FPIN's Clinical Inquiries

Advantages of the No-Scalpel Vasectomy Technique

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Clinical Question

Are there advantages to the no-scalpel vasectomy (NSV) technique compared with the standard incisional method?

Evidence-Based Answer

NSV should be used instead of the standard incisional method. (Strength of Recommendation: A, based on systematic reviews, mixed-quality randomized controlled trials [RCTs], cohort studies, and case-control series.) The NSV technique is associated with fewer complications, produces less perioperative and postoperative pain, results in quicker recovery, takes less time to perform, and is as effective as standard incisional vasectomy.

Evidence Summary

A Cochrane review evaluated NSV compared with the standard incisional technique.[1] It included a large multinational, multicenter, partially blinded RCT including 1,429 men[2] and a smaller RCT with 99 men from a residency clinic.[3] NSV resulted in fewer postoperative hematomas (odds ratio [OR] = 0.23; 95% confidence interval [CI], 0.15 to 0.36), less scrotal pain (OR = 0.66; 95% CI, 0.52 to 0.83), and fewer postoperative infections (OR = 0.34; 95% CI, 0.13 to 0.90).

A lower-quality systematic review of vasectomy techniques found seven additional studies comparing NSV with the standard incisional technique in more than 14,000 men.[4] One study was a nonrandomized parallel controlled trial (n = 1,203), and six were low-quality observational studies. The authors were unable to perform a meta-analysis because of the heterogeneity of the studies, but concluded that NSV produced sterilization rates equal to those with the incisional method, with a lower risk of bleeding and infection.

A large multicenter RCT comparing NSV with the standard incisional technique (included in both reviews discussed earlier) demonstrated additional advantages of NSV *(Table 1)*.[2] A total of 1,429 men from Brazil, Guatemala, Indonesia, Sri Lanka, and Thailand were randomized to NSV (715 patients) or standard incisional vasectomy (714 patients). NSV produced less pain, bleeding, and infection, and took less time to perform than the standard incisional technique. Patients in the NSV group also reported earlier return to intercourse. There were no significant differences in pain, tenderness, or patient satisfaction between the groups at long-term follow-up (16 to 511 days; mean follow-up interval not specified).

A nonblinded RCT with 1,203 men from Thailand compared NSV (680 patients) with incisional vasectomy (523 patients) and found a decreased combined risk of hematoma and infection in the NSV group (absolute risk reduction = 0.4 versus 3.1 percent; number needed to treat = 38; 95% CI, 22 to 85).[5]

Recommendations from Others

The World Health Organization recommends NSV over the standard incisional technique, noting that NSV produces less pain and bruising, results in fewer infections and hematomas, and takes less time to perform than the standard incisional technique.[6] The American College of Obstetricians and Gynecologists does not make a specific recommendation, but notes that NSV has a lower incidence of hematoma formation (0.1 to 2.1 percent versus 0.3 to 10.7 percent) and infection (0.2 to 0.9 percent versus 1.3 to 4 percent)

Table 1. No-Scalpel vs. Standard Incisional Vasectomy

Characteristic	*NSV (%)*	*Standard incisional technique (%)*	*NNH for standard incisional technique vs. NSV*
Able to resume sexual activity within six days	34	22	9 ($P < .05$)
Hematoma*	1.8	12.2	9 (95% CI, 7 to 13)
Infection*	0.2	1.5	78 (95% CI, 37 to 603)
Intraoperative pain			
None	66.8	60.2	16 ($P < .05$)
Mild	28.4	35	16 ($P < .05$)
Operating time			
Less than 7 minutes	59.9	38.3	5 ($P < .01$)
More than 11 minutes	13.9	22.6	12 ($P < .01$)
Postoperative pain*			
None	54.7	43.3	8 (95% CI, 6 to 18)
Mild	39.5	45.8	6 (95% CI, 5 to 12)
Moderate	5.1	9.3	23 (95% CI, 14 to 91)
Severe	0.7	1.6	Not statistically significant

CI = confidence interval; NNH = number needed to harm; NSV = no-scalpel vasectomy.

**—Postoperative pain, hematoma, and infection noted at 15 days' follow-up.*

Information from reference 2.

compared with the standard technique.[7] Neither the American Urological Association nor the American Academy of Family Physicians has a policy statement on the recommended method for performing vasectomy.

The opinions and assertions contained herein are the private views of the authors and are not to be construed as official or as reflecting the views of the U.S. Air Force Medical Corps or the U.S. Air Force at large.

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