ASPERMIA

*Complete Absence Of Semen; Anejaculation*

Male diagnosis connected with male infertility characterised by the complete absence of semen.

**Related Diagnoses:**
- Azoospermia
- Erectile dysfunction
- Anejaculation
- Ejaculatory disorders
- Retrograde ejaculation
- Oligozoospermia
- Obstructive azoospermia
- Teratospermia
- Hypoandrogenism

**About Aspermia**

Aspermia is diagnosis characterized by complete absence of semen which means that men with aspermia are not able to ejaculate at all. The semen volume is zero.

It is crucial not to mistake aspermia for azoospermia. Aspermia refers to complete absence of semen at ejaculation whilst azoospermia refers to complete absence of sperm in semen and it is one of the major causes of male infertility.

Aspermia is a very rare condition in which men cannot ejaculate, and thus to produce a semen sample for example even for seminal analysis. However, this may occur despite of the fact being able to get an erection and having normal coitus and orgasm without other problems.

While anejaculation is sometimes due to a psychological problem (when a man cannot achieve an orgasm despite of being able to get an erection), the most common reason for aspermia diagnosis is the condition of retrograde
ejaculation or ejaculatory duct obstruction – e.g. mechanical obstruction in the testes.

**Retrograde ejaculation**

Retrograde ejaculation means failure of urinary bladder neck closure and thus the backward ejaculation of semen into the urinary bladder instead of forward. This is diagnosed from orgasm history without ejaculation (a ‘dry run’). The diagnosis is confirmed by post-ejaculatory urine analysis; significant concentration of sperm in the urine indicates the problems of the bladder neck sphincter.

However, the sperm may be recovered from the urine and used by artificial reproduction techniques (ART) to fertilize the eggs and make embryo. Usually, in men with retrograde ejaculation, the MESA (microscopic epididymal sperm aspiration) technique is used to retrieve the sperm for its use in ART.

**Ejaculatory duct obstruction (EDO)**

Ejaculatory duct obstruction is a condition characterized by the obstruction of one or both ejaculatory ducts. In presence of bilateral ejaculatory duct obstruction (obstruction of both ejaculatory ducts) we speak about Complete EDO; in case of obstruction of only one ejaculatory duct, we speak about partial EDO, the indication for evaluation of partial EDO, however, are controversial.

The level of ejaculatory duct obstruction may be evaluated by finding enlarged palpable seminal vesicles on rectal examination. The diagnosis itself is suggested when noticing following characteristics: If the ejaculate volume is less than 1 mL and pH less than 7.0 and if it contains no sperm or fructose. And it is confirmed by Transrectal Ultrasonography of the Prostate (TRUS) evaluation, vosography or transrectal injection of the seminal vesicles with contrast media.

Mechanical obstructions may be corrected surgically, however if there is no sperm production in testes at all, this fact will cause infertility. Some techniques of artificial reproduction may be helpful to achieve fertilization, however.

**Associated diseases**

- retrograde ejaculation
- ejaculatory duct obstruction
- oligozoospermia
- hypospermia
• azoospermia

Complications

• infertility

Risk factors

• prostate, bladder or abdomen surgery to the prostate, bladder or abdomen
• prostatitis (inflammation of the prostate gland)
• inflammatory processes in general
• congenital diseases
• multiple sclerosis
• parkinson disease (long-term degenerative disorder of the central nervous system)
• diabetes
• spinal cord injuries
• partial blocking to the urethra
• sexually transmitted diseases (STD)
• prostate cancer treatment
• testicular trauma

Impact on fertility

Mechanical obstruction of ejaculatory ducts or epididymal obstruction blocks the outflow of ejaculate or in case of retrograde ejaculation; the ejaculate flows backward to the urinary bladder. Thus, the ejaculation during intercourse is not possible, the ejaculate is not present and the sperm does not reach the egg in uterus. The chance to conceive naturally is minimal without surgery to release the obstruction or without the help of ART.

Prevention

Episodes of urinary tract infections may increase the risk of ejaculatory or epididymal obstruction; thus avoiding or minimalizing infections via antibiotic treatment when the infection occurs, may be possible prevention. However, there is no prevention to retrograde ejaculation or ejaculatory duct obstruction.
Symptoms

- infertility
- anejaculation (dry run) during orgasm
- hazy urine after intercourse
- blood in semen (if it is present) or in the urine
- pain in scrotum, urinary pain, genital pain
- other symptoms vary depending on the underlying disease

Therapies

Self therapy

In traditional Chinese medicine, semen is regarded as a kind of body essence and it is claimed that kidneys and liver play an important role in storing the function of male reproductive organs. Thus, blood in semen is closely related to the condition of the kidneys and liver. Herbal treatment for blood in the semen is used as a treatment and it is guided by principles for bleeding symptoms.

Conventional medicine

The antibiotic treatment may be used to treat infection of the urinary tract. Usually, the surgical way to treat the retrograde ejaculation or Edo is most common approach.

Pharmacotherapy

Antibiotic treatment in inflammatory processes

Alpha-agonists such as ephedrine may be used before coitus to achieve normal ejaculation in men with partial neurological lesions (such as diabetes mellitus).

Sodium bicarbonate is used to control urinary pH and osmolarity and to minimize toxic effect to sperm cells in case when they are recovered from post orgasmic urine for following ART techniques of fertilization.

Surgical therapy
To treat ejaculatory duct obstruction, the method of Transurethral Resection of the Ejaculatory Ducts (TURED) is used and it has become a standard procedure in this diagnosis. The resection may vary depending on severity of the conditions of the obstruction. It may vary from incising the cyst to relieve extrinsic compression on the ducts) to deep resection along the ducts in case of long post-inflammatory obstruction. Extensive resection of ejaculatory ducts may end by opening ejaculatory ducts into the urethra followed by urinary reflux to the vasa; thus the extensive resection should be undertaken with caution.

**Assisted reproduction**

If conservative medical treatments fail to achieve a full term pregnancy, the physician may suggest the patient undergo in vitro fertilization (IVF). 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.

Intracytoplasmic sperm injection (ICSI) is beneficial in the case of male factor infertility where sperm counts are very low or failed fertilization occurred with previous IVF attempt(s). The ICSI procedure involves a single sperm carefully injected into the center of an egg using a microneedle. With ICSI, only one sperm per egg is needed. Without ICSI, you need between 50,000 and 100,000.

Men who ejaculate no sperm, because of blocked tubes in their testes, or because of a genetic condition that prevents their sperm being released, require some form of surgical sperm retrieval to enable ICSI to take place. Epididymal sperm obtained by microsurgical aspiration (MESA) or percutaneous sperm aspiration (PESA) and testicular sperm obtained by surgical excision (TESE) or percutaneous aspiration (TESA) are used in ICSI treatment. Alternatively, the retrieved sperm can be cryopreserved for use in future sperm injection attempts. If all efforts to extract vital sperm cells fail, then donated ones may be recommended.
Find more about related issues

Diagnoses

**Azoospermia**
Complete absence of sperm in the ejaculate of a man.
Learn more at: [www.fertilitypedia.org/therapy/diag/azoospermia](http://www.fertilitypedia.org/therapy/diag/azoospermia)

**Erectile dysfunction**
The inability (that lasts more than 6 months) to develop or maintain an erection of the penis during sexual activity.
Learn more at: [www.fertilitypedia.org/therapy/diag/erectile-dysfunction](http://www.fertilitypedia.org/therapy/diag/erectile-dysfunction)

**Anejaculation**
The pathological inability to ejaculate in males, with (orgasmic) or without (anorgasmic) orgasm.
Learn more at: [www.fertilitypedia.org/therapy/diag/anejaculation](http://www.fertilitypedia.org/therapy/diag/anejaculation)

**Ejaculatory disorders**
A class of sexual disorders defined as the subjective lack of normal ejaculation.
Learn more at: [www.fertilitypedia.org/therapy/diag/ejaculatory-disorders](http://www.fertilitypedia.org/therapy/diag/ejaculatory-disorders)

**Retrograde ejaculation**
The semen, which would normally be ejaculated via the urethra, is redirected to the urinary bladder.
Learn more at: [www.fertilitypedia.org/therapy/diag/retrograde-ejaculation](http://www.fertilitypedia.org/therapy/diag/retrograde-ejaculation)

**Oligozoospermia**
Semen with a low concentration of sperm and is a common finding in male infertility.
Learn more at: [www.fertilitypedia.org/therapy/diag/oligozoospermia](http://www.fertilitypedia.org/therapy/diag/oligozoospermia)

**Obstructive azoospermia**
Absence of sperm in the ejaculate despite normal spermatogenesis, caused by an obstruction of the genital tract.
Learn more at: [www.fertilitypedia.org/therapy/diag/obstructive-azoospermia](http://www.fertilitypedia.org/therapy/diag/obstructive-azoospermia)
**Teratospermia**
Teratospermia is a condition characterized by the presence of sperm with abnormal morphology that affects fertility in males.
Learn more at: [www.fertilitypedia.org/therapy/diag/teratospermia](http://www.fertilitypedia.org/therapy/diag/teratospermia)

**Hypoandrogenism**
A medical condition characterized by not enough androgenic activity in the body.
Learn more at: [www.fertilitypedia.org/therapy/diag/hypoandrogenism](http://www.fertilitypedia.org/therapy/diag/hypoandrogenism)

**Organs**

**Bulbourethral gland**
Bulbourethral gland is one of two small exocrine glands in the reproductive system of male.
Learn more at: [www.fertilitypedia.org/edu/organs/bulbourethral-gland](http://www.fertilitypedia.org/edu/organs/bulbourethral-gland)

**Male urethra**
A tube that connects the urinary bladder to the urinary meatus for the removal of fluids from the body.
Learn more at: [www.fertilitypedia.org/edu/organs/male-urethra](http://www.fertilitypedia.org/edu/organs/male-urethra)

**Prostate**
A walnut-sized structure that is located below the urinary bladder in front of the rectum.
Learn more at: [www.fertilitypedia.org/edu/organs/prostate](http://www.fertilitypedia.org/edu/organs/prostate)

**Seminal vesicles**
One of two simple tubular glands responsible for the production of about 60 percent of the fluid that ultimately becomes semen.
Learn more at: [www.fertilitypedia.org/edu/organs/seminal-vesicles](http://www.fertilitypedia.org/edu/organs/seminal-vesicles)

**Testes**
Male gonads which produce both sperm and androgens, such as testosterone, and are active throughout the reproductive lifespan of the male.
Learn more at: [www.fertilitypedia.org/edu/organs/testes](http://www.fertilitypedia.org/edu/organs/testes)

**Urinary bladder**
Hollow, expandable organ serving as a reservoir for urine prior to its expulsion from the body.
Learn more at: [www.fertilitypedia.org/edu/organs/urinary-bladder](http://www.fertilitypedia.org/edu/organs/urinary-bladder)

**Biological control**
**Progesterone**
Steroid hormone, secreted by the ovaries, whose function is to prepare the uterus for the implantation of a fertilized ovum and to maintain pregnancy.
Learn more at: [www.fertilitypedia.org/edu/biological-control/progesterone](http://www.fertilitypedia.org/edu/biological-control/progesterone)

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**Reproductive functions**

**Fertilization**
The fusion of an ovum with a sperm to initiate the development of a new individual organism.
Learn more at: [www.fertilitypedia.org/edu/reproductive-functions/fertilization](http://www.fertilitypedia.org/edu/reproductive-functions/fertilization)

**Spermatogenesis**
Process in which spermatozoa are produced from male primordial germ cells in testicles by way of mitosis and meiosis.
Learn more at: [www.fertilitypedia.org/edu/reproductive-functions/spermatogenesis](http://www.fertilitypedia.org/edu/reproductive-functions/spermatogenesis)

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**Risk factors**

**Low level of testosterone**
An abnormally low testosterone production which may occur because of testicular or hypothalamic-pituitary dysfunction.
Learn more at: [www.fertilitypedia.org/therapy/rf/low-level-of-testosterone](http://www.fertilitypedia.org/therapy/rf/low-level-of-testosterone)

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**Symptoms**

**Anorgasmia**
A type of sexual dysfunction in which a person cannot achieve orgasm despite adequate stimulation.
Learn more at: [www.fertilitypedia.org/edu/symptoms/anorgasmia](http://www.fertilitypedia.org/edu/symptoms/anorgasmia)

**Lack of semen with ejaculation**
Aspermatia is the complete lack of semen with ejaculation.
Learn more at: [www.fertilitypedia.org/edu/symptoms/lack-of-semen-with-ejaculation](http://www.fertilitypedia.org/edu/symptoms/lack-of-semen-with-ejaculation)

**Sexual frustration**
A frustration caused by a discrepancy between a person's desired and achieved sexual activity.
Learn more at: [www.fertilitypedia.org/edu/symptoms/sexual-frustration](http://www.fertilitypedia.org/edu/symptoms/sexual-frustration)
Small testes
Abnormally small testicular volume.
Learn more at: www.fertilitypedia.org/edu/symptoms/small-testes

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

MESA
A microsurgical procedure to harvest sperm from the single epididymal tubule (epididymis), used in the case of obstructive azoospermia.
Learn more at: www.fertilitypedia.org/edu/therapies/mesa

Micro TESE
Microsurgical method used to identify areas of sperm production within the testes with the aid of optical magnification.
Learn more at: www.fertilitypedia.org/edu/therapies/micro-tese

PESA
Sperm aspiration procedure in which a needle is inserted into the epididymis in order to retrieve sperm.
Learn more at: www.fertilitypedia.org/edu/therapies/pesa

Postejaculatory urine sperm isolation - with ICSI
A non-invasive method of the sperm isolation in the case of retrograde ejaculation.
Learn more at: www.fertilitypedia.org/edu/therapies/postejaculatory-urine-sperm-isolation-with-icsi-1

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](http://www.fertilitypedia.org/edu/therapies/standard-ivf)

**TESE**
Removal of a small portion of testicular tissue in order to extract a few viable sperm. 
Learn more at: [www.fertilitypedia.org/edu/therapies/tese](http://www.fertilitypedia.org/edu/therapies/tese)

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**Sources**