Postvasectomy Residual Sperm Pregnancy

CHUN NAN LO, M.D., M.P.H., STEPHEN D. MUMFORD, DR.P.H., AND RICHARD J. ATWOOD, M.A., M.P.H.

Reprinted from June 1980 Fertility and Sterility

PUBLISHED MONTHLY BY THE AMERICAN FERTILITY SOCIETY, BIRMINGHAM, ALABAMA

FERTILITY AND STERILITY
Vol. 33, No. 6, June 1980
Printed in U.S.A.

POSTVASECTOMY RESIDUAL SPERM PREGNANCY

CHUN NAN LO, M.D., M.P.H.*
STEPHEN D. MUMFORD, DR.P.H.†
RICHARD J. ATWOOD, M.A., M.P.H.‡

International Fertility Research Program, Research Triangle Park, North Carolina 27709, and Maternal and Child Health Center, Taiwan Area, Taipei, Taiwan

After a vasectomy, some residual sperm remain stored distal to the site of occlusion. There has been considerable debate about the length of time these residual sperm remain viable and able to cause pregnancy. Skeptical practitioners often attribute a pregnancy within a few months after a successful vasectomy to sexual involvement by the spouse with a nonvasectomized man. This assumption by a physician may not be justified and may have a devastating and irrevocable effect on the couple's relationship.

The absence of well-documented cases of postvasectomy residual sperm pregnancies has prevented a resolution of this debate. A few cases have been presented in the literature,[1-3] but the documentation is incomplete. Complete documentation would be difficult to obtain unless the data were collected coincidently during a research investigation.

The case history reported in this article was recorded during a vasectomy study at the Maternal and Child Health Center of Taiwan. The prospective data document a conception approximately 38 days, and at least nine ejaculations, after a successful vasectomy.

CASE REPORT

A 32-year-old father of two, the youngest of whom was 1 year old, had no urogenital abnormalities and no pre-existing medical conditions before undergoing a routine, uneventful vasectomy procedure. Table 1 lists significant events subsequent to vasectomy.

The patient resumed intercourse 8 days after vasectomy and reported no complications or complaints at the early follow-up visit 19 days postvasectomy.

During the year after vasectomy, the patient returned for five semen tests. The first, 28 days and eight ejaculations postvasectomy, revealed 75 sperm (some of them motile)/high power field (HPF). After 57 days and 16 cumulative ejaculations, a second semen test revealed 0 to 1 sperm/HPF, but no motile sperm. The remaining three semen tests were performed at 96, 220, and 374 days and 20, 50, and 102 cumulative ejaculations, respectively. The third and fifth semen analyses showed no sperm present; however, the fourth showed one immotile sperm/HPF.

The patient's 28-year-old wife reported that her last menses began 24 days after the vasectomy. Conception probably occurred between the first and second semen tests, approximately 38 days postvasectomy. Pregnancy was first suspected by the wife because of a missed menses and was confirmed by the Planotest (Organon, Inc., West Orange, N. J.; sensitivity = 2.5 IU of human chorionic gonadotropin/ml) 57 days after the vasectomy. The pregnancy was terminated 2 days later by vacuum aspiration. The estimated gestational age was 5 weeks (measured from the onset of the last menstrual period). Histologic examination of the uterine tissue revealed an intrauterine pregnancy.

Even though the couple had mainly used con-

Received December 18, 1979; revised February 25, 1980; accepted March 3, 1980.

*Maternal and Child Health Center, Taiwan Area.
†Reprint requests: Stephen D. Mumford, Dr.P.H., International Fertility Research Program, Research Triangle Park, N. C. 27709.
‡International Fertility Research Program.

TABLE 1. *Postvasectomy Events*

Event	No. of days postvasectomy
Resumption of intercourse	8
Early follow-up visit	19
Onset of wife's last menses	24
1st semen analysis	28
Suspected day of conception	38
2nd semen analysis	57
Pregnancy confirmation	57
Pregnancy termination	59
3rd semen analysis	96
4th semen analysis	220
5th semen analysis	374

doms for contraception during the 3 months before vasectomy and for collection of the five semen test samples, they did not use condoms (as advised) or any other contraceptive method after the vasectomy. There is no question that the patient was his wife's only sexual partner. Thus, all of the available documentation strongly suggests that fertile sperm can be ejaculated for at least 38 days and nine ejaculations after a successful vasectomy.

DISCUSSION

In a recent article, Bedford and Zelikovsky[4] suggested that the biologic limits for viability of postvasectomy residual sperm in the distal portion of the male reproductive tract is 16 to 18 days. The documented case history reported in this article demonstrates that the biologic limits can be more than twice the suggested limits. Based on our examination of several thousand postvasectomy semen specimens, we believe that the distribution of the biologic limits for residual sperm viability is an asymmetrical distribution skewed to the right, indicating that the limits may far exceed 38 days for some individuals. Because the biologic limits have not been established, practitioners should not automatically assume that an extramarital relationship is responsible for a pregnancy within a few months after a successful vasectomy when, in fact, still-viable residual sperm may be the cause.

REFERENCES

1. Marshall S: Postvasectomy pregnancy. JAMA 242:189, 1979
2. Edwards IS: Vasectomy: irrigation with enflavine. Med J Aust 1:848, 1977
3. Errey B: Follow-up after vasectomy. Med J Aust 2:750, 1973
4. Bedford MJ, Zelikovsky G: Viability of spermatozoa in the human ejaculate after vasectomy. Fertil Steril 32:460, 1979