



Forms of Male Infertility



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MALE INFERTILITY

Inability of a male to achieve a pregnancy in a fertile female.

Classification of male infertility

Lagerlof classified the causes of sub- or infertility of the bull .

→ Three main categories:

- 1. Impotentia coeundi,**
- 2. Impotentia generandi,**
- 3. miscellaneous causes.**

1. Impotentia coeundi

“It is defined as the reduced to complete lack of sexual desire and ability of male to copulate.”

OR

“The condition of the male causing failure of normal service is called Impotentia coeundi.”

Causes of Impotentia coeundi

- Lack of libido
- Failure of erection
- Diseases of joints, muscles, nerve, bone, and tendons
- Tumour of the penis and prepuce

- **Diseases of the penis and prepuces:**
 - Rupture of the corpus cavernosum penis
 - Deviation of the penis
 - Balanoposthitis
 - Pizzle rot
 - Phimosis
 - Paraphimosis
 - Diphallus
 - Priapism
 - Hypospadias and epispadias

- **Other causes:**

- Hernia

- Premature erection

- Loss of sensory innervations of the glans penis

- Urinary calculi

2. Impotentia generandi

“It is defined as the inability or reduced ability of a male to fertilize after normal service.”

a. With apparently normal semen

- **Inherited sperm defects**
 - Diadem defect
 - Knobbed sperm
 - Enzymatic disturbances
 - Chromosomal defects
- **Infectious diseases**

b. With apparently abnormal semen

- Cryptorchidism
- Inguinal hernia
- Imperfect testicular descent
- **Testicular hypoplasia**
- **Testicular degeneration**
- Testicular fibrosis
- Testicular neoplasm

b. With apparently abnormal semen

- Epididymitis
- Spermiostasis
- Segmental aplasia
- Pathology of accessory glands
- Congenital defects
- Scrotal torsion
- Orchitis
- Testicular calcification

Impotentia coeundi

- **1. Lack of libido**
- **Libido = Sexual desire (sex drive)** is a critical component of fertility.
- Not depends on = scrotal circumference, semen quality, body weight, growth rate or masculinity.
- Genetic in nature but the environment modify it.
- Affected by Nutrition, systemic diseases, age, management practices etc.

2. Failure of erection

- Erection = blood is pumped into corpus cavernosum and ischiocavernosus muscles contract which occlude the veins → raising the pressure within the penis.
- veins are unable to drain blood → penis becomes rigid and erect.
- Failure of erection :
 - **abnormal venous drainage or**
 - **occlusion of the longitudinal canals of the penis.**

3. Diseases of joints, muscles, nerve, bone and tendons

- **Coxitis (inflammation of hip joints)** is more commonly found in dogs and boars compared to bulls and stallions.
- **Gonitis (inflammation of the stifle [femorotibial] joint)** is common in bulls.
- Polyarthrits may occur in swine due to swine erysipelas, mycoplasma or other organisms.
- Over-grown claws or hooves, foot rot, tendonitis, arthritis, tarsitis, dropped hock
- (resulting from traumatic injury of peroneal nerve), myosotis etc cause animals to failure to
- mount.

- **'honeymoon back'** = rupture of lumbodorsal fascia → **pain** → forelimb cannot be raised during mounting **(young bulls)**
- Diagnosis → palpation of crepitus in the lumbodorsal region
→ presence of swollen muscle masses protruding through the fascia.

- In bulls, **Spastic syndromes (progressive hind limb paralysis) interfere with copulation due to involuntary muscle**
- contraction or spasm. In most bulls the signs are mild and persist for the whole life with
- occasional period of occurrence. Spastic syndrome is progressive, and because of the possibility
- of genetic transmission, animals (particularly bulls used for artificial insemination) should be
- eliminated as soon as a positive diagnosis is made.

4. Tumors of the penis and prepuce

- The three most common tumours of the penis are
 1. Squamous cell carcinoma of horses,
 2. Fibropapilloma of bulls and
 3. Transmissible Venereal Tumour (**TVT**) of dogs.

Squamous cell carcinoma

- It mainly affects → Old horses
- Equal frequency in castrated and stallions.
- **Etiology** → carcinogenic properties of the smegma accumulations in the horse.
- They often **ulcerate** and usually **bleed at the time of service** and produce a **fetid preputial discharge**.

Squamous cell carcinoma



Fibropapilloma (fibroma)

- Caused → bovine papilloma virus
- Transmitted by coitus
- Benign tumour of bulls
- Young bulls are most commonly affected.
- Single or multiple, firm, cauliflower like growths.
- Intact and castrated animals,
- Haemorrhage and ulceration in penis.

Fibropapilloma (fibroma)

Fig.(9):Fibropapilloma of the penis of young Holstein bull after tranquilization and exposure of the penile mass (A&B).



Transmissible venereal tumour (TVT)

- Synonyms: **Infectious sarcoma, venereal granuloma (VG), transmissible lymphosarcoma or Sticker tumor.**
- **Benign tumour of the dog that mainly affects the external genitalia.**
- Commonly seen in sexually active dogs.
- Spread → through mating.
- Does not often metastasize, except in puppies and immunocompromised dogs.
- Metastasis → regional lymph nodes, skin, brain, eye, liver, spleen, testicle and muscle.
- TVT cells → abnormal number of chromosomes (57 to 64 , average 59)

TVT in male



Transmissible venereal tumour (TVT)

Clinical signs:

Lesions usually localize on glans penis, preputial mucosa or on the bulbus glandis.

Cauliflower-like appearance.

Signs : haemorrhagic discharge from the prepuce and in some cases urinary retention due to blockage of the urethra.

- The discharge can be confused with urethritis, cystitis, or prostatitis.
- Tumoral masses often protrude from the prepuce and phimosis can be a complication.

Transmissible venereal tumour (TVT)

- **Treatment:** surgery, radiotherapy, immunotherapy and chemotherapy
- Surgery = small, localized TVTs, (50 - 68%)
- **Chemotherapy is the most effective.**
- **Vincristine sulfate** is the most frequently used
- Administered **weekly** at a dose of **0.5 to 0.7 mg/m² of body surface area or 0.025 mg/kg, IV.**

5. Diseases of the penis and prepuce

1. Rupture of the corpus cavernosum penis (ruptured, fractured or broken penis)

- Rupture of i. corpus cavernosum
ii. Tunica albuginea**

**cause : Abnormally high pressures within the
CCP**

- **clinical signs:** shortness of gait, preputial oedema and prolapse of penis, Haemorrhage, haematoma
- **Treatment**
- Sexual rest, Antibiotic therapy
- Daily massage of the affected area
- **Surgical treatment**
- Evacuation of the haematoma.
- At many times the site of rupture of the tunica albuginea is identified and closed.
- Affected bulls should be teased regularly.

Persistence of the penile frenulum

- Results from failure of the separation of the penis and prepuce
- band of tissue extends from near the ventral tips of the glans penis to the prepuce.
- This band of tissue prevents normal extension and intromission.
- At birth penis and prepuce of bulls are fused and ventrally they are united by a band of connective tissue called the frenulum.
- During erection, ventral bending of the penis occur in affected animals.
- **prevents intromission in *Bos taurus* breed but may not interfere with breeding in *Bos indicus* bulls due to the length of the prepuce.**
- **Congenital & heritable**

Penile deviation (Phallocampsis)

- **Spiral or corkscrew**
- **Ventral or rainbow deviation**
- **S-shaped deviation**
- **Lateral deviations**

- **Balanoposthitis**

Balanoposthitis is an inflammation of the glans penis and the prepuce.

- **Pizzle rot /ulcerative posthitis/ Sheath rot →**
Etiology: Pizzle rot is the result of an interaction between a bacteria and some other factor.

Corynebacterium renale

- **Phimosis** → inability to protrude the penis beyond the preputial orifice
- **Paraphimosis** → penis protrudes from the preputial sheath and cannot be replaced to its normal position.
- **Diphallus** → double penis.
- **Priapism** → the erect penis does not return to its flaccid state, despite the absence of both physical and psychological stimulation.
- **Hypospadias** → urethral opening at the underside of the penis or the upper side of the penis
- **Epispadias** → urethral opening at the upper side of the penis



THANK YOU