count
- ☐ Other (please specify)

37. Based on your experience what conventional semen parameters are likely to improve after repair? (you can choose multiple options)*
- ☐ Semen volume
- ☐ Sperm concentration
- ☐ Overall motility
- ☐ Forward progressive motility
- ☐ Morphology
- ☐ All of the above

38. When you counsel patients on the chances of clinically significant improvement in semen parameters following varicocele repair, what percentage do you usually quote?*
- ○ < 30%
- ○ 30% - 50%
- ○ 50% to 70%
- ○ >70%

39. When you counsel patients on the chances of spontaneous pregnancy following varicocele repair, what percentage do you usually quote?*
- ○ <30%
- ○ 30%-50%
- ○ 50%-70%
- ○ >70%

40. When do you order the first post-varicocele repair semen analysis?*
- ○ <3 months
- ○ 3 months
- ○ 6 months
- ○ 9 months
- ○ 12 months

41. How long do you expect it to take for MAXIMUM improvement in semen analysis parameters to occur after surgical intervention for varicocele?*
- ○ <3 months
- ○ 3 to 6 months
- ○ 6 to 9 months
- ○ 9 to 12 months
- ○ >12 months

42. Do you perform Doppler or ultrasound evaluation after varicocele repair? (you can choose multiple options)*

- ☐ In every case
- ☐ If physical examination suggests residual varicocele
- ☐ If semen parameters have not improved
- ☐ If patient is not relieved of pain
- ☐ Never

43. What should be the main parameter of success of varicocele surgery?*
- ○ Significant improvement of semen parameters even if it does not reach normal reference values
- ○ Improvement of semen parameters to normal ranges
- ○ Increase in clinical pregnancy rate
- ○ Increase in live birth rate

44. How often do you encounter the following complications after varicocele repair?*

	0%	1%-2%	3%-5%	6%-10%	>10%
Residual varicosities__%	○	○	○	○	○
Wound infection__%	○	○	○	○	○
Scrotal hematoma__%	○	○	○	○	○
Hydrocele__%	○	○	○	○	○
Testicular atrophy__%	○	○	○	○	○
Absent arterial flow without atrophy__%	○	○	○	○	○
Decrease in semen parameters__%	○	○	○	○	○

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Varicocele Recurrence

45. In your opinion, the most important cause(s) of recurrent varicocele is/are: (you can select multiple options)*
- ☐ Surgical approach
- ☐ Gubernacular veins
- ☐ Cremasteric veins
- ☐ Surgeon experience
- ☐ Other, please specify

46. Based on you experience, when do most varicoceles recur after surgery (if they recur)?*
- ○ < 1 year after surgery
- ○ 1-2 years after surgery
- ○ 2-5 years after surgery
- ○ > 5 years after surgery

47. When do you recommend correcting a recurrent varicocele with OAT?*
- ○ I usually do not suggest treatment for a recurrent varicocele
- ○ Will suggest repeat procedure if there was no improvement after first surgery
- ○ Will not suggest repeat procedure if there was no improvement after first surgery
- ○ Will suggest repeat correction of varicocele only if there had been significant improvement after first surgery followed by gradual decline
- ○ I recommend repair of all recurrent clinical varicoceles

48. What is your preferred method of treating recurrent varicocele with persistent OAT after a previous subinguinal microsurgical varicocelectomy?*
- ○ Usually do not suggest repeat treatment of varicocele
- ○ Repeat subinguinal microsurgical varicocelectomy
- ○ Transinguinal varicocelectomy
- ○ High ligation by Palomo's approach
- ○ Laparoscopic ligation
- ○ Venographic occlusion

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Treatment of Subclinical Varicocele

49. How often do you perform sonography to look for a varicocele in a man with OAT, or elevated SDF, even though there is no evidence of varicocele on clinical examination?*

-- Please Select --

50. When do you repair a bilateral subclinical varicocele? (you can choose multiple options)*

- ☐ Never
- ☐ If OAT has not improved with medical therapy
- ☐ If semen parameters are normal but SDF is elevated
- ☐ Chronic orchalgia
- ☐ In all infertile men with a subclinical varicocele

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Varicocele and Azoospermia

51. What is your approach in patients with clinical varicocele and non-obstructive azoospermia?*

- ○ Varicocelectomy, then wait for 3-6 months with possible medical treatment; if no sperm, then microTESE/ICSI.
- ○ Varicocelectomy, then wait for 6-12 months with possible medical treatment; if no sperm, then microTESE/ICSI
- ○ Varicocelectomy,combined with TESE/microTESE and sperm freezing
- ○ Proceed directly for microTESE/ICSI and, if negative, then may consider varicocelectomy
- ○ I usually do not advise varicocelectomy for an azoospermic man

52. How often do you perform varicocelectomy in a man with a clinical varicocele and non-obstructive azoospermia?*

- ○ Never
- ○ < 10% of cases
- ○ 10% - 25% of cases
- ○ 25% - 50% of cases
- ○ >50% of cases

53. In non-obstructive azoospermia (NOA), do you perform diagnostic testicular biopsy PRIOR to varicocele repair to determine the need for repair?*

-- Please Select --

54. Do you perform testicular biopsy at the time of varicocele repair for a man with non-obstructive azoospermia? (you can select multiple options)*

- ☐ In most cases
- ☐ In select patients
- ☐ Never
- ☐ Rarely
- ☐ For prognosis
- ☐ To rule out ITGCN
- ☐ For cryopreservation if sperm are found

55. In men desiring vasectomy reversal in whom you find a clinical varicocele do you recommend:*

- ○ Repairing varicocele at the time of vasectomy reversal
- ○ Performing only vasectomy reversal and following semen parameters to guide on varicocele repair metachronously
- ○ Repairing the varicocele, waiting 3 months and then performing the vasectomy reversal
- ○ Performing only the vasectomy reversal and ignoring the varicocele
- ○ I do not perform vasectomy reversal

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Indications for Varicocele Repair Other Than Infertility

56. How often, in your clinical practice, is the diagnosis of varicocele associated with bothersome scrotal pain?*

- ◯ <10% of cases (rarely)
- ◯ 10-25% of cases (occasionally)
- ◯ 25-50% of cases (frequently)
- ◯ >50% (very commonly)

57. When you operate a patient for scrotal pain, in what percentage of patients does the pain persist after surgery?*
-- Please Select --

58. Do you think that the presence of a varicocele will, over time, reduce testicular volume?*
- ◯ Always
- ◯ Usually
- ◯ Sometimes
- ◯ Rarely

59. How often do you perform varicocelectomy solely to improve testosterone levels?*
-- Please Select --

60. How often do you recommend repair of a clinically detected varicocele in adolescents (<18 years old)?*
- ◯ Never
- ◯ < 25% of cases
- ◯ 25%-50% of cases
- ◯ > 50% of cases
- ◯ Adolescents not seen in my practice

61. At what age do you suggest sperm analysis in adolescents (< 18 years) with varicocele? (you can choose multiple options)*
- ☐ 15 – 16 years
- ☐ 17 – 18 years
- ☐ Wait until he is >18 years
- ☐ At whatever age he can give a sample
- ☐ No semen analysis if operating for pain or atrophy
- ☐ Shared decision making between clinician and patient/patient family

62. What are your indications for varicocele repair in an adolescent boy with a clinical varicocele? (you can choose multiple options)*
- ☐ An episode of testicular pain
- ☐ Recurring testicular pain on exertion
- ☐ Persistent discrepancy in testicular size
- ☐ Significant reflux on Doppler sonography
- ☐ Abnormal semen parameters (if he can give a sample)
- ☐ Presence of large varicocele, even if asymptomatic

63. Do you think varicocele can be a cause of erectile dysfunction?
- ◯ Yes, definitely
- ◯ Maybe, in some cases
- ◯ Definitely no
- ◯ Only in testosterone deficient men

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The following section is optional

*Results of this survey will be shared after data collection and analysis.
*Please provide your contact details to receive future communication.
*Please contact Dr. Renata Finelli (finellr@ccf.org) or Dr. Shinnosuke Kuroda (kurodas2@ccf.org) for your queries

64. Full Name

65. Contact email

66. WhatsApp contact