DEFINITION

1. This is a condition in which there is an inability to father children.

GENERAL DISCUSSION

2. At least 10% of married couples are infertile, the responsible partner being male or female in about equal proportions, suggesting that 5% of males (and also females) are infertile.

3. The commonest reason for infertility is a testicular lesion, but there are also non-testicular causes.

4. The normal volume of the ejaculate is 1 ml or more, averaging 4 ml. The normal sperm count is over 50 million per ml, usually being well over 100 million per ml. At least 60%, and usually 80% of the sperm should be mobile and of normal morphology. Complete absence of sperm is referred to as **azoospermia; oligospermia** refers to counts below 50 million per ml. Oligospermia is associated with greatly reduced fertility and fertility is very rare with counts below 10 million sperm per ml.

5. Testicular biopsy is often needed.

AETIOLOGY

6. **Testicular Causes**

6.1. Scarring by intra-testicular obstructions, for example gross destruction of testicular tissue by granulomatous orchitis, severe mumps orchitis, gumma, or torsion is followed by extensive scarring and atrophy, and if the lesion is bilateral, azoospermia. None of these is common however, especially in the bilateral form, and the scarring found in cases of sterility generally consists of multiple scattered small scars in an otherwise normal testis. The cause of this latter type of scarring is unknown, but is presumed to be some mild unrecognised infection in childhood.

6.2. Defective spermatogenesis (depression of sperm production) is usually reversible. Possible causes of partial or complete arrest of spermatogenesis are

6.2.1. **General Causes**: Fever, malnutrition, many poisons, uraemia, or indeed any severe illness.

6.2.2. **Specific Damage**: By cadmium, local x-rays, anti-mitotic drugs.

6.2.3. **Temperature**: Spermatogenesis ceases at normal body temperature. Hot baths and tight underwear depress spermatogenesis only enough to matter in men with low sperm counts already, but varicocele can produce azoospermia.

6.2.4. **Endocrine Disorders**: Pituitary failure usually leads to defective spermatogenesis. Most often the pituitary failure is caused by oestrogen excess (for example resulting from oestrogen given for the treatment of prostatic cancer, or associated with the rise in oestrogen resulting from liver disease such as cirrhosis).

6.2.5. **Germ cell defects** which are usually congenital, the two main forms being Klinefelter's syndrome (a congenitally determined chromosomal abnormality) and germ-cell aplasia (syn: chromatin-negative Klinefelter's; del Castillo Syndrome) (a congenital non-chromosomally determined absence of germ cells of unknown cause).

6.2.6. **Cryptorchidism** - a condition in which one or both testes have never descended into the scrotum.

7. **Non-Testicular Causes**

7.1. Impotence (ie: inability to achieve orgasm). This is usually psychological, but may be drug-induced, endocrine, neural, or vascular.

7.2. Abnormalities interfering with coitus such as penile deformities and extreme obesity.

7.3. Obstruction to the outflow pathway. Part of the vas deferens may be congenitally absent, or it may be interrupted by trauma including operations, usually for hernia. Sterilisation by bilateral vasectomy is, of course, included here. Obstruction of epididymal tubules may follow epididymitis, and lesions of the proximal urethra (stricture or the trauma of prostatectomy) may result in discharge of semen into the bladder. This is the usual cause of aspermia (total absence of ejaculate, as opposed to azoospermia which is the absence of sperm in the ejaculate). Obstructive lesions have very little effect on the testis itself, no matter how long the duration, that is obstructive lesions do not adversely affect spermatogenesis.

7.4. The azoospermia in cystic fibrosis is obstructive in nature.

CONCLUSION

8. **Male sterility** is a condition in which there is an inability to father a child. There are many causes which are listed above.

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December 1992