UNILATERAL FALLOPIAN TUBE BLOCKAGE

Unilateral Tubal Blockage, Unilateral Tubal Obstruction

A condition of blocked passage through one of the Fallopian tubes.

♀ Diagnosis  ♂ Female

Related Diagnoses:
- Fallopian tube blockage
- Endometrial polyp
- Endometriosis
- Hematosalpinx
- Hydrosalpinx
- Pyosalpinx

About Unilateral fallopian tube blockage

Unilateral fallopian tube blockage represents the occlusion of one of the Fallopian tubes with the other one remaining patent. Fallopian tube blockage is one of the common causes of female infertility. In patients with one fallopian tube blocked and the other one patent, fertility may be only decreased with the patent tube still allowing for the sperm and egg to converge, but infertility may also result.

Depending on the portion of fallopian tube affected, three types of tubal blockage can be identified.

Distal occlusion

affects the end towards the ovary and the fimbriae (finger-like protrusions lining the opening of the fallopian tube into the abdominal cavity),

Midsegment

occlusion affects the middle part and

Proximal

affects the part close to the uterine cavity. Distal obstruction is commonly associated with the development of hydrosalpinx – collection of fluid in the fallopian tube, which causes it to dilate a sometimes compress other organs.

The most common cause of fallopian tube blockage is the Pelvic inflammatory disorder – inflammation and scarring in the female reproductive tract and the lesser pelvis (Pic. 1). It is usually caused by untreated sexually transmitted diseases, such as Gonorrhea or Chlamydia trachomatis infection. The scarring process can cause adhesions (fibrous tissue strips binding organs together and deforming their shape) and occlude the lumen (the cavity inside) of the fallopian tube. In less severe cases, the fimbriae can be glued together and close the opening into the abdominal cavity. Other abdominal infections, such as appendicitis (inflammation of the appendix) or peritonitis (inflammation of the membrane lining the abdominal cavity) can also cause adhesions that distort the shape of fallopian tubes and cause narrowing or occlusion of its lumen. Other possible causes include endometriosis (cysts composed of uterine mucosal tissue) lodged inside of the fallopian tubal wall, tubal tuberculosis or infections after childbirth or abortion. In rare cases, the fallopian tube may be obstructed or absent congenitally, due to abnormal embryonic development. Exposure of an embryo to diethylstilbestrol, a formerly used oral contraceptive which is now considered teratogenic (harmful to embryo development), can cause under-developed and abnormally narrow fallopian tubes.

Uncomplicated unilateral tubal obstruction may be asymptomatic, or with infertility as its only symptom. If it is complicated by hydrosalpinx (Pic. 2), it can manifest itself with lower abdominal pain. If the tubal occlusion is
due to inflammatory pelvic disease, it may be complicated by tubo-ovarian abscess – a pouch filled with pus, creating a focus of bacterial growth. Patients then present with fever, higher white blood cell count, lower abdominal or back pain and vaginal discharge. In patients with abnormal fallopian tubes, ectopic pregnancy (development of the embryo outside the uterine cavity) is more common. Tubal pregnancy may result in rupture of the tube and heavy abdominal bleeding.

The diagnosis of tubal obstruction is possible through a specific X-ray regimen, called a hysterosalpingogram (Pic. 3) when radioopaque fluid (a solution that usually appears bright white on X-ray images) is injected into the uterine cavity and subsequently fills the fallopian tubes. A hysterosalpingogram will demonstrate that tubes are open when the radioopaque dye spills into the abdominal cavity. Sonography can demonstrate tubal abnormalities such as a hydrosalpinx indicative of tubal occlusion. During surgery, typically laparoscopy, the status of the tubes can be inspected and a dye such as methylene blue can be injected in a process termed chromotubation into the uterus and shown to pass through the tubes when the cervix is occluded. Laparoscopic chromotubation has been described as the gold standard of tubal evaluation.

Fallopian tube obstruction has traditionally been treated with fallopian tubal surgery (tuboplasty) with a goal of restoring patency to the tubes and thus possibly normal function. A common modern day method of treatment is in vitro fertilization as it is more cost-effective, less invasive, and results are immediate. Treatments such as assisted reproductive technologies are used more often than surgery.

**Associated diseases**

- gonorrhoea
- chlamydia trachomatis infection
- pelvic inflammatory disease (PID)
- tubo-ovarian abscess
- hydrosalpinx
- septic abortion
- appendicitis
- peritonitis
- endometriosis
- tuberculosis

**Complications**

**Tubo-ovarian abscess**

In cases of pelvic inflammatory disease, the wall of the altered Fallopian tube may form a pouch filled with pus, which may eventually burst, resulting in sepsis. Due to the large amount of bacteria contained in the pus, the patients present with fever, higher white blood cell count, lower abdominal pain and may present with vaginal discharge.

**Ectopic pregnancy**

In patients with abnormal Fallopian tubes, the chances of an ectopic pregnancy (Pic. 4) are higher. The fertilized egg is less likely to pass through the tube to the uterine cavity and may instead lodge in the tubal wall. The subsequent embryo development results in arteries of the tube being eroded and the condition may result in tubal wall rupture and heavy internal bleeding.

**Hydrosalpinx**

A distally blocked Fallopian tube filled with serous (yellowish or transparent fluid, consisting of water and proteins) or clear fluid. The blocked tube may become substantially distended giving the tube a characteristic sausage-like or retort-like shape. Hydrosalpinx can cause lower abdominal pain and may compress surrounding organs.

**Risk factors**

- pelvic inflammatory disease
- septic abortion
- tubal endometriosis
- tubal tuberculosis
- abdominal infections
- adhesions in the lesser pelvis or abdominal cavity
- in utero diethylstilbestrol exposure

**Impact on fertility**
Fertility may vary in patients with only one patent Fallopian tube. Generally, pregnancy with unilateral tubal obstruction is possible, if the other Fallopian tube is still patent. Passage through the tube may be influenced by changes to its lumen, surrounding fibrous adhesions, its blood circulation and the ability of the adjacent ovary to ovulate. Some patients may require assisted reproduction treatment to achieve a pregnancy although the remaining Fallopian tube is seemingly unobstructed.

**Prevention**

The most effective way to prevent unilateral tubal obstruction is an effective prevention and treatment of sexually transmitted infections, which are the leading cause of tubal obstruction. To avoid these infections, such as Chlamydia or Gonorrhoea, it is advised to use barrier contraceptive methods, such as a condom, during sexual intercourse, and to limit the number of sexual partners. If the patient has already contracted a sexually transmitted infection, antibiotic treatment should be administered as soon as possible to avoid pelvic inflammation and scarring in the Fallopian tubes.

**Symptoms**

- lower back or abdominal pain
- infertility or lower fertility
- vaginal discharge

**Therapies**

**Self therapy**

For fallopian tube obstruction, alternative medicine has been used as a form of fertility treatment. A number of various approaches is available

**Herbal therapy**

Many herbs are believed to induce healing of the fallopian tubes. These include goldenseal root, ginger root, hawthorn, peony root or wild yam root. Chinese herbal medicine is also used to clear the hydrosalpinx and other obstructions of the tube. Chinese traditional methods include herbal medications, e.g. Fuyan pill, or herbal enemas.

**Acupuncture**

Another traditional Chinese approach that is used to promote the healing of fallopian tubes

**Physical exercise and massages**

Exercises such as certain stretching exercises, yoga postures or energy exercises may help clear the obstruction of the fallopian tube. Additionally, a number of massage techniques exists, that may help improve the blood circulation and promote the healing of fallopian tubes.

**Conventional medicine**

Fallopian tube obstruction has traditionally been treated with fallopian tubal surgery (tuboplasty) with a goal of restoring patency to the tubes and thus possibly normal function. A common modern day method of treatment is in vitro fertilization as it is more cost-effective, less invasive, and results are immediate. Treatments such as assisted reproductive technologies are used more often than surgery. Pharmacotherapy is of limited use in the treatment of already existent Fallopian tube obstruction, but especially in the case of pelvic inflammatory disease, treatment with antibiotics can be used effectively to prevent the occlusion from forming.

**Pharmacotherapy**

Pharmacotherapy is generally not used to treat congenital tubal obstruction, as by the time of the
diagnosis, there is usually no process that can be pharmacologically averted. Treatment with antibiotics can, however, be used in women with the risk of developing tubal obstruction due to Pelvic inflammatory disorder.

**Surgical therapy**

**Tuboplasty**

Tuboplasty refers to a number of surgical operations that attempt to restore patency and functioning of the Fallopian tube(s) so that a pregnancy could be achieved. As tubal infertility is a common cause of infertility, tuboplasties were commonly performed prior to the development of effective in vitro fertilization (IVF).

Different types of tuboplasty have been developed and can be applied by laparoscopy (via small punctures in the abdominal wall) or laparotomy (via an incision in the abdominal wall). They include lysis of adhesions (fibrous tissue inside the fallopian tube, or attaching it to other structures), fimbrioplasty (repairing the fimbriated end of the tubes), salpingostomy (creating an opening for the tube), resection and reanastomosis (removing a piece of blocked tube and reuniting the remaining patent parts of the tube), and tubal reimplantation (reconnecting the tube to the uterus).

Further, proximal tubal occlusion (closer to the uterine opening of the tube) can be overcome by unilateral (on one side) or bilateral (on both sides) selective tubal cannulation, a procedure where a thin catheter is advanced through the proximal portion of the Fallopian tube to examine and possibly restore tubal patency, salpingostomy (creating an opening for the tube) or falloposcopy (inspection of the Fallopian tubes through a micro-endoscope).

**Assisted reproduction**

If conservative medical treatments fail to achieve a pregnancy, the physician may suggest the patient to use the methods of assisted reproduction. Assisted reproduction technologies (ART) are today used more often than surgery, as they are less invasive and more reliable. In case of unilateral tubal obstruction, intrauterine insemination (IUI) may be used to treat infertility, however its outcomes are subject to discussion. In vitro fertilization (IVF) with the patient’s own ova (eggs) is a reliable method of achieving pregnancy in infertile women with unilateral tubal blockage.

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.

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**

**Fallopian tube blockage**
An obstruction prevents the egg or sperm from traveling down the tube, thus making fertilization impossible.
Learn more at: [www.fertilitypedia.org/therapy.diag/fallopian-tube-blockage](http://www.fertilitypedia.org/therapy.diag/fallopian-tube-blockage)
Endometrial polyp
The finger like overgrowths attached to the inner wall of the uterus that extend into the uterine cavity which are made of endometrial tissue.
Learn more at: www.fertilitypedia.org/therapy/diag/endometrial-polyp

Endometriosis
A state in which pieces of the tissue alike to the lining of the uterus (endometrium) grow in other parts of the body.
Learn more at: www.fertilitypedia.org/therapy/diag/endometriosis

Hematosalpinx
Hematosalpinx is a medical condition involving bleeding into the fallopian tube.
Learn more at: www.fertilitypedia.org/therapy/diag/hematosalpinx

Hydrosalpinx
A hydrosalpinx is an abnormal pouch containing liquid in a fallopian tube.
Learn more at: www.fertilitypedia.org/therapy/diag/hydrosalpinx

Pyosalpinx
A distally blocked Fallopian tube filled with pus.
Learn more at: www.fertilitypedia.org/therapy/diag/pyosalpinx-do-rf

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

Fallopian tubes removal
Surgical removal of a Fallopian tube(s).
Learn more at: www.fertilitypedia.org/edu/therapies/fallopian-tubes-removal-1

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

Pharmacotherapy of partial tube blockage
An advanced therapy with drugs triggering the ovulation, which is used in cases of fallopian tube blockage on one side.
Learn more at: www.fertilitypedia.org/edu/therapies/pharmacotherapy-of-partial-tube-blockage

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
The site of bacterial infection, usually Neisseria gonorrhoea (Gonorrhoea) and Chlamydia trachomatis (Chlamydia), which causes the pelvic inflammatory disease.

Ultrasound examination showing a hydrosalpinx: the dark (hypoechoic) tubular structure represents the fallopian tube, dilated by the accumulated fluid.

In this hysterosalpingogram, the contrast fluid is seen as black. The contrast fluid is seen spilling into the abdominal cavity on both sides. Therefore, both of the Fallopian tubes are unobstructed.

Most common sites of ectopic pregnancy, compared to the site of normal pregnancy.

Sources

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