

CASE DISCUSSIONS: CHRONIC SCROTAL PAIN

Last issue we looked at case studies of acute scrotal pain in boys and young men. Here, the authors describe two cases of chronic scrotal pain and discuss the considerations for GPs

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The term “hidden epidemic” has been used when discussing chronic scrotal pain. This condition certainly represents an ill-understood symptom complex with little in the way of evidence to support specific medical and surgical interventions. These patients are challenging to both the urologist and the GP, and managing patient expectations when a cure may not be feasible can be difficult.

CASE 1

A 38-year-old navy engineer visits his GP with chronic testicular pain which he has had intermittently for several years and which has recently returned. The pain has been present for approximately one month and is aching more than usual, without responding to paracetamol and ibuprofen. He has been treated for epididymo-orchitis in the past with antibiotics but denies any urinary symptoms, and he has recently tested negative for *Chlamydia trachomatis* and *Neisseria gonorrhoeae*.

CASE 2

A 45-year-old office worker, married with four children, complains of gradually worsening testicular pain, which he has been experiencing since a vasectomy three years ago. He thinks there is a small lump on one side and wonders if that might be the cause of the pain.

How does chronic scrotal pain present?

Multiple symptoms can include a dull, throbbing pain which can radiate to the inner thigh and perineum and can worsen throughout the day. In severe cases with hypersensitisation/hyperaesthesia, the presence of overlying clothing or even bedclothes can cause pain and exacerbate the problem. In rare cases, the pain becomes all-consuming. Pain with ejaculation can also occur, and the symptoms of scrotal pain may cause reduced libido and decreased sexual activity. Symptoms of depression are also a possibility. Schover¹ reported that a significant number of patients who suffer from orchalgia express signs of major depression, and a number have a chemical dependency.

As with acute scrotal pain (see *BJFM* March/April 2014), careful examination of the groin, scrotum, testes and epididymis is important as it may help identify a modifiable cause. A rectal examination should be performed, but in many cases the examination will be entirely normal.

A mid-stream urine specimen should be sent, and a urethral swab or first void urine should be performed to rule out sexually transmitted infections as a cause.

Scrotal ultrasound has limited value in finding the cause of pain; in >80% of patients this does not show abnormalities that have clinical implications.^{2,3} However, if clinical examination is normal, ultrasound can be performed to reassure the patient that there is no pathology that requires surgery. Ultrasound is useful in aiding diagnosis of hydroceles, spermatoceles, epididymal cysts, varicoceles and testicular tumours.

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What are the causes?

Identifiable causes of chronic scrotal pain include:

Varicocele

Varicoceles are varicosities of the pampiniform plexus, a network of small veins around the spermatic cord. They are most commonly left-sided as a consequence of the anatomy. The left spermatic vein has a longer course to join the left renal vein than the right does to join the inferior vena cava (IVC), and the perpendicular angle at which it joins exposes the left spermatic vein to pressure elevations from the renal vein, which the right avoids due to an oblique insertion

to the IVC. The hydrostatic pressure is therefore higher in the left spermatic vein than the right, and this can result in dilated tortuous veins, especially where there are incompetent or absent venous valves.

Varicoceles may be associated with subfertility, but not in all cases. They have been associated with disordered spermatogenesis, germ cell sloughing within the seminiferous tubules, testicular atrophy, and decreased testosterone secretion.⁴

Symptoms are usually of a dull throbbing ache or a dragging discomfort which worsens on standing or exercise and improves when lying down. The incidence of pain in patients with varicoceles is estimated in the literature to be 2-10%.⁵

The scrotum should be examined in a warm environment, with the patient lying down and standing. The appearance of the dilated tortuous veins has been described as "a bag of worms" and may be reduced or disappear on lying down. If a varicocele is suspected but not clearly palpable at first, it is useful to ask the patient to perform a Valsalva manoeuvre while in a standing position. A varicocele should be treated if symptomatic or associated with infertility or failure of testicular growth. Complete resolution of pain in 69.7%-86% of patients has been reported after varicocelectomy performed for pain.^{5,6,7,8}

Hydrocoele

A hydrocoele is an accumulation of serous fluid between the testis and tunica vaginalis, resulting in a fluctuant, transilluminable swelling. If a normal testis is not palpable within the hydrocoele, it requires investigation with an ultrasound scan to rule out malignancy. Otherwise treat surgically if there is pain, discomfort or functional disability due to size. Aspiration is not recommended, as this will result in rapid reaccumulation and carries a risk of infection.

Testicular mass

Testicular tumours are usually painless but can present with pain from rapid enlargement or a bleed within the tumour. Do not be misled by painful testicular swelling following relatively trivial trauma, as tumours can present this way. Any clinically suspicious mass requires urgent testicular ultrasound and serum tumour markers.

Epididymal cysts

Epididymal cysts may be single or multiple and can usually be palpated and/or visualised on ultrasound. Patients with multiple cysts may have pain caused by compression of the epididymis by the cysts. Excision may be beneficial if large, and where there is suspicion of a tumour, but in some cases pain persists despite excision.

Spermatocele

A spermatocele is a usually painless benign cyst containing spermatozoa. Typically, it arises from

the head of the epididymis and therefore can usually be palpated at the superior pole of the testis. Spermatoceles may become painful as they enlarge and, as with epididymal cysts, excision may be beneficial if the spermatocele is very large.

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Referred pain

Any organ that shares the same nerve pathway with the scrotal contents can present with pain in this region. Typical sources of referred pain include:

- Lumbosacral
- Ureteric
- Hip
- Abdominal aortic or iliac aneurysm
- Entrapment of ilioinguinal or genitofemoral nerve post hernia repair
- Pudendal neuropathy (causing pain in perineum and posterior scrotum)

Post-operative chronic scrotal pain

Data on chronic post-operative scrotal pain are scarce, other than in vasectomy.

A retrospective population study has suggested that chronic scrotal pain occurs in less than 1% of men who undergo hydrocoele surgery or spermatocelectomy. The figures are believed to be the same for epididymal cyst surgery and varicocele surgery but different from situations where the pain is caused by a recurrent varicocele, which can occur in 1-15% of patients with varicocele treated by embolisation or surgery.⁸

RARER CAUSES FOR CHRONIC SCROTAL PAIN

- Polyarteritis nodosa
- Imipramine withdrawal
- Treatment with amiodarone
- Behcet's disease
- Brucellosis
- Schistosomiasis
- Tuberculous epididymitis

BICYCLING-RELATED SCROTAL SYMPTOMS

Cycling is a potential cause of genital symptoms include genital numbness, erectile dysfunction, priapism, perineal soft tissue lesions "perineal nodular induration" and testicular torsion.

Repetitive microtrauma to the scrotum during cycling may also cause structural alterations, e.g. scrotal calculi, epididymal cysts and calcifications, testicular calcifications, hydroceles, varicoceles and testicular microlithiasis, which may in turn cause scrotal pain.⁹

Chronic scrotal pain syndrome (CSPS)

Chronic scrotal pain syndrome can be sub-classified into post vasectomy pain syndrome, epididymal pain syndrome and testicular pain syndrome.

1. Post vasectomy pain syndrome

The aetiology of pain post vasectomy, which can occur in up to 15% of men,^{10, 11, 12, 13, 14, 15} is unclear, but postulated factors include obstruction of the vas, spermatic granuloma formation and chronic idiopathic epididymitis. It may present at any time, from the immediate post-operative period to up to 20 years after vasectomy.^{16, 17}

It is vital that, when obtaining informed consent for a vasectomy, this potential complication should not be underplayed, particularly in the presence of existing scrotal discomfort.

2. Chronic inflammatory epididymitis

The aetiology of this condition is unclear but it may result from previous viral or bacterial infections, such as prostatitis, sexually transmitted infection and infection after surgery, trauma or retrograde urination.

3. Testicular pain syndrome

Idiopathic chronic testicular pain is common but the pathophysiology is poorly understood. The condition has previously been referred to as orchitis, orchialgia and orchidynia, but these terms are no longer recommended.

Idiopathic chronic testicular pain is common but the pathophysiology is poorly understood

Testicular pain syndrome describes intermittent or constant testicular pain for three months or longer that significantly interferes with the daily activities of the patient.¹⁸ It is often associated with negative cognitive,

behavioural, sexual or emotional consequences, as well as with symptoms suggestive of lower urinary tract and sexual dysfunction. It can be considered as part of the spectrum of chronic pelvic pain, may be unilateral or bilateral and can remain localised to the scrotum or radiate to groin, perineum, legs or pelvis. Testicular pain syndrome can be spontaneous or exacerbated by physical activities and pressure.

On examination, the testis may be tender but in the majority of patients findings are entirely unremarkable. The aim of treatment is to return to routine activity without significant use of analgesics.

Management

Clinical evaluation and, if in doubt, an ultrasound, should exclude many easily treatable conditions, leaving the chronic group of patients.

Patient expectations need to be managed.

Reassurance and lifestyle modification advice should be given to avoid trigger factors such as riding a bicycle or horse. The use of scrotal elevation with tighter underwear or a scrotal support may improve symptoms.

There is some evidence to support the use of trigger point massage and pelvic floor physiotherapy. Prospective randomised case controlled and prospective case series suggest an overactive pelvic floor (based on history, examination, urodynamics and measurements of pelvic floor tone via electromyography [EMG]) should be treated by pelvic floor re-education, including electro-magnetic treatment and biofeedback, with responses lasting up to 12 months.^{19, 20, 21} In this case, biofeedback involves the use of real-time feedback from EMG while learning to relax/contract/co-ordinate the pelvic floor muscles under instruction of a specialist physiotherapist. In addition, case studies have suggested that applying pressure to the trigger point and stretching the muscle can improve symptoms in up to 72% of patients, although the median follow-up time was only four months.^{22, 23}

Empirical treatment with antibiotics (usually a quinolone such as ciprofloxacin) is often used for chronic epididymitis and is suggested by guidelines from the European Association of Urology²⁴ (despite the lack of high quality randomised controlled trials to support this). Regular paracetamol in combination with an NSAID can be helpful in the first instance. Both tricyclic antidepressants (TCAs) and gabapentin have demonstrated benefit in the treatment of chronic pelvic and neuropathic pain,^{25, 26} (see p.12) and should be the next step prior to opiates.

Spermatic cord blocks with lidocaine and methylprednisolone have been shown to provide relief for weeks up to several months in case studies and retrospective series,²⁷ and they may be repeated if successful.

In the literature, there is consensus on postponing surgery until there is no other option, and it should be considered only after failure of medical management.

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ADDITIONAL EDUCATIONAL RESOURCES

For health professionals

European Association of Urology Guidelines on Chronic Pelvic Pain http://www.uroweb.org/gls/pdf/25_Chronic_Pelvic_Pain_LR.pdf

Leslie T, Illing R, Cranston D, Guillebaud J. *BJU Int* 2007;100:1330-3. A key reference to use when obtaining consent for vasectomy

For patients

Canadian Urological Association. http://www.uroinfo.ca/brochures_genital/scrotalPain.html

Useful information about scrotal pain with a diagram of scrotal contents

Surgical interventions include vaso-vasostomy (vasectomy reversal) in post-vasectomy pain syndrome, micro-surgical denervation of the spermatic cord, epididymectomy in selected cases and orchidectomy as a last resort. Only retrospective data are available for all these techniques, and invariably small numbers of patients were involved.

Microsurgical denervation of the cord is perhaps the most interesting advance to date, with a few retrospective studies reporting promising success rates^{28, 29} and one prospective European study of 35 patients reporting 96% success rate (completely pain-free) after two and a half years of follow-up.³⁰ Randomised controlled trials are needed to provide higher level evidence before this emerges as a treatment option.

KEY POINTS

- 1** Chronic scrotal pain is an ill understood symptom complex for which evidence based treatments are lacking.
- 2** Many patients have no identifiable cause to explain their discomfort
- 3** Surgery is a last resort in chronic scrotal pain syndrome (CSPS) because its efficacy is uncertain.
- 4** Refer patients who have an obvious hydrocele, varicocele, or palpable testicular or epididymal mass and those with severe pain that greatly affects their quality of life to a specialist.

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