

TUBAL LIGATIONS – OPTIONS FOR IN VITRO FERTILIZATION OR SURGICAL TUBAL REVERSAL

VICTORIA
FERTILITY



C·E·N·T·R·E

INTRODUCTION

Tubal ligations are a commonly performed sterilization procedure in women. There are a variety of ways in which this can be done – although by far the most common would be a laparoscopic procedure using either cautery or Filshie clips to occlude the proximal portion of the tubes. Filshie clips are small metal clothes peg-like structures which are clipped onto the tube right near where it meets the uterus, using a laparoscopic approach. The clips cause a crushing injury so that a small segment of fallopian tube has its blood supply cut off, and over time will die. What is left is a missing piece of tube close to where the tube implants to the uterus (referred to as the proximal end). Once this small segment of tube has died, the clip will often fall into the pelvis (an area behind the uterus called the cul-de-sac). The other commonly used method is cautery. During cautery a small segment of tube is grasped with a bipolar grasping forceps and an electrical current is passed through it so that the tube is literally fried. This usually results in approximately 2-3 cm of tubal destruction. This segment of tube also dies – and the end result is a missing segment of tube.

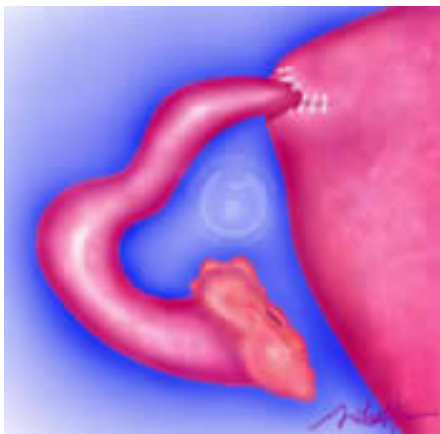
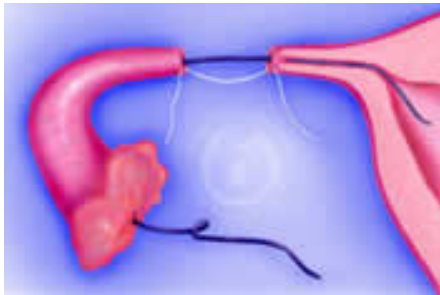
Sometimes a tubal ligation is performed at the same time as a cesarean section. The usual procedure done with a cesarean section is called a Pomeroy procedure. During this procedure a small section of tube is actually cut out (from the mid-section of the tube) and the ends are tied off with suture material. A less commonly performed procedure is a fimbriectomy. During this procedure the ends of the tube (the fimbria) are completely removed. The fimbria are an essential part of the tube, and if a fimbriectomy has been performed, there is no chance of repairing the tube.

SURGICAL TUBAL REVERSAL

There are surgeons who specialize in microsurgical techniques. If a tubal reversal is to be considered, first of all the important thing is to identify how the initial tubal ligation was performed. If Filshie clips were used – the chances for a successful reversal are usually the highest. This is because Filshie clips tend to cause the least amount of tubal destruction. This leaves a maximum amount of tube left for the surgeon to work with and repair. Tubal cautery tends to cause more damage to the tube, however, in many cases these tubes are also amenable to repair. The important thing for the surgeon to identify is that there is at least 4-5 cm of fallopian tube to work with (the average length of a fallopian tube is 8-10 cm). If the surgeon has any doubts about whether or not a tubal reversal could be considered, he or she may first suggest doing a laparoscopy to evaluate further the quality and length of tube remaining before proceeding with a planned tubal reversal.

Most tubal reversals are done using an open technique (as opposed to doing it laparoscopically). This means making an incision in the abdomen, a bit like that used for a cesarean section. This is called a Pfannenstiel incision. The abdomen is opened, and using a microscope, the ends of the tube are reconnected to each other (tube to tube re-anastomosis) or if there is no available proximal tube, the end of the larger

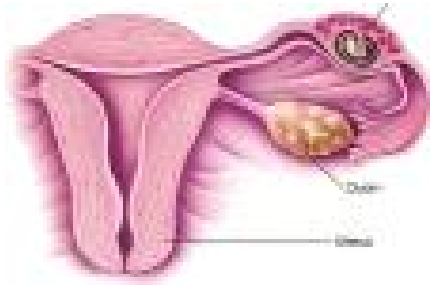
piece of tube is connected to the side of the uterus called the cornu (tube to cornual anastomosis). The procedure normally takes about an hour. After the procedure, you will spend a couple of hours in the recovery room, and in most cases spend the night in hospital. However, in many instances it may be possible to go home the same day. As this surgical procedure is not covered by the Medical Services Plan, the decision to spend the night in a surgical facility or hospital can of course, seriously impact on the total expense of the exercise.



Success rates of this procedure are partially dependent on the technique that was originally used to occlude your tubes, the surgical expertise of the surgeon, and your age. Age has a significant effect on fertility – and more information about the effect of age on fertility can be obtained from our website.

Overall, for women under the age of 35, if the procedure goes smoothly, the chances of becoming pregnant may be as high as 75% over a two year period. Because of the age effects on fertility, for older woman this success rate may be slightly lower. Other things to consider, of course, are male factors. Before having a tubal reversal it is always important to do a semen analysis as the sperm quality can seriously affect fertility as well.

After tubal reversal there is always a risk of an ectopic pregnancy. In most cases, ectopic pregnancies occur in the fallopian tube and are also referred to as tubal pregnancies. The risk of an ectopic pregnancy after a tubal reversal is usually around 10-15%. Tubal pregnancies can be potentially dangerous, so for women who have had a tubal reversal and successfully become pregnant, it is important they see their doctor very early in the pregnancy (at 5-6 weeks) for early evaluation and to make sure that early medical imaging identifies that the pregnancy is indeed in the uterus and not in the fallopian tube.



IN VITRO FERTILIZATION

The other option would be in vitro fertilization. In vitro fertilization is a process whereby fertility drugs are used to stimulate the ovaries to produce a number of eggs. The eggs grow in little capsules of fluid called follicles which can be monitored by ultrasound. Usually 10-12 days of fertility drugs are required to stimulate the ovaries. When the eggs are mature, they are retrieved by ultrasound guidance. An ultrasound probe is used in the vagina, with a needle alongside it to aspirate (suction out) the eggs. The eggs are then fertilized in the laboratory using the partner's sperm. Fertilized eggs are called embryos. The embryos are usually cultured in a special incubator for a few days, and then the best quality embryos are replaced back into the uterus (called embryo transfer).

The success rates of in vitro fertilization are directly proportional to age. For healthy women under the age of 35, if two embryos are put back in the uterus, the chances for a successful pregnancy are in the region of 55%. As a woman gets older the success rates do start declining. By the age of 40, the success rate is closer to 40%, and over 40 it declines again. The risk of multiple pregnancy with in vitro fertilization is related to the number of embryos that are put back in the uterus. In most cases, for a woman under 35 two embryos are replaced, for the most part limiting the risk of multiple pregnancy to twins. As a woman gets older, because the competence of the embryo starts declining, an extra one or two embryos may be transferred to compensate for this fact and improve the chances of pregnancy.

THE DECISION TO HAVE A TUBAL REVERSAL OR IN VITRO FERTILIZATION

1. Age. As previously mentioned, the maternal age does have a significant effect on fertility. Fertility starts declining quite significantly after the age of 34-35, and then more precipitously after the age of 39-40. When it comes to expectations for

pregnancy, one has to take this into consideration. For instance, if a young woman under the age of 35 decides to have a tubal reversal done surgically, if she does not become pregnant after two or three years, she still has plenty of time to consider in vitro fertilization if she would like to. On the other hand, if someone age 39/40 decides to have a tubal reversal, if this is not successful after a couple of years, her chances for a successful pregnancy using in vitro fertilization are smaller.

2. Male Factor. It is always important for a semen analysis to be done before considering which route to go. If the semen analysis shows poor quality sperm, then by far the better option would be in vitro fertilization.
3. Social Circumstances. In some situations couples do not want to wait a couple of years for a pregnancy. This may be due to the age of other children, business and professional commitments, and other social circumstances. If this is the case, in vitro fertilization may be a more efficient option.
4. Costs. The cost of in vitro fertilization is \$4,500.00. This may be more if ICSI is required. There is also an additional drug cost, which may be anywhere in the region from \$1500.00 to \$3000.00 depending on maternal age. In total, therefore, the cost of a cycle of in vitro fertilization may be in the region of \$7000.00 to \$8,000.00.

The cost of a tubal reversal, which would include the surgeon's, anaesthetist's and facility costs can be quite variable. On average, this is between \$3000.00 and \$7,000.00.

5. Personal preference. It also depends on a particular person's willingness to undergo either a laparotomy (open surgical procedure) or in vitro fertilization. A laparotomy requires a general anaesthetic and of course, time for recovery. In vitro fertilization involves a commitment with regards to monitoring during the cycle itself, egg retrieval and embryo transfer.
6. Desire to have further children. Although having had a tubal ligation a woman may decide she wishes to have another pregnancy, she may be very sure this time that it is only once more. If she has a history of difficulty tolerating other forms of birth control – she may be reluctant to have a tubal reversal, in that after the following pregnancy she would need to confront the contraception issue again.

There are therefore pros and cons of choosing either in vitro fertilization or a tubal reversal. The main advantage of having a tubal reversal is that once it has been done, there is an ongoing chance of pregnancy every month. The success rates with both tubal reversal and in vitro fertilization are higher in the younger age group.

There is no formula to give the right answer. It is important to discuss these options carefully with your partner – and then, if necessary, with a microsurgeon and then with an IVF specialist.