Vasectomy: AUA Guideline

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Abbreviations and Acronyms

CV = conventional vasectomy

FDA = Food and Drug Administration

FI = fascial interposition

MC = mucosal cautery

MIV = minimally invasive vasectomy

NSV = no-scalpel vasectomy

PVSA = post-vasectomy semen analysis

RNMS = rare non-motile sperm

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Purpose: The purpose of this guideline is to provide guidance to clinicians who offer vasectomy services.

Materials and Methods: A systematic review of the literature using the search dates January 1949-August 2011 was conducted to identify peer-reviewed publications relevant to vasectomy. The search identified almost 2,000 titles and abstracts. Application of inclusion/exclusion criteria yielded an evidence base of 275 articles. Evidence-based practices for vasectomy were defined when evidence was available. When evidence was insufficient or absent, expert opinion-based practices were defined by Panel consensus. The Panel sought to define the minimum and necessary concepts for pre-vasectomy counseling; optimum methods for anesthesia, vas isolation, vas occlusion and post-vasectomy follow up; and rates of complications of vasectomy. This guideline was peer reviewed by 55 independent experts during the guideline development process.

Results: Vas isolation should be performed using a minimally-invasive vasectomy technique such as the no-scalpel vasectomy technique. Vas occlusion should be performed by any one of four techniques that are associated with occlusive failure rates consistently below 1%. These are mucosal cautery of both ends of the divided vas without ligation or clips (1) with or (2) without fascial interposition; (3) open testicular end of the divided vas with MC of abdominal end with FI and without ligation or clips; and (4) non-divisional extended electrocautery. Patients may stop using other methods of contraception when one uncentrifuged fresh semen specimen shows azoospermia or $\leq$100,000 non-motile sperm/mL.

Conclusions: Vasectomy should be considered for permanent contraception much more frequently than is the current practice in the U.S. and many other nations. The full text of this guideline is available to the public at http://www.auanet.org/content/media/vasectomy.pdf.

Key Words: vasectomy; sterilization, reproductive; vas deferens, male contraception; guideline

INTRODUCTION

Vasectomy is the most common non-diagnostic operation performed by urologists in the United States. Even though an extensive body of literature on vasectomy exists, evidence-based standards for anesthetic, preoperative, operative and postoperative vasectomy practices have not been defined. This guideline is intended to be a comprehensive evidence-based guideline on vasectomy.

BACKGROUND

The number of vasectomies performed in the U.S. has been calculated to be

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175,000 to over 500,000 annually.[1,2] More than 75% of vasectomies in the U.S. are performed by urologists,[1] and about 90% of urology practices in the U.S. offer vasectomy services.[1]

Vasectomy is the fourth most commonly-used contraceptive method in the U.S. behind condoms, oral contraceptives for women and tubal sterilization.[3] Compared to tubal ligation, which is the other common method of permanent contraception, vasectomy is equally effective in preventing pregnancy, but vasectomy is simpler, faster, safer and less expensive.[4] Vasectomy requires less time off work, requires local rather than general anesthesia and is usually performed in a doctor's office or clinic. The potential surgical complications of vasectomy are less serious than those of tubal ligation.

Despite the clear advantages of vasectomy, prevalence data for 1998–2002 show that tubal ligation was performed about two to three times more often than vasectomy.[2] Among women ages 15 to 44 years in the U.S., in 2002 only 5.7% relied on vasectomy for contraception compared to 16.7% who relied on tubal ligation.[5] Worldwide, the discrepancy between vasectomy and tubal ligation is even more marked than in the U.S. These data and the many advantages of vasectomy compared to tubal ligation establish that vasectomy should be considered for permanent contraception much more frequently than is the current practice in the U.S. and many other nations.

METHODOLOGY

The Panel employed the American Urological Association (AUA) guideline methodology. A systematic review of the literature using the MEDLINE® and POPLINE databases with search dates January 1949-August 2011 was conducted to identify peer-reviewed relevant publications. The search identified almost 2,000 titles and abstracts. Application of inclusion/exclusion criteria yielded an evidence base of 275 articles. Only a small subset of these articles is referenced in this summary. A complete list of references and a full explanation of AUA guideline methodology can be found in the unabridged text of Vasectomy: AUA Guideline (2012), which is available online at http://www.auanet.org/content/media/vasectomy.pdf.

PREOPERATIVE PRACTICE

1. A preoperative interactive consultation should be conducted, preferably in person. If an in-person consultation is not possible, then preoperative consultation by telephone or electronic communication is an acceptable alternative. ***Expert Opinion***

Physical examination at the time of in-person preoperative consultation is highly desirable because it may identify genital pathology that might contraindicate vasectomy and may identify rare patients who are not good candidates for local anesthesia because of unusual scrotal sensitivity, marked anxiety or vasa that are difficult to palpate. This examination ideally should be done far enough in advance of the vasectomy to allow the surgeon to plan for oral or other sedation if necessary.

2. The minimum and necessary concepts that should be discussed in a preoperative vasectomy consultation include the following: ***Expert Opinion***

- Vasectomy is intended to be a permanent form of contraception.
- Vasectomy does not produce immediate sterility.
- Following vasectomy, another form of contraception is required until vas occlusion is confirmed by post- vasectomy semen analysis (PVSA).
- Even after vas occlusion is confirmed, vasectomy is not 100% reliable in preventing pregnancy.
- The risk of pregnancy after vasectomy is approximately 1 in 2,000 for men who have post-vasectomy azoospermia or PVSA showing rare non-motile sperm (RNMS).
- Repeat vasectomy is necessary in ≤1% of vasectomies, provided that a technique for vas occlusion known to have a low occlusive failure rate has been used.
- Patients should refrain from ejaculation for approximately one week after vasectomy.
- Options for fertility after vasectomy include vasectomy reversal and sperm retrieval with *in vitro* fertilization. These options are not always successful, and they may be expensive.
- The rates of surgical complications such as symptomatic hematoma and infection are 1–2%. These rates vary with the surgeon's experience and the criteria used to diagnose these conditions.
- Chronic scrotal pain associated with negative impact on quality of life occurs after vasectomy in about 1–2% of men. Few of these men require additional surgery.
- Other permanent and non-permanent alternatives to vasectomy are available.

The reproductive status of the female partner should be considered prior to vasectomy. If the chance for pregnancy in the female partner is poor, the need for vasectomy may be reduced. If a pregnancy exists at the time of the preoperative consultation, the couple may wish to consider delaying the decision about permanent contraception until the postpartum period. A sample form for providing vasectomy information to patients is available as Appendix B at http://www.auanet.org/content/media/vasectomy.pdf.