Clinical Outcome of Adolescent Sub-Clinical Varicoceles from a Single-Institution Experience

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Subclinical Varicoceles

• Abnormality of pampiniform plexus detected during scrotal US
• No consensus on precise definition
• Diagnosis often based on:
  – Venous dilation or retrograde venous blood flow on US
  – Absence of clinically palpable ipsilateral varicocele
• Unclear clinical significance
• Variable management
Study Goals and Objectives

- Examine natural history of subclinical varicoceles diagnosed in tertiary care center

- Outcomes
  - Resolution or progression to clinical varicoceles
  - Impact on testicular volume
  - Need for surgery
Methods

• Single institution experience
• Retrospective review
• IRB-approved, outpatient urologic consultation database
• Designated as “subclinical varicocele”
• Initial visit October 1999 through July 2013
• Follow-up through October 2014
• US studies with available images reviewed by single radiologist
Inclusion Criteria

- Available records and US images
- Absence of palpable ipsilateral clinical varicocele
- No prior varicocele or inguinal surgery
- US criteria
  - Dilation of pampiniform venous plexus
  - Involving 2 or more vessels
  - Vessel diameter ≥ 2.5mm (with or without Valsalva maneuver)
Patient Demographics

- 98 patients identified → 36 patients confirmed

- Age at initial visit = 15.5 years (mean)
  - Range: 8.8 – 21.5 years

- Follow-up duration = 26.5 months (mean)
  - Range: 1 – 86 months
Right Side Predominance, Often with Contralateral Clinical Varicocele

- Right: 70%
- Left: 22%
- Bilateral: 8%

24 of 25 with contralateral (left) clinical varicocele
Subclinical Varicoceles Appear Unlikely to Progress

17 patients with follow-up clinical evaluation and US

- Unchanged: 53%
- Resolution: 29%
- Progression: 18%

None underwent surgery
Majority without Impact on Testicular Volume

Hypotrophy on Initial US
>20% difference of affected side using testicular atrophy index formula

Unable to Assess 3%

Hypotrophy 17%

No Hypotrophy 80%

5 of 6 patients with follow-up US
- Persistent = 2
- Improvement/resolution = 3

14 of 29 patients with follow-up US, all without hypotrophy
Majority Do Not Undergo Surgical Correction

6 patients underwent surgery

- Contralateral clinical varicocele only = 4
- Bilateral procedure = 2
  - No evidence of progression to clinical varicocele

No Surgery 83%

Varicocelectomy 17%
Summary and Conclusions

• Most subclinical varicoceles were right sided
• Identified in patients with contralateral clinical varicocele
• Unlikely to progress to clinical varicocele or to require surgery
• Does not appear to impact testicular volume

• May indicate incidental nature
• Information guide future prospective studies to better define clinical management strategies