The incidence of post-vasectomy chronic testicular pain and the role of nerve stripping (denervation) of the spermatic cord in its management

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Objective To assess the incidence of chronic post-vasectomy testicular pain (CPTP) and evaluate the use of denervation of the spermatic cord in its management.

Patients and methods A retrospective postal survey of 560 patients (mean age 36 years, range 25–55; mean time since vasectomy 19 months, range 8–39) who underwent vasectomy between July 1992 and December 1994 was carried out to determine the incidence of CPTP. A prospective study was conducted in a further group of 17 patients (mean age 43 years, range 34–60), who had had CPTP for at least one year, to evaluate the effectiveness of nerve stripping of the spermatic cord in relieving pain.

Results Of 396 replies, 108 (27.2%) patients complained of some testicular pain following their vasectomy operation. In 88 (82%) of these 108 patients the pain was brief and was not defined as CPTP, while 20 (19%) patients had pain for >3 months; 33 (31%) patients required analgesics to control the pain. Of the 17 patients who underwent spermatic cord denervation, 13 reported complete relief of pain at their first follow-up visit and were discharged. Four patients had a significant improvement in the symptom score and were satisfied with the results.

Conclusions There is a small but significant incidence of CPTP and patients should be warned of this possibility when counselled before operation. Denervation of the spermatic cord seems to be a viable surgical option for patients with CPTP who fail to respond to conservative measures.

Keywords Vasectomy, complications, chronic pain, denervation

Introduction

Vasectomy is the most reliable method of male contraception, being effective in 99.5% of cases, but carries a risk of significant morbidity in about 1% [1]. One common problem after vasectomy is chronic testicular pain, which has been defined as intermittent or constant, unilateral or bilateral testicular pain for a period of ≥3 months and which interferes with the patient’s daily activities and prompts him to seek medical advice [2].

Most patients suffering from chronic post-vasectomy testicular pain (CPTP) can be managed conservatively. Non-surgical measures include reassurance, NSAIDs, scrotal support and nerve blocks. Patients who fail to respond to these treatments may benefit from surgical intervention, which includes excision of sperm granuloma, epididymectomy, vasovasostomy and even orchidectomy. The use of a new surgical procedure, nerve-stripping of the spermatic cord (denervation), was described in four patients [3].

We report the results of a postal survey undertaken to assess the incidence of CPTP and our experience with denervation of the spermatic cord in the management of patients unresponsive to conservative measures.

Patients and methods

A retrospective postal survey about post-vasectomy testicular pain was carried out in August 1995 on 560 patients who underwent vasectomy between July 1992 and December 1994 at Dewsbury General Hospital; 396 (70.7%) replies were received. The mean age of the patients was 36 years (range 25–55) and mean time since the vasectomy was 19 months (range 8–39).

In a prospective study in a further group of 17 patients (mean age 43 years, range 34–60) at the Airedale General Hospital, the effectiveness of nerve-stripping of the spermatic cord for CPTP was evaluated. All the patients who were offered nerve-stripping of the spermatic cord had had CPTP for at least one year and presented at a mean of 6 years (range 1–26) after their vasectomy. The pain was described as unilateral in eight patients and bilateral, with one side being affected more than the other, in nine. A clinical examination of the genitalia was unremarkable in all the cases, apart from some epididymal tenderness. All patients underwent scrotal ultrasonography pre-
Table 1 The development of pain in 108 patients after vasectomy

<table>
<thead>
<tr>
<th>Development (months from vasectomy)</th>
<th>Number (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;1</td>
<td>17 (15.7)</td>
</tr>
<tr>
<td>1–3</td>
<td>49 (45.4)</td>
</tr>
<tr>
<td>3–6</td>
<td>35 (32.4)</td>
</tr>
<tr>
<td>6–12</td>
<td>5 (4.6)</td>
</tr>
<tr>
<td>&gt;12</td>
<td>2 (1.9)</td>
</tr>
</tbody>
</table>

operatively and no gross abnormalities were detected. In patients with bilateral pain, the side with the worst symptoms was operated first.

The operation was performed through an inguinal incision under general anaesthesia as a day-case. The spermatic cord was skeletonized, leaving only the vasa and the vessels; the ilio-inguinal nerve was left intact. Patients were followed at 3-monthly intervals after surgery and completed a questionnaire in which they were asked to grade the pain from 'none' to 'mild', 'moderate' or 'severe', to assess the level of pain relief.

Results

From the postal survey, 108 (27%) of the 396 patients who replied complained of some testicular pain after their vasectomy; in 88 (82%) of these 108 patients, the pain was brief and thus did not comply with the definition of CPTP, while in 20 patients (19%) the pain lasted for >3 months. Table 1 shows the time to development of the pain. Among the 108 patients who reported pain, 21 (19%) had mild pain which did not interfere with their daily activities but 33 patients (30%) required analgesics to control the pain; 14 (13%) had to take time off work because of the pain and 40 (37%) complained of discomfort during sexual intercourse.

The patients who underwent spermatic cord denervation had no complications post-operatively. Thirteen patients reported complete relief of pain at their first 3-monthly visit and were discharged. Four patients showed a significant improvement in the symptom score (80% relief) and were very satisfied with the results.

Discussion

This is the largest reported series of patients surveyed about testicular pain after vasectomy. Similar results from a smaller group were reported by McMahon et al. [4], who reported a postal survey and telephone interview of 172 patients and found that CPTP occurred in 56 patients (33%), considered by 26 (15%) to be troublesome, but not by the other 30 (17%) [4]. The aetiology of CPTP is poorly understood, but two popular theories propose (i) the obstruction and dilatation of epididymal ducts with interstitial fibrosis, or (ii) perineural fibrosis and inflammation following the rupture of the epididymal ducts, caused by extravasation of spermatozoa around the epididymal tail and at the site of vasal transection. The nerves in these areas become densely encased in fibrous tissue, with distortion, angulation and lymphocytic infiltration [5].

Those patients with CPTP who do not respond to conservative measures may benefit from surgical intervention, the most common being epididymectomy which gives complete pain relief in only half the patients [5]. These results may be improved by excising as far as the cut end of previous vasectomy. Some patients with persistent pain have undergone orchidectomy, which may or may not solve the problem. No studies have been carried out to determine the success rate of vasovasostomy, but this has been performed to relieve the pain. However, this method defeats the object of the original vasectomy.

Denervation of the spermatic cord is a new approach to the problem of CPTP after vasectomy and of the 17 patients treated in the present study, 13 had complete and four partial pain relief. One patient has since developed worse pain on the contralateral side and has requested nerve stripping on that side.

In conclusion, there is a small but significant incidence of CPTP and patients should be warned about this possibility when counselled. Denervation of the spermatic cord seems to be a viable surgical option for patients with CPTP who fail to respond to conservative measures.

References


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