

Patient noncompliance after vasectomy

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Objective: To determine the postoperative instruction compliance rate in men undergoing bilateral vasectomy.

Design: Retrospective chart review.

Setting: Private practice urological office.

Patient(s): The records of all patients undergoing vasectomy were reviewed to determine the rate of compliance with postvasectomy follow-up instructions. It is our policy to have the patient continue to use some form of birth control until he achieves two consecutive negative semen analyses 1 month apart. In addition, we recommend a yearly semen analysis after achieving sterility to screen for the rare patient who recanalizes. Postvasectomy follow-up instructions are given to the patient both verbally and in writing.

Intervention(s): None.

Main Outcome Measure(s): The records of 1,892 consecutive patients undergoing vasectomy were reviewed, and the results of semen analyses were noted to determine the rate of compliance with postvasectomy follow-up instructions.

Result(s): Six hundred forty-four men (34%) never returned after vasectomy and, therefore, no semen analyses were available for examination. Six hundred nineteen men (33%) returned for a single semen analysis. Six hundred twenty-nine men (33%) returned for a second negative semen analysis. Only 60 men (3%) completed postvasectomy follow-up instructions and returned for a yearly semen analysis.

Conclusion(s): The rate of compliance with postvasectomy follow-up instructions for determining sterility is poor. (Fertil Steril® 1997;68:552-5. © 1997 by American Society for Reproductive Medicine.)

Key Words: Postvasectomy, follow-up instructions, noncompliance

Bilateral vasectomy remains a popular and safe method of birth control in the United States and throughout the world. Traditionally, semen analyses are performed at various intervals after vasectomy to determine the presence or absence of sperm in the ejaculate and to evaluate the effectiveness of the surgery in achieving permanent sterility.

Because failure of vasectomy may result in a pregnancy, it is of utmost importance that patients undergoing vasectomy follow instructions to determine the success of the operation. A recent report indicates poor compliance in following postoperative instructions for determining sterility in this group of

patients (1). We report our postoperative instruction compliance rate in men undergoing bilateral vasectomy. These men are instructed in the postvasectomy follow-up protocol in person verbally on one occasion and three times in writing.

MATERIALS AND METHODS

The records of all men undergoing bilateral vasectomy in our practice between 1985 and 1995 were reviewed to determine the rate of patient compliance in following postvasectomy instructions for determining patient sterility. It is our policy to have the patient ejaculate at least 12 times before bringing in his first semen analysis. We recommend continued use of some form of birth control until the patient achieves two consecutive negative semen analyses (i.e., no sperm in the ejaculate) 1 month

Received March 6, 1997; revised and accepted May 21, 1997.

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I, _____, authorize Dr. _____ to perform the procedure, bilateral vasectomy, upon me on _____. It is my understanding that this procedure is being done to achieve sterility and I further realize that semen analysis at prescribed intervals will be necessary to insure absence of sperm.

I understand that no surgical procedure is 100% successful. I also realize the unlikelihood of reconstruction of the vas deferens with functional sperm production should I so desire at a later date.

I am aware that a minimum of two negative semen analyses, i.e. no sperm seen in the semen analysis, one month apart is required prior to resuming unprotected intercourse. In addition, I am aware that it is recommended that a yearly semen analysis be performed to insure continued sterility.

Date: _____ Patient: _____
 Wife: _____
 Witness: _____

Figure 1 Permission form signed by patients undergoing vasectomy.

apart. The results of semen analysis are recorded in both the patient's chart and a special postvasectomy semen analysis log used for all patients undergoing vasectomy. We also recommend a yearly semen analysis to ensure continued success of the procedure in achieving azoospermia and to screen for the rare patient who recanalizes.

The surgeon who performed the vasectomy performs all semen analyses in our office using standard light microscopy. A positive semen analysis is one in which sperm are present. A negative semen analysis is one in which no sperm are seen on multiple fields. There is no charge for the semen analysis. The patient is informed of the semen analysis results by telephone or in writing, and further instructions are given at that time.

Once the patient has achieved two consecutive negative semen analyses 1 month apart, he is informed that the vasectomy was successful in achieving sterility. At this time, we again recommend a yearly semen analysis to determine continued sterility and to screen for the patient who recanalizes and subsequently becomes fertile again.

Patients who schedule a vasectomy are sent a pamphlet created by members of our practice and entitled "Vasectomy." This pamphlet explains the surgical procedure and clearly outlines the follow-up instructions. At the time of vasectomy consultation, the procedure is explained by the surgeon and the follow-up instructions are reviewed in detail. The patient then signs a special permission form (Fig.

1). After the vasectomy, the patient leaves the office with written postvasectomy follow-up instructions (Fig. 2).

Vasectomy was performed by one of two urologic surgeons (T.J.M. or G.G.C.); the conventional incisional technique was used initially, and the "no-scalpel" technique was used more recently. Both techniques were performed under local anesthesia and included the application of double Weck clips proximally and distally on both sides, the removal of 1 cm of vas on both sides, and cautery of all vasal lumina.

In summary, every patient undergoing a vasectomy receives two written sets of postvasectomy instructions detailing the method used for determining sterility. In addition, a careful oral explanation is reviewed at the time of vasectomy consultation. Finally, the patient signs a permission form clearly stating that two consecutive negative semen analyses, 1 month apart, are required before the vasectomy is considered to be successful and that a yearly semen analysis is recommended.

RESULTS

From 1985 to 1995, 1,892 men underwent bilateral vasectomy at our clinic. The charts of these men were reviewed to determine patient compliance in following postvasectomy instructions. Six hundred forty-four men (34%) never returned and, therefore, no semen analyses were available for examination. Six hundred nineteen men (33%) returned with one specimen for semen analysis. Five hundred eighty-three of these men had a single negative semen anal-

Dear Patient:

No method of birth control is 100% effective. To ensure successful recovery and optimal outcome after vasectomy, please follow these instructions carefully.

1. Take medications as prescribed for the next 2 days.
2. Use supportive underwear.
3. Use an ice bag tonight.
4. Attempt at least 12 ejaculations before your first semen analysis is due.
5. Please use the container supplied for your semen analysis.
6. Please bring your semen specimen to the office for analysis.
7. A minimum of two negative specimens, in other words, no sperm in the semen analysis, 1 month apart is recommended before engaging in unprotected intercourse.
8. A yearly semen analysis is recommended to ensure continued sterility.
9. Please call the number above if you are having problems or if you have any questions.

Figure 2 Postvasectomy follow-up instructions.

ysis, and 36 had a single positive semen analysis. In summary, 619 men returned for one semen analysis and, despite the results of the test, never returned for a second semen analysis.

Six hundred twenty-nine men (33%) had an initial negative semen analysis and returned for a second semen analysis. Five hundred sixty-four of these men had a second negative semen analysis and were instructed to return on a yearly basis for further semen analysis.

Sixty-five men who returned for a second semen analysis had a positive result. Fourteen of these 65 men failed to return for further testing, 27 returned for additional semen analysis but never were cleared, and 24 returned for additional semen analysis and eventually had two consecutive negative semen analyses 1 month apart. A total of 157 patients with positive semen analyses never were cleared. This group included those men with one or more positive semen analyses.

Eighty-three men required more than two semen analyses to clear all sperm from the ejaculate. In this group, a mean of 3.24 semen analyses (range, 3 to 5) were required to achieve two consecutive negative semen analyses.

Five hundred seven men met the criteria for two consecutive negative semen analyses 1 month apart and were instructed to return on a yearly basis for semen analysis. Only 60 men (3%) of the 1,892 patients returned for yearly semen analysis.

In summary, 644 (34.04%) of 1,892 patients had no follow-up at all. Six hundred nineteen (32.71%) of 1,892 patients returned for a single semen analysis. Six hundred twenty-nine (33.25%) of 1,892 patients returned for two or more semen analyses. Only 60 (3%) of 1,892 patients completed the follow-up as recommended.

Eighty (4%) of 1,892 patients had a complication that the surgeon noted in the chart and dealt with clinically. The most common complications were swelling (14 patients) and testicular pain (25 patients). In this group, 27 of the 80 patients (34%) had no follow-up semen analysis. Twenty-one patients returned for a single semen analysis. Twenty-three were cleared after two semen analyses, and three of these returned on a yearly basis. Nine patients brought in two or more semen analyses but never were free of sperm in the ejaculate.

Twenty-one (1%) of the 1,892 patients underwent repeated vasectomy because of persistence of sperm in the ejaculate. In this group, there were six pregnancies reported. Two other pregnancies were reported and documented in the charts. A total of eight pregnancies occurred among 1,892 men undergoing vasectomy, for a pregnancy rate of 0.4%. None of the men whose partners became pregnant met the crite-

Table 1 Theoretic Reasons Why Patients Do Not Return for Postvasectomy Follow-up Semen Analysis

1. Death of the patient or partner.
2. Change in the patient-partner relationship (i.e., divorce or separation) making fertility status less important.
3. Change in fertility potential of the partner (i.e., hysterectomy, oophorectomy, or illness affecting fertility potential).
4. Patient leaves geographic area.
5. Patient changes physician or health plan.
6. Patient does not understand the postvasectomy follow-up instructions.
7. Patient fears the results of semen analysis.
8. Patient is unable to provide semen for analysis.
9. Semen analysis is lost or mishandled.
10. Patient has the ability to perform his own semen analysis (i.e., physician, dentist, or veterinarian).

rior of two consecutive negative semen analyses 1 month apart and, therefore, never were cleared by our office.

The average time between the first vasectomy and the redo vasectomy was 316 days (range, 91 to 818 days). In this group, 10 men returned for a single semen analysis and 10 returned for two or more semen analyses. Nine men were cleared after two or more semen analyses. Three of these men continued to bring in a yearly semen analysis. One patient currently is not clear after three semen analyses. One patient had no follow-up after the redo vasectomy.

DISCUSSION

The abysmal postvasectomy instruction compliance rate found in this study is comparable to those reported in previous reviews of this subject (1). Nevertheless, we were somewhat surprised to find that 644 (34%) of the 1,892 patients had no follow-up whatsoever, despite explicit and detailed instructions given both verbally in person and in writing on three separate occasions to each patient undergoing vasectomy. More important, an additional 157 men had one or more positive semen analyses and never returned to the office to complete the follow-up protocol. Only 507 (26.8%) of the 1,892 patients met the criteria for two consecutive negative semen analyses 1 month apart and were cleared. Of these men, only 60 (3%) of 1,892 returned for yearly semen analysis to screen for recanalization, despite very clear instructions to do so.

There are many theoretic reasons why men do not return for follow-up semen analysis. Some of these are listed in Table 1. Many of the factors are clearly beyond the control of the operating surgeon. However, it is incumbent on the vasectomy surgeon to take the time to explain clearly to the patient the importance of the postvasectomy follow-up protocol

for determining sterility. We have found during this explanation that many patients are surprised to learn that they are not sterile immediately after the procedure. These men are not aware that numerous ejaculations are required to clear the system of sperm cells. A standard method for determining sterility must be used and explained carefully to the patient. If this is done, we believe that the patient and the surgeon share responsibility for determining sterility.

We currently have no method for contacting non-compliant patients and believe that any attempt to do so would be a monumental task for the staff to undertake as well as a financial burden for the practice. Finally, recanalization is rare, occurring in fewer than 1 in 2,000 patients (2). Despite the low

likelihood of this occurrence, we continue to recommend yearly semen analysis because there is no cost to the patient. In our study, very few men (3%) took advantage of this service.

Fortunately, none of the patients in this group pursued litigation despite the fact that at least eight pregnancies occurred. Perhaps this reflects our effectiveness in conveying the message that postvasectomy follow-up instructions are important, even though subsequent compliance is poor.

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