

VASECTOMY REVERSAL FOR TREATMENT OF THE POST-VASECTOMY PAIN SYNDROME

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ABSTRACT

Purpose: The post-vasectomy pain syndrome is a rare but troublesome complication of vasectomy. We report our experience with 32 patients who underwent vasectomy reversal for relief of the post-vasectomy pain syndrome.

Materials and Methods: The records of 32 patients undergoing vasovasostomy or epididymovasostomy for the post-vasectomy pain syndrome were evaluated for characteristics of symptoms, previous therapy, interval from vasectomy, success of surgery and duration of relief.

Results: Of 32 men who underwent vasectomy reversal for the post-vasectomy pain syndrome between 1980 and 1994, 24 had relief of symptoms after the initial procedure. Of 8 men with recurrent pain 6 underwent a second reversal procedure, and 3 of them subsequently had relief of symptoms. Overall, 27 of 32 men had resolution of pain.

Conclusions: In our experience vasectomy reversal has a high rate of success for relief of the post-vasectomy pain syndrome. It does not preclude other forms of surgical therapy and it should be considered in the treatment of the post-vasectomy pain syndrome.

KEY WORDS: vas deferens, vasectomy, pain

More than 500,000 vasectomies are performed annually in the United States.¹ This is generally considered to be a simple, safe and effective form of contraception, with few complications or failures. Early complications, such as bleeding, scrotal hematoma, wound infection and postoperative pain, are well documented and the rate is acceptably low.¹⁻⁴ The long-term sequelae are less well documented. The proposed risks of atherosclerosis, antisperm antibodies, prostate cancer and testicular cancer have been and continue to be examined. Chronic epididymal pain following vasectomy is a well recognized clinical entity.^{5,6} Although rare, the symptoms are often severe enough to prompt patients to seek surgical therapy. For the last 15 years the treatment of choice at our institution has been vasectomy reversal.

MATERIALS AND METHODS

Records of men who underwent vasovasostomy or epididymovasostomy for the post-vasectomy pain syndrome at our hospital were reviewed. All patients complained of unilateral or bilateral testicular pain, characterized as a constant dull ache that increased with sexual arousal, intercourse or ejaculation. Repeated treatment with antibiotics and nonsteroidal anti-inflammatory drugs failed in all men. A few patients also had a single or serial spermatic cord block without permanent pain relief. All procedures were performed on an outpatient basis with spermatic cord block anesthesia supplemented by wound infiltration with local anesthetic agents as described previously.^{7,8} Except in men with solitary testicles, all patients underwent bilateral exploration and reanastomosis. Microscopic double layer vasovasostomies⁹ were made if sperm were found in the effluent of the proximal vas. If no sperm were found in the vas the epididymis was explored, and a double layer end-to-side epididymovasostomy was made at the distal most point where sperm were found.¹⁰ All procedures were performed by 1 urologist (E. F. F.) and a resident assistant. Followup consisted of office evaluations at 1 to 2 weeks and 3 months. Telephone interviews were conducted at the time of this review and patients were asked

whether the pain was relieved, improved, the same or worse compared to the preoperative status.

RESULTS

Between 1980 and 1994, 32 men underwent microsurgical vasovasostomy or epididymovasostomy at our institution. Followup ranged from 3 to 102 months (mean 29). Patient age ranged from 23.2 to 42.9 years (mean age 31.2) at vasectomy and from 28.4 to 52.6 years (mean age 37.9) at vasovasostomy. The interval between vasectomy and vasovasostomy ranged from 15 to 244 months (mean 59). All men with 2 testicles had pain on both sides, although 1 side was generally more symptomatic. The types of procedures included bilateral vasovasostomy in 23 patients, unilateral vasovasostomy in 3, unilateral vasovasostomy with contralateral epididymovasostomy in 2, bilateral epididymovasostomy in 2 and unilateral epididymovasostomy in 2. All patients underwent bilateral reversal, except in cases of prior orchiectomy or in those undergoing a second procedure after symptoms recurred or persisted on 1 side. Four patients had undergone previous unilateral epididymectomy followed by orchiectomy elsewhere. One patient had undergone previous bilateral vasovasostomy.

The pain was completely relieved or greatly decreased in 24 men and no further treatment was needed. Eight patients had persistent or recurrent pain: 5 unilaterally (contralateral testicle was pain-free), 1 in a solitary testicle (previous contralateral orchiectomy due to pain) and 2 bilaterally. Six of 8 men with persistent pain underwent a second procedure: 3 had complete relief and 3 had persistent pain after the second procedure (2 underwent orchiectomy, and 1 underwent a third procedure and currently has pain). The overall success rate was 84% (27 of 32 patients).

DISCUSSION

The post-vasectomy pain syndrome is a well recognized complication of vasectomy. Various terms have been used to describe this syndrome, including post-vasectomy orchalgia, congestive epididymitis, the late post-vasectomy syndrome

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and the post-vasectomy pain syndrome.^{5, 11-13} The true incidence has not been clearly documented in the literature. Reports of pain involving the testis and epididymis after vasectomy range from 3 to 8%.¹⁻⁴ The pain is usually self-limited, and resolves with supportive measures and nonsteroidal anti-inflammatory drugs. Rarely, conservative measures fail and chronic testicular or epididymal pain develops. In a postal survey of 172 patients 4 years after vasectomy McMahon et al found that 33% reported chronic testicular discomfort.⁶ Of the respondents 5% had sought medical therapy and 2 of 172 had undergone further surgery (1 epididymectomy and 1 hydrocele repair, neither of which was effective in relieving the pain). While the post-vasectomy pain syndrome is uncommon, and failure of conservative treatment is rare, vasectomy is a commonly performed procedure (in men it is second only to circumcision).⁶ Most urologists will encounter a significant number of patients with the post-vasectomy pain syndrome during their career.

The pathogenesis of pain in these patients remains poorly understood. It has been attributed to infection, testicular engorgement with sperm, extravasation of sperm and granuloma formation. Histological examination of epididymectomy specimens from patients with the post-vasectomy pain syndrome reveals several significant changes including dilation of the tubules of the epididymis, which are packed with spermatozoa, histiocytes and debris; interstitial fibrosis, often with entrapment of nerves; thickening of the smooth muscle layer of the epididymal ducts, and occasional extravasation of spermatozoa into the interstitium, with or without chronic inflammatory cells and histiocytes. In contrast to suppurative epididymitis, inflammatory cells are not a prominent feature.^{5, 14} Culture results from the epididymectomy series of Selikowitz and Schned support the argument that the etiology of this syndrome is not due to infection.⁵ All 18 cultured epididymectomy specimens in their series were negative for fungal and bacterial growth. Changes in the testis also occur after vasectomy, including increased thickness of the seminiferous tubule walls, decreased number of spermatids and Sertoli's cells, and focal interstitial fibrosis.¹⁵ It is not known whether the dilation of the tubules, inflammation, perineural fibrosis, sperm extravasation or another as yet undefined process produces the pain.

The role of sperm granuloma is controversial. The incidence of sperm granuloma after vasectomy is 20 to 60%,^{11, 12} which is much greater than that of the post-vasectomy pain syndrome. While the granuloma itself may or may not be painful, epididymal engorgement and pain are more common in its absence. Shapiro and Silber hypothesized that increased hydrostatic pressure leads to blowouts at the vasectomy site and/or epididymis, with subsequent granuloma formation.¹¹ Furthermore, the blowout relieves congestion and, thus, lessens the likelihood of chronic epididymal discomfort. They performed open-ended vasectomies on 410 patients. Sperm granulomas eventually developed in 97% of these patients, all of whom were pain-free. Only 3% of the patients did not have granulomas, and they complained of epididymal tenderness worsened by ejaculation. These investigators and others¹⁶⁻¹⁸ advocated open-ended vasectomies as a means to decrease the risk of congestive epididymitis and post-vasectomy orchalgia. In contrast, Schmidt reported a greater than 50% incidence of pain in men who have granuloma.¹² While these lesions may be painful, sperm granuloma at the vasectomy site should not be considered a component of the post-vasectomy pain syndrome.

Many methods have been used to treat the post-vasectomy pain syndrome. Most patients respond to conservative measures, including sitz baths, scrotal support, antibiotics, nonsteroidal anti-inflammatory drugs and spermatic cord blocks. Reported surgical treatments include spermatic granuloma excision, open-ended vasectomy (leaving the testicular end of the vas open), epididymectomy, vasovasostomy and, as a last

resort, orchiectomy. While open-ended vasectomy may decrease the incidence of the post-vasectomy pain syndrome, there is still the potential of painful spermatic granuloma developing and also an increased risk of spontaneous recanalization. Selikowitz and Schned reported good results with epididymectomy⁵ but our experience with this procedure resembles that of Chen and Ball, who reported only a 50% cure rate with this form of therapy.¹⁴ We have also seen sperm granulomas at the upper pole of the testis after epididymectomy, presumably the result of sperm leakage from the testis. Some of our patients treated with epididymectomy eventually required orchiectomy for pain relief.

Vasectomy reversal has also been reported in treatment of the post-vasectomy pain syndrome. It is an attractive option because it approximates the original state of the reproductive tract, that is the unobstructed flow of sperm from the testis and epididymis. The primary disadvantage is the potential for undesired restoration of fertility. Selikowitz and Schned treated 1 of the 20 patients with the post-vasectomy pain syndrome with vasovasostomy at patient request.⁵ An epididymal biopsy was also done during this procedure. This patient did not have relief of symptoms. Because they make no comment on whether sperm were identified at the testicular end of the vas, one cannot exclude the possibility that failure was due to a more proximal obstruction. Shapiro and Silber reported on 7 patients with the post-vasectomy pain syndrome, 6 of whom had complete relief of pain after vasovasostomy (1 chose not to undergo surgery).¹¹

CONCLUSIONS

The post-vasectomy pain syndrome is a rare but serious complication of vasectomy. A variety of operations have been used to treat patients in whom conservative therapy fails. Our results support the argument for restoring the unimpeded flow of sperm from the testicle and epididymis by vasovasostomy or epididymovasostomy. These procedures do not preclude other forms of surgical therapy. Vasectomy reversal should be considered in surgical treatment of the post-vasectomy pain syndrome.

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