What is a No Needle, No-Scalpel Vasectomy?

There are many forms of birth control available for men and women. There are situations where a man or a couple decides that a more permanent approach that allows for spontaneous relations is the best choice, and a vasectomy is considered.

However, the choice of vasectomy is often rejected because of the prospect of surgery and anesthesia, the needles and scalpels deemed necessary to perform such a delicate procedure.

In fact, there is a relatively new and widely accepted vasectomy procedure which involves no needles for anesthesia and no scalpel or stitches. It is different from a conventional vasectomy in the way the doctor seals off the vas deferens. It also involves an improved method of anesthesia to help make the procedure less painful.

No Needle?

In a traditional vasectomy, a small needle is used to give a lot of local anesthetic in the area of the vas deferens. This may be somewhat uncomfortable and intimidating for many men.

The No Needle vasectomy uses a relatively new device which applies high pressure to deliver anesthetic through the skin and directly into the tissue around the vas deferens. It is virtually painless and delivers causes no bruising or bleeding.

No-Scalpel?

The No-Scalpel vasectomy procedure eliminates the need to cut the patient’s skin in order to reach the vas deferens. Instead the physician identifies the tubes under the skin and then isolates them with a specialized clamp - after the anesthesia has been given.

A special tool is then used to make a tiny puncture and uses the instrument to stretch the opening so the vas deferens can be reached. The vas deferens from each side are pulled through the hole one at a time and cut and blocked. Unlike a conventional vasectomy, there is very little bleeding and scarring and no stitches are required.

Recovering from the No-Scalpel Vasectomy

As mentioned above, it is important to rest for a few days after the No Needle, No-Scalpel Vasectomy. It is often recommended to wear a supportive jockstrap in order to feel comfortable. Place ice on the surgical site immediately after the procedure, this will greatly reduce swelling. It is also recommended to refrain from exercise for a few days.
What are the potential complications?

Although vasectomies are low risk procedures, and the No-Scalpel vasectomy even lower, there are some complications that may arise.

1. **Infections** – as with any procedure involving cutting of the skin or open wounds there is a risk of bacterial or viral infections.

2. **Congestion** – Is discomfort due to pressure caused by sperm in the testes and lower vas deferens.

3. **Sperm Granuloma** – This occurs because sperm is leaking from the cut vas deferens, which then hardens to form a lump (often the size of a pea). Although the lump is not dangerous and almost always flushed out by the body over time, it often causes pain and discomfort.

4. **Recanalization** – This is a very rare occurrence. In this case, sperm will manage to find their way across the blocked ends of the vas deferens. This can occur whether the procedure is performed perfectly, or not.

5. **Internal Bleeding (Hematoma)** – Can occur spontaneously at the site of any surgery, however it is rare in the case of vasectomies. It may also occur if a man strains or exerts himself after the procedure. Resting, especially the first day, is the best prevention.

Success Rates of the No Needle No-Scalpel Vasectomy

Studies conducted in: China\(^1\), USA (New York)\(^2\), Spain (Barcelona)\(^3\) and India\(^4\), show that the No-Scalpel Vasectomy results in much lower complication rates than that of the conventional vasectomy. See the table below:

**Table 1: Stats of No-Scalpel Vasectomy complications**

<table>
<thead>
<tr>
<th>Country</th>
<th># of No-Scalpel Vasectomies</th>
<th>Hematoma (Internal bleeding)</th>
<th>Infections</th>
</tr>
</thead>
<tbody>
<tr>
<td>USA (New York)</td>
<td>238</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Spain (Barcelona)</td>
<td>400</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>China</td>
<td>179,741</td>
<td>160 (0.9%)</td>
<td>1,630 (0.91%)</td>
</tr>
<tr>
<td>India</td>
<td>4,253</td>
<td>2 (0.047%)</td>
<td>3 (0.07%)</td>
</tr>
</tbody>
</table>
How long after the vasectomy until a man is sterile?

Once the tubes have been interrupted, there should be no new sperm released into ejaculated fluid. However, the reservoir of fluid that has already passed the point where the tube is interrupted may contain a sufficient amount of motile sperm. A man will not be sterile until the reservoir is flushed out. Starting at six weeks after the vasectomy, semen is evaluated, to determine if sperm is still present in the ejaculate. Once the physician determines there are no sperm in the ejaculate, a man will be considered sterile.

No Needle, No-Scalpel Vasectomy - A bit of history

The No Needle, No-Scalpel vasectomy developed by Dr. Shunqiang Li in 1974 in China. With over 1,340,000,000 people, approximately 51% male, and the vasectomy being the most common method of birth control. By 1998 over 10 million No-Scalpel vasectomies were performed in China.

The procedure was first introduced to Western physicians in 1985, when the "Association for Voluntary Surgical Contraception" (now AVSC International) sponsored an international team to visit China. At this time the technique was referred to as “The ligation of vas deferens under the direct vision".

In 1985 Dr. Marc Goldstein of the New York-Presbyterian Hospital-Weill Medical College of Cornell University was the first to perform the No-Scalpel Vasectomy procedure in the U.S.A.

Can a vasectomy be reversed?

A vasectomy is not a permanent procedure. Reversing the vasectomy is far more complicated and time-consuming than the No Needle vasectomy.

The vasectomy reversal procedure is performed under an "operating microscope", this is a microscope that stands over the patient. During the procedure, the physician relies on the highly magnified view in order to manipulate the small, fine instruments by hand.
Theoretically, it seems the vasectomy reversal should be the process of reconnecting the two severed ends of the vas deferens (or anastomosis). However this is a very complicated task for a physician to fulfill.

a. The vas deferens is so small with a diameter as thin as a hair. It is very difficult to work on.

b. Over time, pressure builds up in the area where the sperm and fluid are being produced in the testicles but cannot be released. This pressure may cause the epididymis - narrow, tightly-coiled tube connecting the efferent ducts from the rear of each testicle to its vas deferens - to leak and scar. The result is a blockage closer to the testis. If the two disconnected ends of the vas are reconnected but there is scar tissue and blockage at the level of the epididymis, the sperm will not be transported out and the vasectomy reversal will not be successful.

It is critical that during the course of the procedure the surgeon assess if this type of scarring and blockage has occurred and operates accordingly. The first step in the operating room is to evaluate at what point whole sperm appear in the vas deferens.

The surgeon generally begins at the very end of the vas deferens and makes minute incisions sequentially, back toward the testicle, and evaluates the quality of the sperm and fluid found there using a separate, high-powered microscope.

The point at which the surgeon will usually make the reconnection is the first point at which fluid with sperm in it or fluid that, due to its color, indicates there is no blockage closer to the testicles is found.

If there are whole sperm or if there is a certain quality to the fluid, then a vas-to-vas connection or anastomosis may be made. This is called a vaso-vasostomy.

If there are no whole sperm and there is thick white fluid, the vas should usually be connected to the epididymis at the level above the blockage. This is called a vaso-epididymostomy.

**Chances of pregnancy after a vasectomy reversal**

The chances of a subsequent pregnancy from the resulting sperm are excellent after a vasectomy reversal. However, the chance of pregnancy declines with increasing time from the reversal procedure.

If a vasectomy reversal was performed:

- Less than 3 years after the vasectomy, the man has a 97% likelihood of having sperm in the ejaculate and the couple has a 76% chance of becoming pregnant
• 3 to 8 years, 88% of the men will have sperm and 53% of the couples will become pregnant
• 9 to 14 years, 79% of the men will have sperm and 44% of couples will become pregnant
• Over 15 years after the vasectomy, 71% of men will have resulting sperm and 30% of the couples will become pregnant

The sperm produced from the resulting vasectomy reversal can also be used with additional assisted reproductive techniques to significantly increase the chances of a pregnancy. However a safe and less complicated approach would be banking sperm before undergoing the No Needle, No-Scalpel vasectomy.

About the Author
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