

Diagnosis of Azoospermia, its Treatment, Types and Causes

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DESCRIPTION

The medical disorder known as azoospermia affects men whose sperm is absent from their semen. Although many of its types are treatable by medicine, it is often connected to male infertility. Azoospermia affects 1% of males in the human population and may be present in up to 20% of cases of male infertility in Canada.

Diagnosis

Azoospermia is typically found after an investigation into infertility. When the seminal specimen after centrifugation displays no sperm under the microscope, it is determined based on two distinct semen analysis evaluations and requires additional investigation. A history, a physical examination that includes a comprehensive assessment of the testicles and scrotum, lab testing, and potentially imaging are all included in the study. History covers general well-being, sexual well-being, previous fertility, libido, and sexual behaviour. It is important to investigate past exposure to a variety of substances, including recreational drugs (marijuana, alcohol), medical agents like hormone/steroid therapy, Selective Serotonin Reuptake Inhibitors (SSRIs), antibiotics, 5-ASA inhibitors (sulfasalazine), alpha-blockers, 5-alpha-reductase inhibitors, chemotherapeutic agents, pesticides, and heat exposure of the testes. It is necessary to extract a medical history of genital system surgeries. Examining the family history is necessary to seek for genetic anomalies.

Treatment

Testicular azoospermia is typically permanent, whereas pre- and post-testicular azoospermia are frequently reversible. The former offers up options for direct management of this issue by requiring consideration of the azoospermia's cause. So, men who have hyperprolactinemia-induced azoospermia may resume sperm production after receiving treatment, and men whose sperm production has been inhibited by exogenous androgens should resume sperm production after stopping their consumption. Gonadotropin therapy can be anticipated to stimulate sperm production in cases where the testes are healthy

but unstimulated. *In Vitro* Fertilization (IVF) with Intra Cytoplasmic Sperm Injection (ICSI), which enables effective fertilisation even with immature sperm or sperm retrieved straight from testicular tissue, has been a significant improvement in recent years. If it is possible to salvage sperm from the testes, IVF-ICSI enables conception in couples where the man has irreversible testicular azoospermia. As a result, males who with non-mosaic Klinefelter's disease have conceived through IVF-ICSI. When azoospermia and cryptorchism were present and sperm were extracted from the testicles (TESE), pregnancies could be conceived.

Various methods are available for males who have post-testicular azoospermia. IVF-ICSI or surgery may be utilised to treat obstructive azoospermia, and individual circumstances are taken into account when making this decision. Retrograde ejaculation may benefit from medication.

Types

Obstructive azoospermia: A blockage or missing link in the epididymis, vas deferens, or somewhere else along human reproductive system is what is meant by obstructive azoospermia. Even though human are making sperm, it is being prevented from leaving patient body, leaving no detectable amount of sperm in patient semen.

Nonobstructive azoospermia: If people have this sort of azoospermia, human sperm production is weak or nonexistent as a result of problems with the testicles' structure or function or other factors.

Causes

The different kinds of azoospermia are directly related to the aetiology of the condition. In other words, causes may result from sources that are not obstructions. Azoospermia is most frequently caused by obstructions in the vas deferens, epididymus, or ejaculatory ducts.

The following issues can result in obstructions in these areas:

- Trauma
- Infections
- Inflammation

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- Pelvic procedures done in the past
- The formation of a cyst
- The cystic fibrosis gene mutation, which either prevents the formation of the vas deferens or results in aberrant

development where the vas deferens becomes clogged with viscous secretions, preventing the flow of semen.