

SPERMATIC GRANULOMA: AN OFTEN PAINFUL LESION*

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Spermatic granulomas are specialized abscesses which frequently occur at the site of vasectomy. Although some are often silent, others can be agonizingly painful. A series of 154 granulomas is presented. Of these, 83 were symptomatic and 63 required surgery for relief of pain. Fertil Steril 31:178, 1979

A well-known fable from India tells of four blind men who examined an elephant. Each, feeling a different part of the animal, acquired a different opinion as to what it was like. The recent medical literature, if it were left unchallenged, would give us a one-sided view of spermatic granulomas of the vas.

Silber¹ found that 32% of the patients on whom he performed vasovasostomies had spermatic granulomas of the vas. He has made the astute observation that these granulomas, by absorbing spermatozoa, lessen the dilatation of the testicular side of the vas, keep production of sperm active, and allow continued active transport of these sperm from the testis. In consequence, successful vasovasostomy is more likely. I can confirm how frequently granulomas are seen at vasovasostomy in patients who have had ligature vasectomies, and I agree that many of these granulomas are unsuspected—because they are asymptomatic.

Silber¹ goes further, however, and suggests that “the formation of a sperm granuloma should perhaps be encouraged” and that “this is not really a serious complication of vasectomy.” His conclusions come from his having examined only one part of the elephant. Spermatic granulomas are often

symptomatic and may cause agonizing pain.² They have a “life cycle,”³ thus vary according to the age of the lesion, its location, and the degree of extravasation of the sperm that initiate them. In most granulomas sperm enter the lesion, where they are digested and eliminated. In others, sperm drain either to the other end of the vas or to the skin. Sperm-immobilizing antibodies are more common in the presence of granulomas than they are when the vasectomy has not produced them,⁴ a fact that may adversely affect the success of a vasovasostomy. Thus, granulomas of the vas have to be considered according to types, or even as particular cases, not as uniform lesions—and certainly not as innocuous ones. An analysis of a series of granulomas is presented to corroborate this statement.

PATIENTS

During the past 22 years I have diagnosed spermatic granuloma of the vas, occurring after vasectomy, in 154 patients. Of these 154 patients, 83 sought care because of symptoms caused by the granulomas. In 20 of the latter the symptoms abated spontaneously and surgery was therefore unnecessary; the other 63 did require surgical intervention for the relief of symptoms (in these cases the diagnosis was confirmed histologically). For the remaining 71 patients of the series spermatic granulomas (bilateral in 12) were encountered at vasovasostomy as asymptomatic, incidental findings. Inasmuch as the asymptomatic granuloma is discovered only at the time of vas

Received June 27, 1978; accepted July 11, 1978.

*Presented at the Thirty-Fifth Annual Meeting of The American Fertility Society, February 3 to 7, 1979, San Francisco, Calif.

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TABLE 1. *Symptoms of Spermatic Granulomas of the Vas*

Symptom	No. of cases		
	Proven at operation	Symptoms only	Total
Tender, occasionally with swelling	39	10	49
Pain with sexual activity, often at ejaculation	10	6	16
Pain radiating to the flank	7	1	8
Spontaneous vas anastomosis	4	0	4
Vasocutaneous fistula	3	0	3
Mass only	0	3	3
Total	63	20	83
Patients with recurrent episodes (one granuloma recurred after previous excision)	9	1	10

anastomosis, attention is directed to the symptomatic one.

An analysis of symptoms is given in Table 1. The most common complaint was that of a tender nodule at the cut end of the vas. Although usually small, this mass was at times quite large, even to the point of simulating a tumor. Localized pain

during sexual excitement was common, often severe at ejaculation, so that the patient would avoid sexual intercourse because of fear of pain. The pain could also be experienced with a steady, severe onset during sexual excitement, or as a testicular ache after ejaculation. It could radiate to the flank—in which form it could be most severe: in three such cases the patients required hospitalization; in two, excretory urograms were obtained because the pain was diagnosed as renal colic. Indeed, the differential diagnosis of renal colic includes acute lesions of the scrotal contents.

Evidence of granuloma was found in the four cases of spontaneous vas anastomosis—evidence that the vas had been divided and that one or more channels had reached the urethral end to re-establish continuity of the lumen. Vasocutaneous fistulas appeared as either recurrent, painful "pimples" that would spontaneously break and drain, closing and appearing later in an adjacent area of skin, or as a constantly moist spot in the scrotal scar.

COMMENTS

Spermatic granulomas of the vas are specific

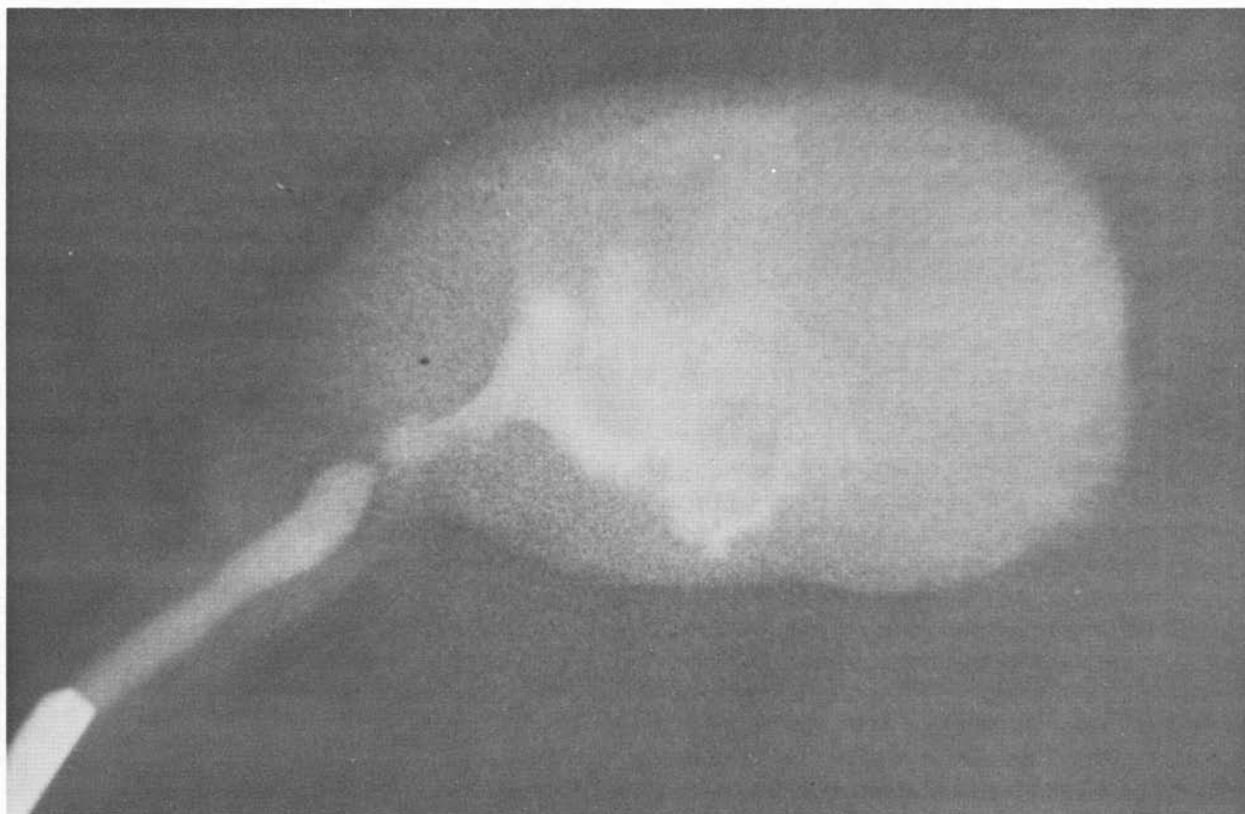


FIG. 1. Injection x-ray of a cystic spermatic granuloma. The vas is on the left.

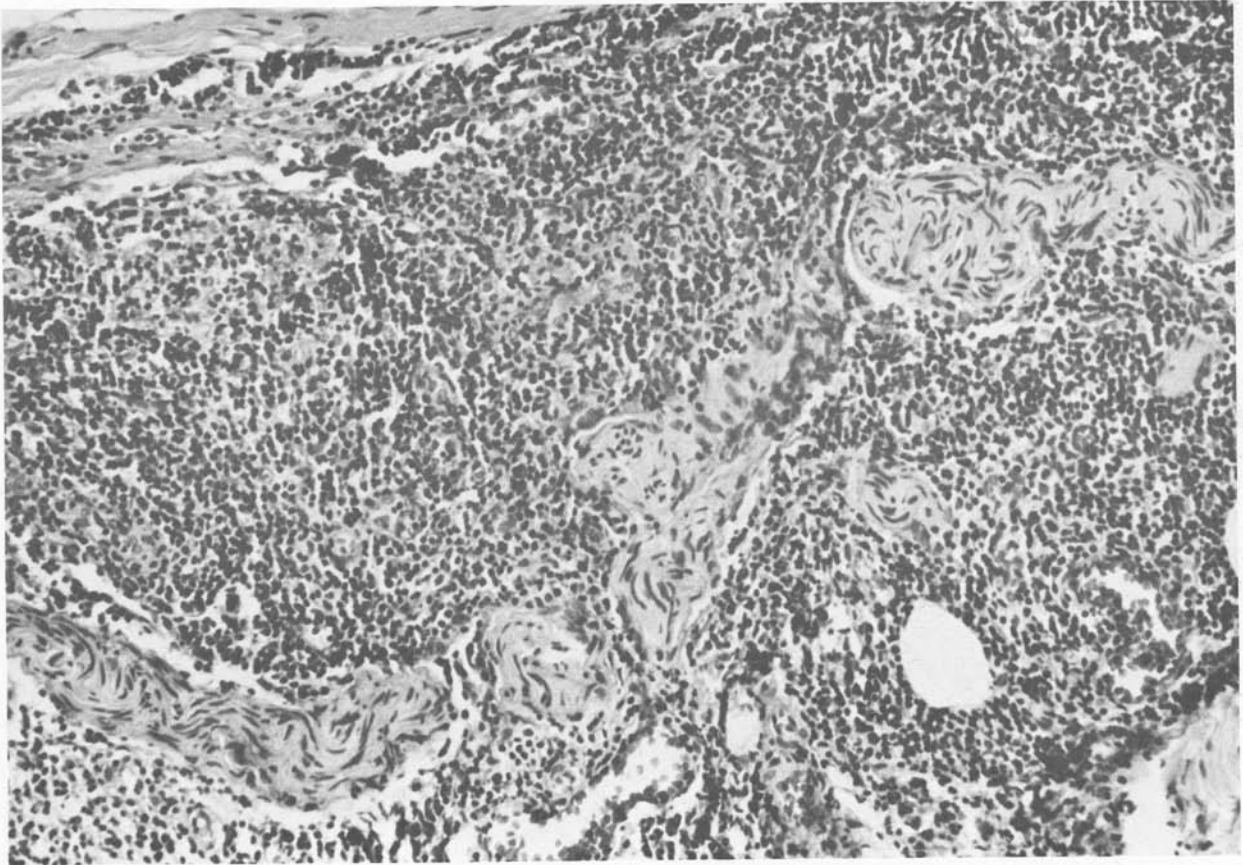


FIG. 2. Spermatic nerve surrounded by a spermatic granuloma.

inflammatory responses to extravasation of spermatozoa. In layman's terms, they are sterile abscesses. The body deals with extravasation of sperm in a predictable fashion³: first, there is acute inflammation; then, when the inflammation has subsided, there appears either a scar containing ceroid, the end-product of degenerated sperm, or a fistula to the other side of the vas or to the skin, or a medusa head of blind channels lined with epithelium showing little evidence of inflammation and termed *vasitis nodosa*.⁵ All of these manifestations are variations of the same lesion, differing in extent, location, and age.

Asymptomatic Granulomas. The asymptomatic granuloma (often termed *vasitis nodosa*), commonly seen at vasovasostomy, is small, due to either minor, nonprogressive leakage of sperm or to a long-existing lesion. In either case the body has lined the granuloma with epithelium so that it is stabilized, all inflammation having disappeared.

Symptomatic Granulomas. The symptomatic (painful) granuloma, on the other hand, has a wall of acute inflammatory cells. It is often cystic (Fig. 1), with contents consisting of sperm, red cells,

polymorphonuclear leukocytes, and various other phagocytes. Since the vas is in close proximity to other cord structures, the wall of the granuloma may include the spermatic vessels and nerve (Figs. 2 and 3) as well as the vasal vessels and nerve. It is painful because of the effect of its acute process upon the surrounding tissues, particularly when the lesion is touched and thus compressed; because it is distended when a bolus of sperm reaches it during ejaculation; because it is compressed against the external ring when the cremasteric muscles elevate the testis at ejaculation; or because its inflamed wall stimulates a branch of the (external) spermatic nerve.

Inflammation of this nerve may cause acute pain in the wall of the granuloma; furthermore, when this pain radiates to the flank, it imitates that of ureteral colic. A physician who had a spermatic granuloma reminisced that he "experienced the most agonizing pain in my life" and that "the pain finally subsided after I received 15 mg of morphine on five occasions in less than 2 hours." During a subsequent attack, a painful, tender swelling was noted in the right scrotum, palpation of which caused excruciating pain radiating to the

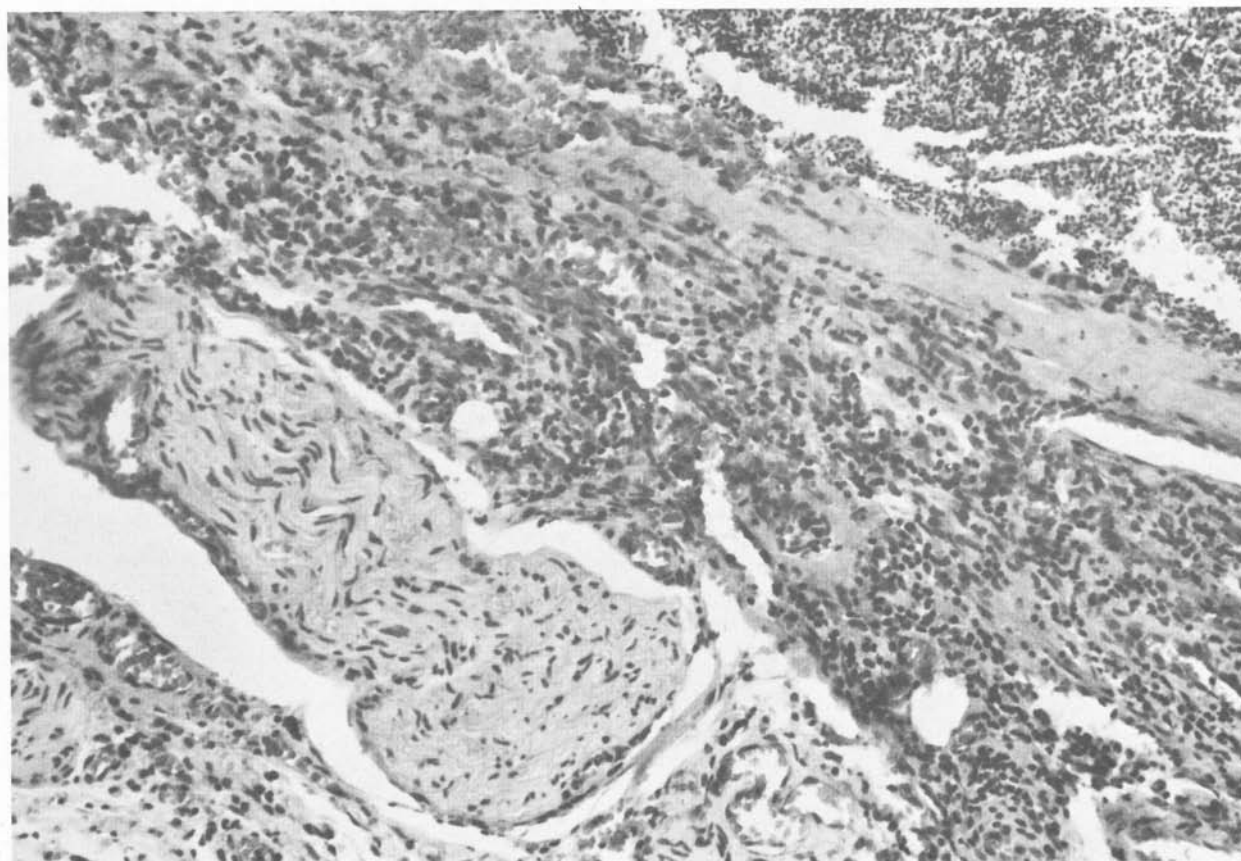


FIG. 3. Wall of a cystic spermatic granuloma. A pool of sperm is visible at *upper right*, the spermatic nerve at *lower left*.

flank. The origin of this pain was confirmed when blockade of the spermatic cord by procaine administration immediately relieved it—and when it recurred after the anesthesia abated. Excision of the granuloma, with fulguration of the mucosa of the vas end, cured this patient. Others in this series have had pain of similar radiation and severity.

Proper sealing of the testicular end of the vas at vasectomy will prevent formation of a granuloma.⁶ This sealing is best achieved by fulguration of the mucosa of this cut end, which leaves the muscular wall alive. If fascial interposition is carried out, the testicular end of the vas should be brought out of the sheath so that, if a granuloma occurs, it will be superficial, easily reached, and not involve the vessels and nerves of the spermatic cord.

It is best not to interfere with an asymptomatic granuloma: the body defenses will come to the rescue. An asymptomatic granuloma should not be excised. Rather, if it is cystic it should be evacuated, and the vas sealed proximally to prevent further leakage of sperm. Deprived of new sperm, it will heal uneventfully.

Approximately 1 of 400 men who undergo vasc-

tomy will later seek a vasovasostomy. Thirty-two per cent of men undergoing ligature vasectomy develop granulomas, and as many as 10% have symptoms. It is absurd to suggest that those men wishing to remain sterile risk a painful, even disabling, lesion for the benefit of that rare person who will later seek a return of fertility. As with the elephant story, unless one views the "animal" from all of its aspects one is bound to misjudge its nature.

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