Original investigations into the clearance of spermatozoa after vasectomy

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"The urologist and patient, with the cooperation of the laboratory performing the sperm counts, can determine within a few days after operation that aspermia has been produced and that the procedure has been successful."

—Freund M, Davis JE. Disappearance rate of spermatozoa from the ejaculate following vasectomy. Fertil Steril 1969;20:163–70.

One of the more interminable disputes in male reproductive medicine includes nearly all aspects of the care of men after vasectomy. We are only recently moving toward consensus about how to best indicate the moment when a man becomes sterile—a testament to decades of research into this deceptively simple and ubiquitous procedure. However, even now, to ask urologists how they perform the procedure, how they measure success, when they ask their patients to obtain their first semen analyses, is to invite disagreement. It is in this spirit that Drs. Freund and Davis sought to investigate the exact number of ejaculations required to "clear" a man for unprotected intercourse. They bemoaned the variability in practice patterns regarding a mandatory prolonged waiting period before the first semen analysis. They sought to provide "an aid to the urologist for the information and guidance of the patient," but their efforts faced an impenetrable wall of surgeon preference for the next 40 years.

In many ways, their approach was well ahead of its time. First, they used a modified method of fascial interposition. Instead of using the modern technique of spermatic fascial interposition, they used the vasal sheath itself to close off each individual end. They also used <100,000 sperm per milliliter as an "[approximation] of zero." This important innovation echoed the pivotal decision by the American Urological Association in their 2012 guidelines on the topic. The authors found that their 13 patients needed only six to ten ejaculates (achieved over an average of 15 days) to sufficiently clear their semen of an appropriate number of spermatozoa. Unfortunately, the authors' hope for practice change—that the first post-vasectomy semen analysis would be universally hastened to occur after the tenth ejaculate—remains stymied to this day. The 2012 guidelines clearly recommend 8–16 weeks as the "appropriate" time to obtain the first analysis, regardless of the number of ejaculations.

Freund and Davis wrote their article at a time when the prevailing wisdom dictated that men submit to semen analyses every 6 months for 1–2 years to exclude spontaneous recanalization. Although modern compliance rates with post-vasectomy semen analyses are dismal enough, one wonders how few men actually complied with such an aggressive surveillance regimen. The efforts of Drs. Freund and Davis reflect a passing shot in the ever-tilting battle between absolute accuracy and patient convenience when it comes to post-vasectomy semen analyses. I well recall the heated arguments that developed when the 2012 guidelines stipulated that one—and only one—semen analysis with an appropriate result was necessary and sufficient to "clear" a man after vasectomy. Indeed, the problem of interpreting a post-vasectomy semen analysis is not dependent on any more modern technology than was already available in 1969, and so the controversy does not progress onward and only persists.

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https://doi.org/10.1016/j.fertnstert.2018.11.002