SALPINGECTOMY

Surgical removal of one (unilateral) or both (bilateral) fallopian tube(s).

♀ Diagnosis  Female

Related Diagnoses:
Ovariectomy  |  Hysterectomy

About Salpingectomy

Salpingectomy is the surgical removal of one (unilateral) or both (bilateral) fallopian tube(s). Fallopian tubes allow eggs to travel from the ovaries to the uterus. This method is recommended in cases of ectopic pregnancy (Pic. 1), because there is higher risk, that next oocyte will be trapped in scarred tissue after removal of the previous one. Other indications for a salpingectomy include infected tubes (as in a hydrosalpinx) or as part of the surgical procedure for tubal cancer.

Salpingectomy has traditionally been done via a cut in abdomen (laparotomy). If only the fallopian tubes are to be removed, the surgery may be performed using keyhole surgery (laparoscopy). The surgeon will insert an instrument known as a laparoscope into the abdomen through a small cut near navel.

Salpingectomy is commonly done as part of a procedure called a salpingo-oophorectomy, where one or both ovaries, as well as one or both fallopian tubes, are removed in one operation (bilateral salpingo-oophorectomy (BSO) if both ovaries and fallopian tubes are removed). If a BSO is combined with an abdominal hysterectomy (there are different methods of hysterectomy available), the procedure is commonly called a TAH-BSO: Total Abdominal Hysterectomy with a Bilateral Salpingo-Oophorectomy. Sexual intercourse remains possible after salpingectomy, surgical and radiological cancer treatments, and chemotherapy. Reconstructive surgery remains an option for women who have experienced benign and malignant conditions.

It is already known that salpingectomy does not change subsequent patient fertility when the contralateral tube seems to be healthy.

Salpingectomy versus salpingostomy

Salpingectomy is different from and predates both salpingostomy (or fimbrioplasty) and salpingotomy (Pic. 2). The latter two terms are often used interchangeably and refer to creating an opening into the tube (e.g. to remove an ectopic pregnancy), but the tube itself is not removed. Technically, the creation of a new tubal opening (os, after the Latin word for mouth) by surgery would be a salpingostomy, while the incision into the tube to remove an ectopic is a salpingotomy. Those techniques are less invasive than salpingectomy, but their use depends on individual case.

Associated diseases

Ectopic pregnancy

Ectopic pregnancy is defined by the implantation of the fertilized ovum outside the endometrial cavity. It is a major cause of maternal mortality during the first trimester of pregnancy. Most ectopic pregnancies are located in the fallopian tubes (95%), while the ovaries and abdominal cavity are less frequently involved (1.3%).

If bleeding has already occurred, surgical intervention may be necessary. Surgeons use laparoscopy or
laparotomy to gain access to the pelvis and can either incise the affected fallopian and remove only the pregnancy (salpingostomy) or remove the affected tube with the pregnancy (salpingectomy).

Hydrosalpinx

A hydrosalpinx is a distally blocked fallopian tube filled with serous or clear fluid. The blocked tube may become substantially distended giving the tube a characteristic sausage-like or retort-like shape. The condition is often bilateral and the affected tubes may reach several centimeters in diameter. The blocked tubes cause infertility. Hydrosalpinx may be treated with salpingostomy or salpingectomy.

Endometriosis

Endometriosis is a disease in which endometrial cells migrate outside the uterine cavity and form “implants” that colonize in distal tissues. These include but are not limited to the fallopian tube, the ovary, and peritoneum (serous membrane that lines the cavity of the abdomen). Endometriosis is a frequent finding among infertility patients. Often it takes years before a patient knows she has it. In severe cases and if other treatments have not worked, the uterus, ovaries and fallopian tubes may need to be removed.

Fallopian tube cancer

Primary cancer of the fallopian tube is a rare gynecological cancer. The rarity of this cancer is due to the fallopian tube low oncogenic potential, in contrast to the vulnerability of the organ to infection. It is generally of poor prognosis. Traditional open surgery for the treatment of fallopian tube cancer involves the removal of the uterus (hysterectomy) through an incision in the abdomen. The doctor also removes both fallopian tubes and both ovaries in a procedure called a bilateral salpingo-oophorectomy.

Complications

The blind-ended remnants of the fallopian tubes may instead give rise to complications such as hydrosalpinx (fallopian tube that is blocked with fluid), infection, benign tumours, tube prolapse/torsion, and perhaps induction of ovarian cancer.

Risk factors

Hysterectomy

Women undergoing surgical removal of the uterus (hysterectomy) or sterilisation have at least a doubled risk of subsequent salpingectomy, compared with women who have not undergone a hysterectomy or a sterilisation.

Impact on fertility

The overall prognosis after salpingectomy is good. Women continue to have periods, because they still have ovaries and uterus. Removal of one fallopian tube (unilateral salpingectomy) won’t make them infertile and they still need contraception.

Bilateral salpingectomy means women can’t conceive a child naturally, because the fallopian tubes are conduits through which the egg travels toward the uterus, and it is in these tubes that most fertilization happens. However, if they still have the uterus, it may be possible to carry a baby with the help of in vitro fertilization (IVF). IVF which bypasses the need for tubal function and means that egg is fertilized in lab and then embryo is implanted into the uterus to carry the pregnancy.

Prevention

Prevention of recurrent salpingectomy
Given the uncertain nature of the mechanism, selecting a method for prevention is difficult. However, a few options may be suggested to decrease the probability of recurrence. When performing the salpingectomy, care should be taken not to leave a long stump remaining. It should be noted that, generally, it is common practice to leave a long tubal stump to minimize the risk of bleeding associated with the isthmic portion of the fallopian tube. However, given the risk of future ectopic pregnancies in those with a history of ectopic pregnancy, it may be suggested that this remnant portion should be minimized. Additionally, adequate diathermy of the proximal portion or ligation with clips may be necessary components to decrease the risk of future implantation.

**Symptoms**

Salpingectomy may most often be done to treat conditions with following symptoms:

**Ectopic pregnancy**
- abdominal or pelvic pain
- cramping on one side of the pelvis
- small amounts of unusual vaginal bleeding
- breast soreness
- nausea
- lower back pain

**Hydosalpinx**
- abdominal or pelvic pain
- infertility
- asymptomatic cases

**Therapies**

**Self therapy**

Not used.

**Conventional medicine**

Surgeon can perform Salpingectomy surgery using either open abdominal surgery (laparotomy) or laparoscopy.

**Pharmacotherapy**

During recovery, women may take appropriate analgetic drugs to relief the pain after surgery.

**Surgical therapy**

**Laparotomy**

A laparotomy is a surgical procedure involving a large incision through the abdominal wall to gain access into the abdominal cavity. Just before open abdominal surgery, patient is given general anesthesia. The surgeon will make an incision a few inches long on lower abdomen. The fallopian tubes can be seen and removed from this incision. The diseased tube is identified and freed of all peritubal adhesions (scar tissue outside but near the fallopian tube). The cornual portion of the tube is clamped and the remainder is grasped and elevated into a convenient position. Then, the opening will be closed with stitches or staples.

**Laparoscopy**
Laparoscopic surgery is a less invasive procedure. It may be performed under general or local anesthesia. A tiny incision will be made in the lower abdomen. A laparoscope is a long tool with a light and camera on the end. It will be inserted into the incision. An abdomen will be inflated with gas. This allows a surgeon to get a clear view of pelvic organs on a computer screen.

Then a few additional incisions will be made. They’ll be used to insert other tools to remove the fallopian tubes. These incisions will likely be less than half an inch long. Once the tubes are out, the small incisions will be closed.

Assisted reproduction

Salpingectomy has no influence on the woman menstrual cycle or ovulatory cycle. In case of bilateral salpingectomy, natural conceive is impossible and irreversible, so the woman has to undergo in vitro fertilization (IVF) treatment if she wishes to have a child.

Assisted reproductive technology (ART) is the technology used to achieve pregnancy in procedures such as fertility medication, artificial insemination, in vitro fertilization and surrogacy. It is reproductive technology used primarily for infertility treatments, and is also known as fertility treatment.

IVF and ART generally start with stimulating the ovaries to increase egg production. Most fertility medications are agents that stimulate the development of follicles in the ovary. Examples are gonadotropins and gonadotropin releasing hormone. After stimulation, the physician surgically extracts one or more eggs from the ovary, and unites them with sperm in a laboratory setting, with the intent of producing one or more embryos. Fertilization takes place outside the body, and the fertilized egg is reinserted into the woman’s reproductive tract, in a procedure called embryo transfer.

The fertilized eggs (embryos) are cultivated under very stringent conditions and examined every day by the embryologist to evaluate their progress. The embryos are usually cultured for 3 to 5 days, before the best one(s) are selected to be put (transferred) in to the womb.

Morphological assessment of embryo appearance at the proper, distinct time points during development is a routine procedure in embryo selection. Moreover, time-lapse technology improvements has been evaluated as an aid to identify the embryo(s) with the highest implantation potential that enable to objectively select the embryo(s) for transfer. Time-lapse embryo monitoring allows continuous, non-invasive embryo observation without the need to remove the embryo from optimal culturing conditions.

The technique of selecting only one embryo to transfer to the woman is called elective-Single Embryo Transfer (e-SET) or, when embryos are at the blastocyst stage, it can also be called elective single blastocyst transfer (eSBT). It significantly lowers the risk of multiple pregnancies, compared with e.g. Double Embryo Transfer (DET) or double blastocyst transfer (2BT).

In a natural cycle the embryo transfer takes place in the luteal phase at a time where the lining is appropriately undeveloped in relation to the status of the present Luteinizing Hormone. In a stimulated or a cycle where a “frozen” embryo is transferred, the recipient woman could be given first estrogen preparations (about 2 weeks), then a combination of oestrogen and progesterone so that the lining becomes receptive for the embryo.

Prior to the implantation, the embryo has to escape from the ZP (Zona pellucida), a process known as hatching at the blastocyst. Some embryo implantation problems in patients with recurrent implantation failure may be explained by the inability of the embryo to hatch out of its zona pellucida. In such cases, zona pellucida can be thinned in one part using the laser technique (LAZT - laser-assisted zona thinning) to improve the pregnancy and implantation rate. Media supporting implantation may also improve implantation process. The environment created for the embryos by the cytokine contained in the medium culture "in vitro" very closely resembles the "in vivo" environment (in natural conditions) and thereby improvements their ability to implant and keep itself in mucous membrane, and grow further.

Approximately 14 days after the embryo transfer the woman should have a quantitative beta hCG (Human chorionic gonadotropin). This is the first measurable indication of embryo implantation.

The rate of success for IVF is correlated with a woman’s age. More than 40 percent of women under 35
succeed in giving birth following IVF, but the rate drops to a little over 10 percent in women over 40.

Find more about related issues

Diagnoses

Ovariectomy
Surgical removal of one or both ovaries.
Learn more at: www.fertilitypedia.org/therapy/diag/ovariectomy

Hysterectomy
A surgery performed to remove a woman’s uterus.
Learn more at: www.fertilitypedia.org/therapy/diag/hysterectomy

Therapies

Egg donation
Process by which a woman donates eggs for purposes of assisted reproduction or biomedical research.
Learn more at: www.fertilitypedia.org/edu/therapies/egg-donation

ICSI
A micromanipulative fertilization technique in which a single sperm is injected directly into an egg.
Learn more at: www.fertilitypedia.org/edu/therapies/icsi

Sperm donation
The procedure in which a man (sperm donor) provides his sperm for fertility treatment.
Learn more at: www.fertilitypedia.org/edu/therapies/sperm-donation

Standard IVF
A process in which an egg is fertilised by sperm outside the body: in vitro. Own or donated gametes may be used.
Learn more at: www.fertilitypedia.org/edu/therapies/standard-ivf

Gallery

Pic
Left fallopian tube with an ectopic pregnancy in a 25 year old woman after a salpingectomy.

Pic
An illustration depicting the different surgical procedures on the fallopian tube.
Sources

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