<table>
<thead>
<tr>
<th>Recommendation</th>
<th>Quality of Evidence</th>
<th>Strength of recommendation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Diagnosis</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Varicocele is a clinical diagnosis.</td>
<td>very low</td>
<td>moderate</td>
</tr>
<tr>
<td>Clinical examination is performed best with the patient both upright and supine.</td>
<td>very low</td>
<td>strong</td>
</tr>
<tr>
<td>Abdominal ultrasound examination should be performed.</td>
<td>very low</td>
<td>strong</td>
</tr>
<tr>
<td>Ultrasound is superior to Prader's orchidometer to detect testicular volume differences.</td>
<td>moderate</td>
<td>n/a</td>
</tr>
<tr>
<td>Hormonal status should not be performed routinely.</td>
<td>very low</td>
<td>strong</td>
</tr>
<tr>
<td>Varicocele in adolescents may lead to testicular hypotrophy.</td>
<td>high</td>
<td>n/a</td>
</tr>
<tr>
<td>Testicular hypotrophy may have a negative influence on sperm counts.</td>
<td>moderate</td>
<td>n/a</td>
</tr>
<tr>
<td>2. Treatment</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Boys with varicocele should have follow-up throughout puberty.</td>
<td>very low</td>
<td>strong</td>
</tr>
<tr>
<td>Adolescents with Tanner stage 2 and higher presenting with varicocele and testicular growth arrest (6-12 months) should be treated.</td>
<td>high</td>
<td>strong</td>
</tr>
<tr>
<td>Adolescents with Tanner stage 2 and higher presenting with bilateral visible varicoceles should be treated.</td>
<td>moderate</td>
<td>strong</td>
</tr>
<tr>
<td>Symptomatic varicocele should be treated at any age.</td>
<td>very low</td>
<td>strong</td>
</tr>
<tr>
<td>Subclinical varicocele diagnosed with paraclinical examinations only do not require treatment.</td>
<td>moderate</td>
<td>strong</td>
</tr>
<tr>
<td>The treating physician's experience and expertise should determine the best available option for varicocele treatment.</td>
<td>n/a</td>
<td></td>
</tr>
<tr>
<td>Treatment may lead to testicular atrophy.</td>
<td>high</td>
<td>n/a</td>
</tr>
<tr>
<td>Treatment may lead to hydrocele formation.</td>
<td>high</td>
<td>n/a</td>
</tr>
<tr>
<td>After treatment varicocele may relapse.</td>
<td>high</td>
<td>n/a</td>
</tr>
<tr>
<td>In case of previous groin surgery the a. testicularis should be preserved during vena spermatica ligation.</td>
<td>very low</td>
<td>strong</td>
</tr>
<tr>
<td>Sparing of the lymphatic vessels during surgery can prevent hydrocele formation.</td>
<td>high</td>
<td>n/a</td>
</tr>
</tbody>
</table>
### 3. Follow-up

<table>
<thead>
<tr>
<th>Statement</th>
<th>Level of Evidence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Postoperative follow-up should take place 6-12 month after any treatment.</td>
<td>very low</td>
</tr>
<tr>
<td>Adolescents with Tanner stage 2 and higher presenting with varicocele and symmetrical testicular size should be followed-up annually.</td>
<td>moderate</td>
</tr>
<tr>
<td>Observations should be continued into adulthood.</td>
<td>very low</td>
</tr>
<tr>
<td>After treatment a catch-up growth of the involved testis can be observed even when operated at Tanner 5 Stage.</td>
<td>high</td>
</tr>
<tr>
<td>Treatment may improve sperm count.</td>
<td>high</td>
</tr>
<tr>
<td>Treatment might not promote paternity.</td>
<td>high</td>
</tr>
</tbody>
</table>

1) high/moderate/low/very low  
2) strong/weak/uncertain/not applicable (n/a)-for statements

**Methods:**

Research in:
- Ovidmedliner, Cochrane Database of Systematic Reviews, Cochrane Central Register of Controlled Trials, ACP Journal Club between 1966-2017

Articles are graded according level of evidence
- I.RCT or systematic review (Evaluation of the RCT using Jadad-Score\(^40\))
- II.CCT
- III.prospective cohort study
- IV.retropective study
- V.case series or expert’s opinion,
Research-Strategy

1. Varicocele/
2. varicocele.mp
3. varicocele.tw
4. 1 or 2 or 3
5. limit 4 to Child 0-18
6. limit 5 to (english or french or german or spanish or italien)

Guidelines

7. guidelin$.tw
8. guideline.pt
9. exp guideline/
10. practice guidelines$.tw
11. ex practice guideline/
12. position statements$.tw
13. practitice parameter$.tw
14. practice standard$.tw
15. consensus development conference.tw
16. consensus statement.tw
17. state-of-the-art conference.tw
18. recommendations$.tw
19. association$.tw
20. societ$.tw
21. societies/
22. societies medical/
23. 7 or 8 or 9 or 10 or 11 or 12 or 13 or 14 or 15 or 16 or 17 or 18
24. 19 or 20 or 21 or 22

Diagnosis

25. 18 and 24
26. 23 or 25
27. 6 and 26

28. diagnosis.tw
29. imaging.mp
30. sonography.mp
31. ultrasonography.mp
32. scintigraphy.mp
33. dopplersonography.mp
34. thermography.mp
35. tomography.mp
36. 6 and 28
37. 6 and 29
38. 6 and 30
39. 6 and 31
40. 6 and 32
41. 6 and 33
42. 6 and 34
43. 6 and 35
44. 36 or 37 or 38 or 39 or 40 or 41 or 42 or 43
Treatment

45. Varicocele/th
46. Varicocele/su
47. varicocelectomy.mp
48. treatment.mp
49. 6 and 48
50. operation.mp
51. 6 and 50
52. laparoscopy.mp
53. 6 and 52
54. microsurgical.mp
55. 6 and 54
56. spermatic$.tw
57. 6 and 56
58. embolisation.tw
59. 6 and 58
60. sclerotherapy.tw
61. 6 and 60
62. 45 or 46 or 47
63. limit 62 to human
64. limit 64 to (english or french or german or italien or spanish)
65. 49 or 51 or 53 or 55 or 57 or 59 or 61 or 64
66. limit 65 to review articles
67. limit 65 to guideline
68. limit 65 to meta-analysis
69. limit 65 to multi-center study
70. limit 65 to randomized controlled trial
71. limit 65 to evidence based medicine reviews

Prognosis

72. prognosis.mp
73. 6 and 72
74. complication$.mp
75. 6 and 74

Publication Design

76. controlled clinical trial.tw
77. placebo.tw
78. random$.tw
79. meta-analysis.tw
80. double-blind method/
81. double blind.tw
82. 6 and 76
83. 6 and 77
84. 6 and 78
85. 6 and 79
86. 6 and 80
87. 6 and 81


5. Kogan St.J. Campells Urology; Chapter 48 Table 48-1: Frequency of Varicocele in Adolescent Boys


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17.  
- Atassi O, Kass EJ, Steinert BW.: Testicular growth after successful varicocele correction in adolescents: Comparison of artery sparing techniques with the Palomo procedure [see comments]. J Urol; 153 (2): 482, 199

18.  

19.  
- Choi CI, Park KC, Lee TH, Hong YK. Recurrence rates in pediatric patients undergoing microsurgical subinguinal varicocelectomy with and without testicular delivery, J Pediatr Surg. 2017 Sep;52(9):1507-1510  
20.

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- Schwentner C, Oswald J, Lunacek A, Deible M, Bacht G, Radmayr C: Optimizing the outcome of microsurgical subinguinal varicocelectomy using isosulfan blue: a prospective randomized trial:
J Urol; 175 (3 Pt1): 1049--52 (2006),
- Cayan S. Acar D, Ulger S. Akbay E: Adolescent varicocele repair: Long-term results and comparison of surgical techniques according to optical magnification us in 100 cases at a single university hospital:


32.

33.


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