

APPENDIX

Supplementary Table 1. Multivariable odds ratios for HB PVSA complication for all patients from 2014–2017		
	Odds ratio	95% confidence interval
Age (per year)	1.04	(1.01–1.09)
BMI (per unit increase)	0.97	(0.92–1.02)
Number of children (per child)	0.70	(0.56–0.88)
Insurance (private/self as reference)		
Public	0.50	(0.12–2.07)
Military	0.99	(0.17–5.81)
Surgeon (X vs. Y)	0.51	(0.30–0.88)
Phone call (Y/N)	2.64	(0.97–7.22)
Unplanned office visit (Y/N)	0.47	(0.15–1.42)

Supplementary Table 2. Multivariable odds ratios for factors associated with PVSA compliance for any PVSA testing for surgeon X patients from 2014–2020		
	Odds ratio	95% confidence interval
Age (per year)	1.03	(0.99–1.07)
BMI (per unit increase)	0.92	(0.87–0.97)
Number of children (per child)	0.76	(0.61–0.94)
Insurance (private/self as ref)		
Public	0.83	(0.22–3.13)
Military	5.22	(0.24–112)
PVSA test setting		
Lab	Reference	
Home	0.41	(0.24–0.71)
Phone call (no as ref)		
Yes	1.91	(0.71–5.10)
Unplanned office visit (no as ref)		
Yes	0.70	(0.28–1.74)

Supplementary Table 3. Post-vasectomy semen analysis compliance definitions and rates in published literature			
Study	# of patients	Compliance definition	Compliance
Belker et al ⁴	1029	Two azoospermic SAs	54%
Bradshaw et al ⁵	240	Two azoospermic SAs	70%
Christensen and Maples ⁶	551	6 week SA 12 week SA One year SA	58% 25% 8%
Coward et al ⁷	972	Two or more SAs	52.9%
Dhar et al ⁸	436	Two azoospermic SAs	21%
Duplisea and Whelan ⁹	946	Two azoospermic SAs	36.4%
Maatman et al ¹⁰	1892	Two azoospermic SAs	33%
Smucker et al ¹¹	141	Two azoospermic SAs	26%
Sheynkin et al ¹²	214	Provide SA	53.8%
Bradshaw et al ¹³	503	Complete SA	53%
Trussler et al ¹⁴	226	Complete SA (home-based, lab-based)	76.5%, 66%
Punjani et al ¹⁵	364	One or more SAs (home-based, lab-based)	59.6%, 58.8%
Welliver et al (our study)	486	One HB SA from two surgeons' patients (2014–2017) One HB or LB SA from one surgeon's patients (2014–2017, 2017–2020)	35% 29%, 46%

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Preparation for your vasectomy

- You have been scheduled for a vasectomy with the providers for Community Care Physicians. Please read through this information carefully.
- Vasectomies are performed in the clinic at **23 Hackett Boulevard** in the Urological Institute of Northeastern New York. Please check in at the clinic desk when you arrive for your procedure.
- You will be asked to sign a consent form before the procedure stating that you understand there can be risks involved and that the procedure cannot be guaranteed to make you sterile. Do not take the prescribed valium until after you have signed this consent.
- Confirmation of sterility can take up to 1 year and is verified only once you have provided a semen sample and been told by your physician that you are sterile.

How a vasectomy works:

Sperm cells are produced in the testes and stored in the epididymis where they mature. They then move down a long tube called the vas deferens. Along the way, they are nourished by sticky, white fluids secreted by the prostate and seminal vesicles. They may stay in the vas deferens for many weeks before being ejaculated through the urethra when orgasm occurs.

When you have a vasectomy, the vas deferens is cut and blocked near the testes. The sperm cannot then travel down the long tube and be ejected. The testes will still produce sperm however, they have nowhere to go and they die and are absorbed by your body. The majority of fluid which is produced by the prostate and seminal vesicles, however, will still be ejected.

Nothing in your male reproductive system is changed by a vasectomy. Your male hormone level and sex drive will remain the same. Your secondary sexual characteristics, such as hair distribution and voice pitch, will not be affected. It does not interfere with urinating, and it does not affect your ability to have an erection. Only your ability to conceive is changed.

Prepping for the procedure:

- You have been given a prescription for a valium to take for the procedure. Get this from the pharmacy ahead of time. **DO NOT TAKE** this medication until you have signed the consent on the day of the vasectomy. If you take the valium before signing the consent, your procedure will have to be cancelled.
- Stop taking aspirin or aspirin-type medication (NSAIDS) 7 days before the procedure and 3 days after your vasectomy (Tylenol is okay).
- Please eat or drink within 4 hours prior to the procedure.

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- Shower using an antibacterial soap the morning of your procedure, making sure to clean your scrotum. Wear clean underwear to the doctor's office.
- Shave the scrotal area and underneath the scrotum.
- Dress in comfortable, loose-fitting clothing. Bring an athletic supporter or supportive briefs with you to the appointment.
- Have a driver to take you home after the procedure.
- Write down any last-minute questions you may wish to ask the doctor.

During the procedure:

After you undress, you will be asked to lie on an exam table. The area around the incision will be prepped with antiseptic. A local anesthetic will be injected into the scrotum to minimize discomfort. Then the doctor will make 1 or 2 incisions into the scrotum to do the vasectomy. The cut ends will then be tied or clipped shut. You may feel slight pulling while the tube is being lifted out and cut. Our goal is to make this procedure as comfortable as possible. If you feel pain, let the physician know and they will give you more numbing medicine.

After the procedure:

Immediately after the procedure you will probably rest on the exam table for some minutes. When you first get up, you may feel a bit wobbly and have a dry mouth; these are common occurrences after the procedure. The anesthetic will probably not wear off in an hour or two. Any discomfort you feel will be the greatest during the first 24 hours.

At home after your vasectomy:

- Apply ice (or a bag of frozen peas) to the front of the scrotum for 30 minutes as soon after the procedure as possible. Continue icing the area, 30 minutes on, 30 minutes off, while awake for the first 24 hours after the procedure. This may help prevent excessive bruising and/or swelling. Wearing an athletic supporter or supportive briefs will provide extra support and improve comfort.
- You may resume regular activities as desired with the exception of intense athletic activities or activities such as riding a lawn mower. We encourage you to "take it easy" for the first few days after the procedure. The ice pack and rest usually relieve discomfort from the procedure. You will be given a prescription for pain medicine or you may take acetaminophen (Tylenol), if not allergic.
- Expect a small amount of bloody drainage from the incision site for several hours, then a "scab" will form. No special incision care is needed. Keep the area clean and dry.

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- You may shower the morning after your procedure but should try to keep the water from getting directly on the incisions for 48 hours. After 48 hours, if you are still having minor aching, you may obtain relief by sitting in a tub of warm water once or twice daily. Keep in mind that it is normal to experience some aching, slight bruising, and swelling of the scrotum. However, contact your doctor if you have pain not controlled by oral medication, fever, an extreme amount of bruising, or swelling with scrotal size greater than a grapefruit.
- You may resume sexual intercourse when desired, but at least 1 week after the procedure. A small amount of blood in the semen with the first few ejaculations is normal.
- **IT IS ESSENTIAL TO USE ANOTHER FORM OF BIRTH CONTROL UNTIL THE LAB TEST SHOWS NO SPERM.** You will be given information on how to provide this sample. It may take 20 or more ejaculations to clear the sperm from your semen.
- We will notify you by telephone of your semen analysis results. One negative specimen is required to verify sterility.

Possible complications:

Even though a vasectomy is a minor procedure, there is still the possibility of complications. Complications that may occur soon after your vasectomy include:

Internal bleeding in the scrotum. This usually occurs within 2 days of procedure and may cause increasing pain, great swelling or an enlarging mass. If you have these symptoms, please call the doctor.

Infection. Symptoms include fever, chills, drainage and pain. Although infections are rare, they usually occur a short time after the procedure. Call the doctor's office if you think you have an infection.

Other rare complications that may arise in the first few months after the procedure include:

Sperm Granuloma. This is a lump created by a leakage of sperm when the vas deferens is tied off. It occurs often after vasectomies. The lump is painless and usually dissolves by itself. In extremely rare cases, a surgery is needed to remove it.

Congestion. This may occur 3-12 weeks after the procedure. It is caused by sperm left in the epididymis, and may lead to some aching. Congestion usually disappears without the need for treatment.

Spontaneous formation of a new vas deferens (recanalization). Very rarely a new tube is formed through the scar tissue left by the vasectomy. Usually this can be detected by a

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semen analysis after the procedure. However, recanalization occurs in 1 out of 4,000 men after a negative semen analysis that has been performed 12 weeks or longer after the procedure.

Chronic testicular pain/Post Vasectomy Pain Syndrome. Testicular discomfort lasting several years after the procedure occurs rarely. Chronic debilitating pain is rare.

Other health risks:

Over the past 50 years, numerous health problems have been “linked” with vasectomy. These include the risk of prostate cancer, heart disease, testicular cancer, and a rare form of dementia. All of these “links” have either been disproven or founded on poor evidence.

For example, the December 1995 Yearbook of Urology reported that recent studies, including one of 40,000 men, show that there is no increased risk of prostate cancer after a vasectomy. Studies by the National Institute of Health (NIH) and the Harvard Medical School have shown no link between vasectomy and heart disease. A further study of 20,000 vasectomized men by the NIH has also shown that these men have no more health problems than men who have not had a vasectomy. Only one condition, a temporary inflammation at the site of the surgery called epididymitis, it is more common in vasectomized than non-vasectomized men.

Living with a Vasectomy:

A vasectomy should not change anything except your ability to have children. It has no effect on sexual functioning. You still have the ability to have an erection and an orgasm, and the amount of semen ejected will not decrease noticeably. The same sensations and satisfactions should be present as before.

If you had a good relationship with your partner before the vasectomy, then it should be good afterwards. In fact, some couples report that their mutual enjoyment actually improves because they are no longer afraid of unintended pregnancy. Sex may be more spontaneous because birth control is no longer necessary after your sperm count has been reported as zero.

A change of heart:

Sometimes an unforeseen event in your life may make you wish your vasectomy could be reversed. While a vasectomy must be considered irreversible, there is a surgical procedure called a vasectomy reversal that may restore your fertility. In this procedure, the previously cut vas deferens is reconnected. This theoretically allows sperm to travel down the tube again.

However, this procedure does not always work. The longer it has been since you had the vasectomy, the less likely your fertility will be restored. A vasectomy reversal is also a major operation that is quite expensive, and usually insurance will not pay for it. Therefore, there is no guarantee that your ability to father a child will be restored.

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Another option that might allow you to have children is a sperm bank. Before you have a vasectomy, your sperm are collected and frozen. Then they are stored until you wish to have a child. However, sperm banks are only available in certain parts of the country and you must pay to store the sperm. Like a vasectomy reversal, results cannot be guaranteed. At present, success in achieving pregnancy with “frozen sperm” is very uncertain.

Payment:

Your insurance company will be billed for this procedure. If your insurance company does not provide payment for a vasectomy, you will be required to pay the cost of the vasectomy. It is a good idea to call your insurance company to verify coverage of a vasectomy and determine what your personal cost, if any, will be.