Varicocele - Management

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How do I know my patient has a varicocele?

▪ The man may present with concern about scrotal swelling or scrotal pain, or a varicocele may be an incidental finding on physical or ultrasonographic examination.

▪ A varicocele is usually asymptomatic, but 2–10% of affected men may have vague dragging or heavy sensations and aching pain in the scrotum or groin.

▪ A varicocele presents characteristically as a 'bag of worms' within the spermatic cord above the testis on the left side of the scrotum:

o The scrotum on the side of the varicocele may be seen to hang lower than on the normal side.

o Dilation and tortuosity of the veins is increased on standing and is usually decreased when the man lies down. The varicocele cannot usually be palpated lying down.

o Performing the Valsalva manoeuvre whilst standing increases dilation.

o There may be a cough impulse.

▪ If there is uncertainty about the diagnosis, see the CKS topic on Scrotal swellings.

Basis for recommendation

▪ The basis for these recommendations is expert opinion in textbooks [Schwartz, 1999; Russell et al, 2004; Sandlow, 2004; Sweetland and Conway, 2004; Browse et al, 2005; Dasgupta and Tiptaft, 2005], review articles [Junnila and Lassen, 1998; Kass, 2001], and guidelines on male infertility from the European Association of Urology [Dohle et al, 2007

Who should I refer?

- Refer urgently to a urologist to exclude a tumour:
  - If a varicocele appears suddenly, especially if the man is older than 40 years of age and the varicocele remains tense when lying down.
  - If there is a solitary right-sided varicocele.
- Refer to a urologist if there is uncertainty about the nature of a scrotal swelling.
- Refer routinely to a urologist for consideration of varicocele ablation:
  - If it is causing distress or embarrassment.
  - If there is pain or discomfort.
- Refer adolescents with a varicocele to a urologist:
  - If there are concerns about reduced ipsilateral testicular volume.
  - If the boy or parents/guardians are concerned by appearance or symptoms and cannot be fully reassured in primary care.
- Do not routinely refer men with a left-sided varicocele for ultrasonography to look for an underlying tumour.
- If a varicocele is found in the male partner of an infertile couple, see the CKS topic on Infertility for more information on assessment and when to refer. The National Institute for Health and Clinical Excellence recommends that men should not be offered surgery for varicoceles as a form of fertility treatment because it does not improve pregnancy rates.

Basis for recommendation

- Most varicoceles are idiopathic without underlying malignancy. Available evidence does not support referral for ultrasonography to exclude a renal tumour in men presenting with a scrotal varicocele.

- Rare serious underlying causes include impairment of venous drainage due to venous thrombosis, tumour invasion, or extrinsic compression by an intra-abdominal tumour. A varicocele (whether acute, symptomatic, or an incidental finding) will rarely be the sole feature of a renal or retroperitoneal tumour:

  - If an older man (> 40 years of age) presents with a newly symptomatic varicocele, especially one that does not empty on lying down, an advanced renal tumour is possible, although other clinical signs and symptoms pointing to the underlying cause are likely to be present [Cuschieri et al, 1996; Junnila and Lassen, 1998; Russell et al, 2004; Dasgupta and Tiptaft, 2005; El-Saeity and Sidhu, 2006].

  - When a varicocele develops only on the right side, vena caval obstruction from a renal carcinoma or other retroperitoneal tumour should be excluded [Junnila and Lassen, 1998; Dasgupta and Tiptaft, 2005].

- Although experts suggest referral for consideration of ablation if the man has pain or discomfort [Junnila and Lassen, 1998], there is no good evidence to guide management. *BMJ Clinical Evidence* found no comparative studies of sufficient quality to guide the choice among expectant management, surgery, embolization, or sclerotherapy to relieve pain and discomfort caused by a varicocele [Shekhar Biyani et al, 2007]. However, for men with bothersome symptoms, discussion of likely benefits and possible risks of alternative management options is warranted. Most urologists accept discomfort as a valid indication for treatment [Dohle et al, 2007].

- It is reasonable to counsel all adolescents with a varicocele, and their families, that the effects on future fertility are impossible to predict with absolute certainty but that the risk of infertility is probably small [Kass, 2002]. Most CKS expert reviewers believe that it is currently appropriate to manage most adolescents with a varicocele by observation and monitoring of testicular size (either by the adolescent or the clinician). Varicocele ablation should be considered for those with abnormal testicular volume [Diamond, 2007], as improvements in sperm parameters and testicular volume have been demonstrated after varicocelectomy [Okuyama et al, 1988; Laven et al, 1992].

- Available evidence in a Cochrane review suggests that men should not be offered surgery for varicocele as a form of fertility treatment because it does not improve pregnancy rates. The National

Institute for Health and Clinical Excellence have based their recommendation on this review, but commented that until a full report of the World Health Organization multicentre trial is published on the effect of varicocele repair on pregnancy rates, the effectiveness of varicocele repair in men with abnormal semen remains uncertain [National Collaborating Centre for Women's and Children's Health, 2004].

What advice should I give to someone who has a varicocele?

- Reassure that, in most men, the varicocele does not require any treatment and is not likely to cause any symptoms or long-term complications.
- Initially, manage associated discomfort by recommending supportive underwear and simple analgesia.
- If relevant, explain that although varicoceles may be associated with fertility problems, nearly two-thirds of men who have a varicocele have no difficulty in fathering children.
- For men with fertility problems, explain that available evidence does not support the use of varicocele ablation to improve pregnancy rates.
- If varicocele ablation is being considered, explain that the urologist will fully discuss the risks and benefits of both surgical and percutaneous embolization procedures and that complications are infrequent and mild. Options for varicocele ablation include:
  - Surgery either by retroperitoneal, inguinal, subinguinal, or laparoscopic approaches.
  - Percutaneous radiographic retrograde embolization via the femoral vein.
  - Percutaneous antegrade embolization via the scrotum.

Basis for recommendation

- No evidence supports the wearing of close-fitting underwear, and the recommendation is based on expert advice in textbooks [Russell et al, 2004; Ellis et al, 2006].
- Although varicoceles are present in many men who father children [Sandlow, 2004], evidence indicates that they are also associated with reduced fertility [Johnson et al, 1970; Evers and Collins,

2003]. However, at present, the available evidence does not support the use of varicocele ablation to improve pregnancy rates.

- A report from the Practice Committee of the American Society for Reproductive Medicine states that only larger varicoceles which are typically easily palpable have been clearly associated with infertility [American Society for Reproductive Medicine, 2006].

- Varicocele surgery carries a small risk of wound infection, hydrocele, persistence or recurrence of the varicocele and, rarely, testicular atrophy. There may be scrotal numbness and persistent pain. Intraperitoneal complications (e.g. injury to the bowel, bladder, or major blood vessels) are uncommon. Surgery successfully eliminates more than 90% of varicoceles [American Society for Reproductive Medicine, 2006].

- Percutaneous embolization may be associated with less pain, but results are variable and the spermatic vein cannot be accessed in some men [American Society for Reproductive Medicine, 2006].