Vasectomy for the Non-Vasectomist

Michel Labrecque  MD PhD
Department of Family and Emergency Medicine
Laval University
Quebec City
Canada
FMF  2014
Conflicts of Interests

• I perform vasectomy
  • 25 000+ vasectomies performed since 1986
• I had research contracts related to vasectomy
  • FHI360/EngenderHealth
  • Contravac (SpermCheck Vasectomy®)
• I was involved in the development of Clinical Practice Guidelines on vasectomy
  • American Urological Association (AUA)
  • European Association of Urology (EAU)
  • Faculty of Sexual and Reproductive Healthcare (UK)
Objectives

At the end of the session you will be able to:

1. Correctly inform men - and women- seeking contraception about male sterilization
2. Identify surgical consultants offering evidence-based vasectomy services
3. Interpret results of post vasectomy semen analysis
4. Manage common complications after vasectomy
Mark

- 35 years-old
- Married since 8 years
- Wife 32 years-old
- 3 children
- Youngest 4 month-old
- Using condoms

- He wants a vasectomy

- *What do you tell him?*
The Preoperative Consultation

- **Permanent** form of contraception
  - Alternatives
  - Vasectomy reversal/sperm retrieval with in vitro fertilization

- **No immediate** sterility
  - Post-vasectomy semen analysis (pvsa)

- **Not 100% reliable**
  - Repeat vasectomy ≤1%
  - Risk of pregnancy: 1 in 2,000 (0.05%)

- Surgical **complications**: 1-2%
- Chronic scrotal **pain**: 1-2%
Mark

• Do you examine him?
Pre-Vasectomy Exam

- Vas deferens
- Epididymis
  - Head
  - Tail
- Testis
Mark

- He understands the pros and cons
- Vasectomy is his preferred option

- *Whom do you refer him to?*
Your Ideal Surgical Consultant!

- No pain
- No stitches
- No complications
- No failures
Your Ideal Surgical Consultant!
Your Ideal Surgical Consultant!
Vasectomy 101

- **Step 1: Anaesthesia**

- **Step 2: Vas Isolation**
  - No stiches
  - No complications

- **Step 3: Vas Occlusion**
  - No failures
Step 1. Anaesthesia

• Local
  
  AUA 2012 Expert opinion/EAU 2012 principle

• Pain can be minimized with:
  • mini-needle (#30)
  • jet gun
The Mini-Needle Technique

- 30 gauge needle 1”
- 3 cc syringe
- 2 cc lidocaine
- 0.5 cc injected in and around the vas at the level of the intended surgical site

Shih et al, J Urol 2010
The Jet Gun Technique (No Needle)
The Jet Gun Technique (No Needle)
A Good Marketing Tool!
## Pain According to the Anaesthesia Technique

<table>
<thead>
<tr>
<th>Technique</th>
<th>Expected</th>
<th>Mean Pain on 10</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Expected</td>
</tr>
<tr>
<td><strong>Vasal Nerve Block</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>White 2007</td>
<td>2.1</td>
<td>1.9</td>
</tr>
<tr>
<td>Local (#27)</td>
<td>3.3</td>
<td>2.7</td>
</tr>
<tr>
<td>Aggarwal 2009</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Mini-needle (#30)</strong></td>
<td>3.1</td>
<td>1.5</td>
</tr>
<tr>
<td>Shih 2010</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>No Needle</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Weiss 2005</td>
<td>1.7</td>
<td>0.7</td>
</tr>
<tr>
<td>White 2007</td>
<td>1.6</td>
<td></td>
</tr>
<tr>
<td>Aggarwal 2009</td>
<td>2.2</td>
<td>2.1</td>
</tr>
</tbody>
</table>
Step 2. Vas Isolation
The “Classic” Technique
The “Classic” Technique
Recommended Vas Isolation Technique

• Minimally Invasive Vasectomy (MIV) technique
  
  * AUA 2012 Standard (Evidence Strength Grade B)
  * Small (<10 mm) opening (s)
  * No skin sutures
  * Minimal dissection of the vas and perivasal tissues
This is not an MIV!
Recommended Vas Isolation Technique

• Minimally Invasive Vasectomy (MIV) technique
  AUA 2012 Standard (Evidence Strength Grade B)
  • Small (<10 mm) opening(s)
  • No skin sutures
  • Minimal dissection of the vas and perivasal tissues

• No-scalpel vasectomy (NSV) is the best studied MIV

NSV and MIV are vas isolation techniques, not “vasectomies”
The No Scalpel Technique
## Surgical Complication Rates
Classic Technique vs. NSV

<table>
<thead>
<tr>
<th>Authors</th>
<th>Hematoma (%)</th>
<th>Infections (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>C</td>
<td>NSV</td>
</tr>
<tr>
<td>Sokal 99</td>
<td>12.2</td>
<td>1.8</td>
</tr>
<tr>
<td>Christensen 02</td>
<td>15.9</td>
<td>9.5</td>
</tr>
<tr>
<td>Nirapathpongpron 90</td>
<td>1.7</td>
<td>0.3</td>
</tr>
</tbody>
</table>

All p < 0.05

No prophylactic antibiotics

*AUA 2012 Recommendation (Grade C)*

*Labrecque et al, BMC Medicine 2004*
Step 3. Vas Occlusion
The Most Common Vasectomy Occlusion Techniques

• Ligature
  • Suture material
  • Metal clips
• Excision
• Fascial interposition (FI)
• Intraluminal (mucosal) cautery
The “Classic” Occlusion Technique...

Histologic examination of the excised vas... not required

*AUA 2012 Expert Opinion*
Cautery
Fascial Interposition (FI)

Half of the vasectomies performed in USA

Barone et al, J urol 2006
EAU 2012 Recommendation (1a A)

- Cautery (thermal or electrocautery) and FI

...no vasectomy technique has been shown to be superior in terms of prevention of late recanalisation and spontaneous pregnancy.
AUA Recommendation (Grade C)

- Mucosal cautery (MC) with or without fascial interposition (FI)
  - No ligatures or clips applied on the vas
  - with FI if testicular end left open
- Non-divisional method of extended electrocautery (Marie Stopes International technique).

... occlusive failure rates ... consistently <1% in large numbers of patients across studies conducted by different surgeons...
The “Classic” Occlusion Technique...

if ... personal training and/or experience indicate... consistently satisfactory results ...

AUA 2012 Option (Grade C)
LE Is Not Effective!

- Occlusive Failure Rates
  - Mexico: **8%**
    *Cortes et al Contraception 1997*
  - Canada: **8%**
    *Labrecque et al J Urol 2002*
  - Mexico: **12%**
    *Barone et al J Urol 2003*
  - Colombia: **29%**
    *De los Rios Andrologia 2003*
  - Seven Countries Worldwide: **13%**
    *Sokal et al BMC Medicine 2004*
LE Is Not Effective!

• Contraceptive Failure Rates
  • India: 3% – 5%
    *Mrhida 1979*
  • Nepal: 4% after 3 years
    *Nazerali et al Contraception 2003*
  • Vietnam: 4% after 5 years
    *Hieu et al Int J Gynaecol Obstet 2003*
  • China: 9% after 10 years
    *Wang Contraception 2002*
Result of a Late Recanalisation 17 Years After Vasectomy With Ligation and Excision
Step 3. Vas Occlusion – In Summary

• Occlusion technique is crucial to achieve contraceptive and occlusive success

• Combining cauterization and FI is associated with the lowest risk of recanalization and occlusive failure

• Simple ligation and excision as an option ???
Your Ideal Surgical Consultant!

- No pain
- No stitches
- No complications
- No failures
Mark

- He had an NSV with cautery and FI

- *When should he have his first post-vasectomy semen analysis (pvsa)?*
Mark

• He had an NSV with cautery and FI

• *When should he have his first post-vasectomy semen analysis (pvsa)?*

  • First pvsa at 12 weeks
  • 100,000 non-motile sperm/ml

• *What do you do?*
Evidence based flow chart of post-vasectomy testing protocol

Vasectomy with cautery and FI

Single test at 3 months

≤100,000 non motile sperm/ml (95% of patients)  
No further test

>100,000 sperm/ml motile or non-motile  
(5% of patients)  
Control 4-6 weeks

≥100,000 spermato immobile/ml  
No further test

>100,000 non motile sperm/ml  
Control 4-6 weeks  
Possible failure  
If > 6 months

Motile sperm  
Control 4-6 weeks  
Probable failure  
If > 6 months

8 to 16 weeks  
Option (Grade C)

Labrecque et al, J Urol 2005
Your Ideal Surgical Consultant!

• No pain
• No stitches
• No complications
• No failures
• No delayed and unneeded PVSAs
Mark

- 4 days after vasectomy
- Still pain on both sides
- No fever

- Possible Dx?
- What do you do?
Normal Early Post-Vasectomy Exam

- Vas deferens
- Epididymis
  - Head
  - Tail
- Testicle
Hematoma

- Large (> 3 cm) to very large lump
- Pain
- Scrotal bruising
Hematoma

• Very early, very large: urologist

• Observation
• Explanations (takes weeks to months to disappear)
• Pain relief
• Scrotal support/Ice/Rest
• Close follow-up for infection
• Inform your surgical consultant!
Mark

- 6 days after vasectomy
- Increasing pain and swelling on left side
- Fever?

- Possible Dxs?
- What do you do?
Infection

- Pain
- Usually large swelling
- Skin oedema
- Fever
Infection

• You won’t miss this one!
Infection

- Explanations (takes 48 hrs to improve with AB/days to weeks to disappear)
- Levaquin 500mg daily x 10 days (covers both gram + and gram -)
- NSAID/pain relief
- Scrotal support/Ice/Rest
- Close follow-up
- Inform your surgical consultant!
“Acute Granuloma”

Painful, mobile, small lump (1-2 cm)
No signs of infection
“Acute granuloma”

- Explanations (takes 48 hrs to improve with NSAID)
- Ibuprofen 200 mg 3 tab TID/Naproxen 500 mg BID x 5-7 days
- Support/Ice/Rest
- Close follow-up for infection
- If no response and no infection
  - Prednisone 50 mg daily x 7 day, 25 mg daily x 7 days, 12.5 mg x 7 days
Mark

- 2 months after vasectomy
- Painful lump on right side
- No fever
- No risk of STDs

- Possible Dxs?
- What do you do?
Granuloma

Chronic intermittent pain with activities
Small painful lump (1 cm)
No signs of infection
Granuloma

• Explanations
  1. Ibuprofen 200 mg 3 tab TID/Naproxen 500 mg BID x 7-14 days
  2. Infiltration xylocaine 2% 0.5 cc + triamcinolone 40mg/ml 0.5 cc
  3. Surgical excision
Congestive Epididymitis

Acute or chronic pain
Temporary or intermittent pain
Painless epididymis (head and/or tail)
Congestive Epididimis

• Explanations/support

1. First steps (frequent 5%)
   • Ibuprofen 200 mg 3 tab TID/Naproxen 500 mg BID x 7-14 days
   • Hot scrotal bath (testes-only)
     • Water at 116°F/46.7°C in Thermos
     • 45 minutes daily for 3 weeks
Congestive Epididimis

2. Second step (rare <1%)
   • Prednisone 50 mg daily x 7 day, 25 mg daily x 7 days, 12.5 mg x 7 days
   • Amitriptyline 10-25 mg daily at night
   • Acupuncture
   • Testosterone 200 mg every 2 weeks for 3 months
   • Vas deferens venting (Open-end vasectomy)

3. Third step (very rare <0.1%)
   • Spermatic cord block/denervation
   • Vasectomy reversal
Key Messages

You can now...

• Adequately inform your patients about vasectomy
• Refer them to an “ideal” surgeon
• Recognize and adequately treat most common complications
VASECTOMY BAR