

Histopathological changes in surgical specimens from patients with chronic scrotal pain

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Abstract

Introduction

Chronic scrotal pain (CSP) is a rare condition but for some patients can be severely debilitating. Although first-line treatment usually consists of analgesics, many have persistent pain. Nerve denervation may also be attempted, but often patients eventually proceed to surgery.

The aim of this paper was to analyse the histopathology of epididymectomy and/or orchidectomy specimens from patients who underwent scrotal surgery for chronic scrotal pain.

Methods

The clinical notes of 24 patients presenting to our hospital over a 10 year period from 1996-2005 who underwent scrotal surgery for chronic scrotal pain were retrospectively analysed. The patients' age ranged from 22-78 years, they had symptoms of scrotal pain from a range of 3 months - 6 years, prior to presentation. 22 patients had unilateral pain and 2 bilateral. There was a history of previous surgery (vasectomy, varicocele ligation) or trauma in 12 patients. All patients received analgesics, 4 received antibiotics and 6 underwent nerve denervation but pain persisted in all patients. Eleven patients underwent epididymectomy initially but 8 of these patients proceeded to orchidectomy due to continued pain. The other 13 patients underwent radical inguinal orchidectomy in the first instance.

Results

On histopathological analysis of the initial 11 epididymectomy specimens, a mixture of sperm extravastion, chronic inflammation, epididymal tubule distension and focal fibrosis were seen. The testis specimens revealed various degrees of testicular infarction/focal tubular sclerosis and chronic inflammation. Of the 24 patients, 15 had complete resolution of pain following surgery.

Conclusion

Chronic scrotal pain can be treated with surgery but should only be offered if conservative treatments have failed. Histopathological analysis of the surgical specimens revealed pathological changes in the testis and/or epididymis in all cases. These changes may be a factor to explain the aetiology of the pain in these patients. The finding that 62% of the patients in our study had complete resolution of pain and the remaining 38% had partial response suggests that the pathological changes seen may either be causable or at least contribute to the cause of the pain

Introduction

Chronic scrotal pain (CSP) represents a special challenge for the urologist. It is a difficult condition to treat and may require a multidisciplinary team approach. CSP is defined as “a continuous or intermittent pain that can be unilateral or bilateral and lasts for a minimum three months”. The pain usually affects the daily activities of the patient, causing them to seek medical attention.

There are many causes of chronic scrotal pain. Pains may be caused primarily by pathology in the scrotum or groin, or referred from another area (referred pain). Primary causes of chronic scrotal pain include chronic infection of the testis or epididymis, testicular tumour, indirect inguinal hernia, hydrocoele, spermatocele and a varicocele.

Pain may also be referred to the scrotum from the ureter (ureteric stone), the prostate (chronic prostatitis) or from the lumbar spine (degenerative lesions). Many patients with chronic scrotal pain are post-vasectomy. Ahmed et al (BJU 1997) found that 19% of patients complained of some discomfort in the scrotum post-vasectomy and 5% of patients had genuine chronic scrotal pain, pain lasting longer than 3 months.

25% of men who present with chronic scrotal pain have no cause found for the pain, despite extensive investigations and the condition is considered to be idiopathic.

Patients who present with chronic scrotal pain to the urologist usually undergo investigation. This may be in the form of a scrotal ultrasound scan to exclude any primary causes of pain. Treatment initially is conservative and consists of analgesia and antibiotics if infection is present. If the pain doesn't resolve with these measures, then other forms of management, including referral to the pain team and inguinal nerve denervation may be considered.

If these forms of management are unsuccessful, then surgical management is offered to the patient. Surgical procedures include either an epididymectomy or inguinal (radical) orchiectomy. These operations are only offered as a last resort and patients are usually warned that removing their epididymis or testicle is not necessarily going to resolve their pain.

Once the epididymectomy or orchiectomy has been performed, the specimen is sent to the pathologist for examination. This study analysed the pathology results of all patients who had either an epididymectomy and/or orchiectomy performed for chronic scrotal pain. There are few reports in the literature which have looked at histopathological changes in patients who underwent scrotal surgery for chronic scrotal pain.

Materials and Methods

The notes of 24 patients who underwent scrotal surgery for chronic scrotal pain were retrospectively analysed. The patients were referred primarily to the Department of Andrology at the Institute of Urology, UCLH or were referred by other urologists via the tertiary referral system. The 24 patients underwent epididymectomy and/or orchiectomy over a 10 year period between January 1st 1996 and 31st December 2005.

All patients' notes were reviewed and the following information was gathered: the age at presentation, the duration of pain prior to referral, whether the pain was unilateral or bilateral and also if the patients underwent any radiological investigations prior to treatment. Further information obtained included if patients were prescribed analgesia, whether they were referred to the pain team, had nerve blocks performed or if they had a history of previous scrotal surgery in the form of vasectomy or varicocele repair prior to the onset of scrotal pain.

The patients either underwent a staged procedure in which epididymectomy was initially performed (and proceeded to orchidectomy if pain was unresolved) or a radical inguinal orchidectomy was performed at the first instance.

Radical orchidectomy was performed if the patient requested it, if the epididymis was non tender on clinical examination and also if the patient had a clinically atrophic testis, where there would be an indication to remove the testis initially. Regardless of whether the patient had staged scrotal surgery or not, all orchidectomies were performed through a groin incision.

Following recruitment of patients based on scrotal surgery for chronic scrotal pain, the histopathology reports of the epididymectomy and/or orchidectomy specimens were taken and reviewed. The histopathological changes were recorded. All the clinical and pathological information were collated and retrospectively analysed. Pathological changes seen in the epididymis and testis were grouped separately and analysed.

Results

Results for 24 patients were obtained retrospectively from clinical notes. The age of the patients who underwent scrotal surgery ranged from 22 to 78, with a mean age of 49 years. These patients presented with duration of pain ranging from 3 months to six years (mean 37 months). Post surgery, patients were followed up for at least 6 months, with some patients being followed up for up to 6 years. Two of the patients complained of bilateral scrotal pain.

Of the 24 patients who had surgery for chronic scrotal pain, 12 (50%) had previous surgery performed prior to the onset of pain. Eight of these patients had vasectomy and

the other four patients had a varicocele repair. Of the remaining 12 patients, 4 patients were diagnosed with clinical orchitis and 1 patient had an indirect inguinal hernia present. For the remaining 7 patients, no risk factors for the pain could be found despite extensive investigation.

All patients were prescribed analgesia with some patients claiming mild benefit, but with most patients, the pain persisted. The 4 patients diagnosed with clinical orchitis were prescribed quinolone antibiotics and doxycycline. Six patients were referred to the hospital pain team, where they underwent a spermatic cord block. Prior to scrotal surgery, 4 of the 24 patient underwent inguinal nerve denervation. Despite all of the above conservative managements, pain still persisted for these 24 patients.

Surgery for pain in the 24 patients was performed as follows: 3 patients underwent epididymectomy only. 8 patients underwent epididymectomy and following no relief of pain, they resorted to inguinal orchidectomy. The remaining 13 patients had an inguinal (radical orchidectomy) performed in the first instance.

Of the 24 patients who underwent surgery, 15 (62%) of patients stated that their pain had completely resolved. These patients required no further treatment. However in the remaining 9 patients, though there was some improvement in symptoms, pain still persisted. Of these 9 patients, 6 had previous surgery.

All 3 patients who underwent epididymectomy alone were post vasectomy patients. These 3 patients' pain resolved post epididymectomy and they did not need subsequent orchidectomy. However the other 8 patients, who initially underwent epididymectomy, had no resolution of symptoms and proceeded to orchidectomy. Following orchidectomy, 4 (50%) patients' pain resolved completely. However the other 4 still had some residual scrotal pain.

Thirteen patients underwent an inguinal orchidectomy in the first instance. This procedure resolved the pain in 8 of these patients. 5 patients still complained of having scrotal pain.

Examinations of the histopathology of the scrotal specimens, changes were seen in all cases. Of the 11 initial epididymectomy specimens, 9 showed varying amounts of epididymal tubule distension, sperm extravasation and chronic inflammation. The other 2 epididymal specimens showed evidence of focal fibrosis.

Examination of the 21 testis specimens, focal tubular sclerosis and mild chronic inflammation were found in 12 of the patients, with extensive infarction found in the remaining 9 specimens.

Histopathology

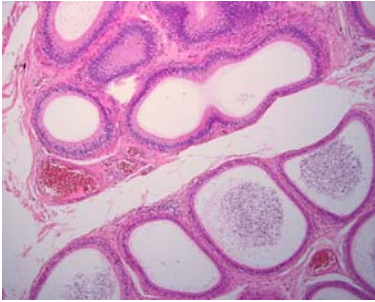


Fig 1: epididymal distension

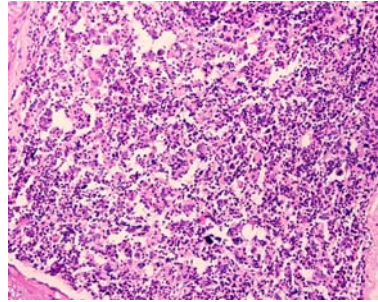


Fig 2: sperm extravasation

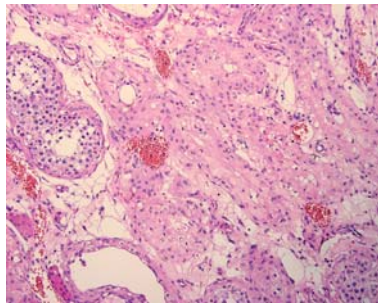


Fig 3: focal tubular sclerosis

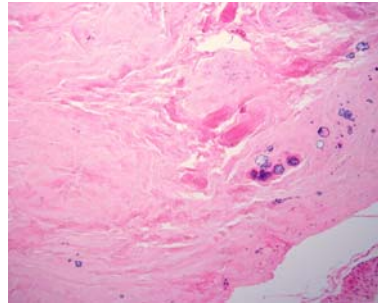


Fig 4: infarcted testis

Discussion

Chronic scrotal pain is a difficult condition to treat and poses many problems for the urologist in terms of what treatment regime to use and when surgery, if ever, should be performed. In the literature there are several papers, stating that surgery for chronic scrotal pain doesn't always resolve the situation. Possible reasons include that the pain experienced by men in the scrotum may in fact not be scrotal in origin in the first place and maybe referred from other organs such as the prostate, ureter or more frequently the lumbar spine. Despite extensive investigations and conservative management, the pain persists.

Of our 24 patients, 15 (62%) had a complete resolution of pain following scrotal surgery. The remaining 9 patients despite a slight improvement still complained of scrotal pain.

On closer questioning, it became apparent that in many of these patients, the pain they initially presented with, had resolved following surgery, but they were left with some pain either at the site of surgery or due to scar formation. To our knowledge, there are few articles published with regard to pathological changes seen in patients with chronic scrotal pain. In our study, 12 of our 24 patients had previous surgery (vasectomy, varicocele) and this maybe a significant association with subsequent development of

CSP. The aim of this paper was to see whether chronic scrotal pain was associated with the pathological changes seen in the removed scrotal specimens.

All patients had pathology in either their testis or epididymis and all patients showed some form of improvement following surgery. This shows that the pathology seen could be a contributing factor in the aetiology of CSP. Twelve of the 24 patients who presented with CSP had previous scrotal surgery (vasectomy, varicocele repair). This may lead to the theory that scrotal surgery may be a factor impacting on subsequent CSP. Given this, it may be advisable to include CSP in the information given to patients on the consent form for procedures such as vasectomy or varicocele repair as a possible late complication.

Surgery is a valid option for CSP in cases where more conservative measures fail to control the pain. Patients may be told that their CSP may either completely resolve (62%) or improve (38%) with the procedure. The improvements in symptoms appears to be attributable in part to the pathological changes seen in the resected specimens

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