

Bovine Infertility

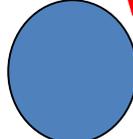
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Fertility relates to

- Follicle development and maturation
- Estrus onset
- Successful coitus/ AI
- Ovulation
- Fertilization
- Implantation
- Development and delivery of the fetus and its membranes

 World standard for fertility is the conception rate

Fertility is affected by various factors

- Age: Fertility declines with increasing parities
- Production : Increased milk production decreased fertility
- Disease: Mastitis, retained placenta
- Artificial control of estrus
- Nutrition
- Management



Infertility : Temporary Loss of fertility (Sub-fertility)

- Cattle and buffaloes are considered infertile when they are neither normally fertile nor sterile.
- Interest in bovine infertility increased with introduction of AI in 1950s
- Decreasing fertility is a worldwide problem. It has been recently reported that fertility in cows has been declining in USA, U.K, Netherland, Ireland, France, Spain, Quebec etc.. Over the last many years

Infertility

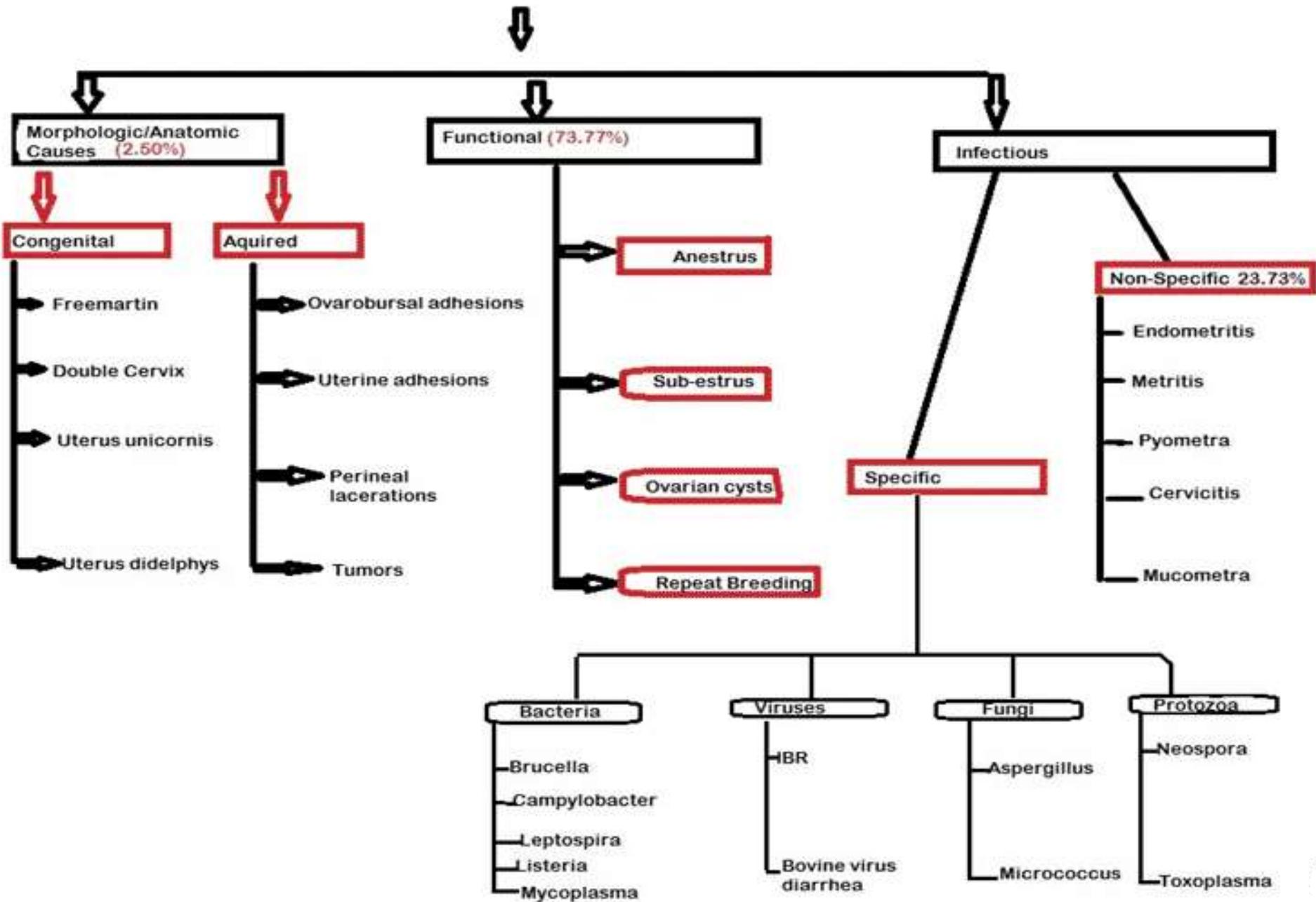
Congenital
Morphological
causes

Functional
Causes

Infectious
Causes



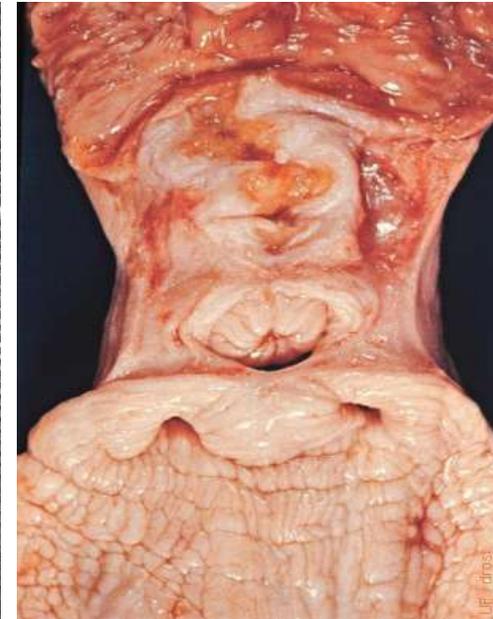
INFERTILITY



Congenital morphological causes

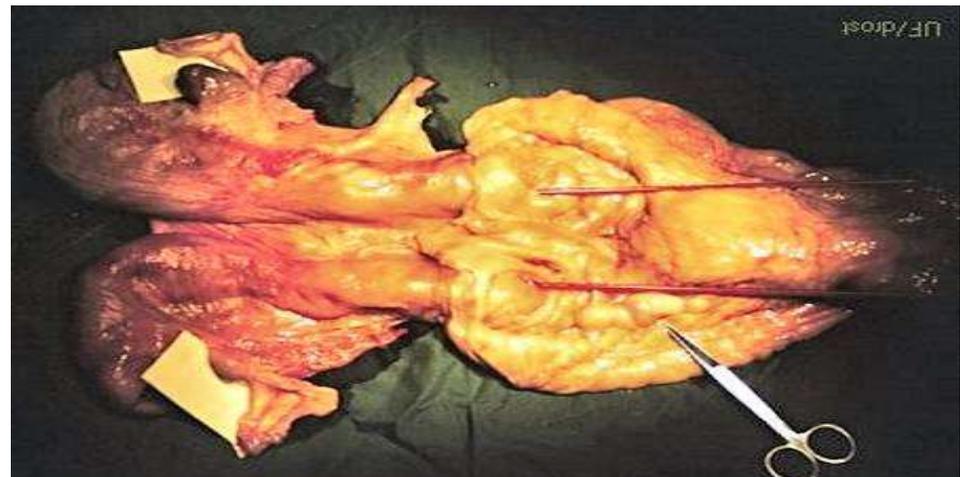
(Developmental abnormalities of genital organs)

- Ovarian hypoplasia
- Freemartinism
- Hermaphrodites
- White heifer disease
- Double cervix
- Uterus unicornis
- Hymen defects
- Others



Acquired Causes

- Ovarobursal adhesions
- Uterine adhesions
- Cervical cirrhosis
- Genital tumors
- Parturient lacerations



Ovarian hypoplasia(Germ cell weakness)

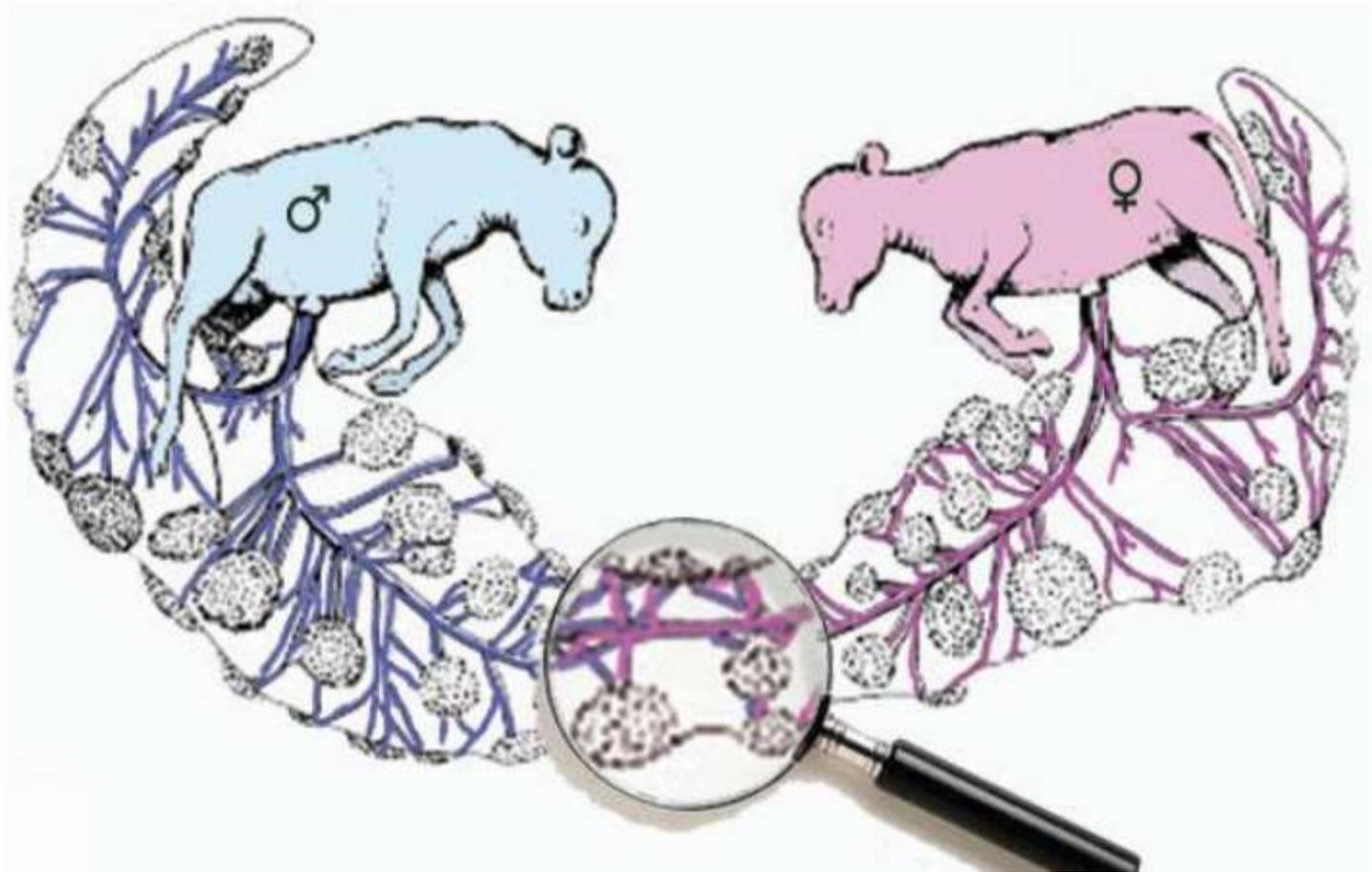
- Swedish Highland cattle
- Swedish white and Red cattle
- Low number of primordial follicles
- Hypoplasia is left sided or bilateral
- Ovaries small less than 1 g Partially hypoplastic ovaries 4-8 g ovaries have furrows
- No estrus or pregnancy
- No CL no follicle



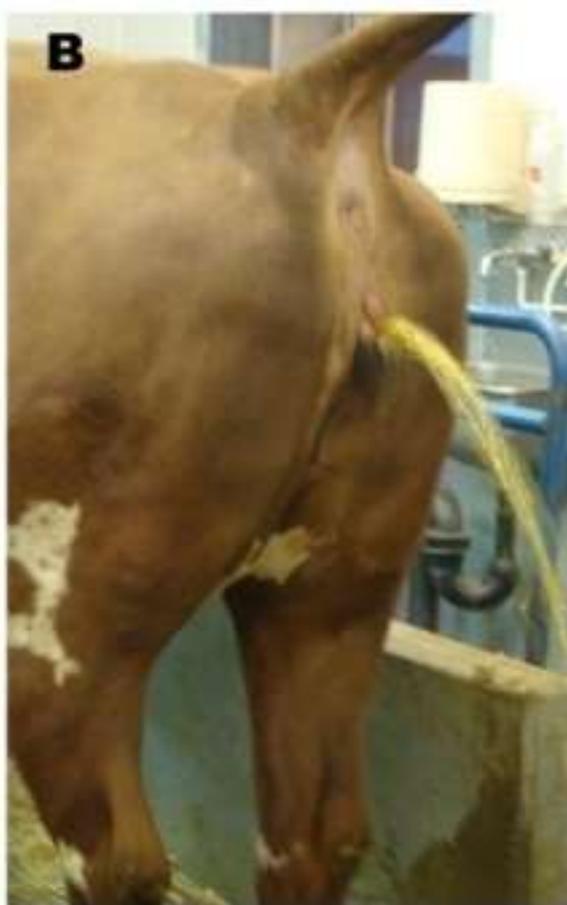
Freemartin (Intersex)

- Genetically female fetus masculinised in the presence of a male co-twin, giving rise to a sterile heifer.
- Genital tract defects with varying severity can be observed in freemartin animals
- Uterine horns hypoplastic or cord like
- Anatomic continuity between the uterus and the vagina is frequently absent

- Placental anastomoses between the heterozygotic twins results in blood chimaerism occurs (60, XX/XY) and passage of male gonad determinants or hormones to female fetus.
- External genitals female like
-



- Fish-hook shaped vulva,
- Cervix is underdeveloped or absent
- Enlarged clitoris, small vulva, tuft of hair
- Urine emission in upward spurts
- Small sized vulva and rudimentary uterus
- Small sized vagina with a blind end
- The presence of vesicular glands was a constant feature seminal vesicles in a phenotypic female

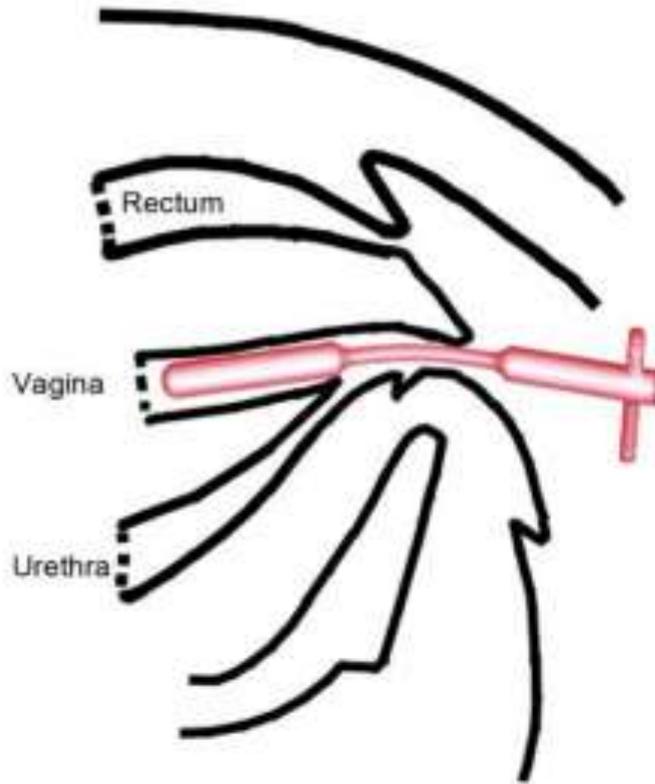


A

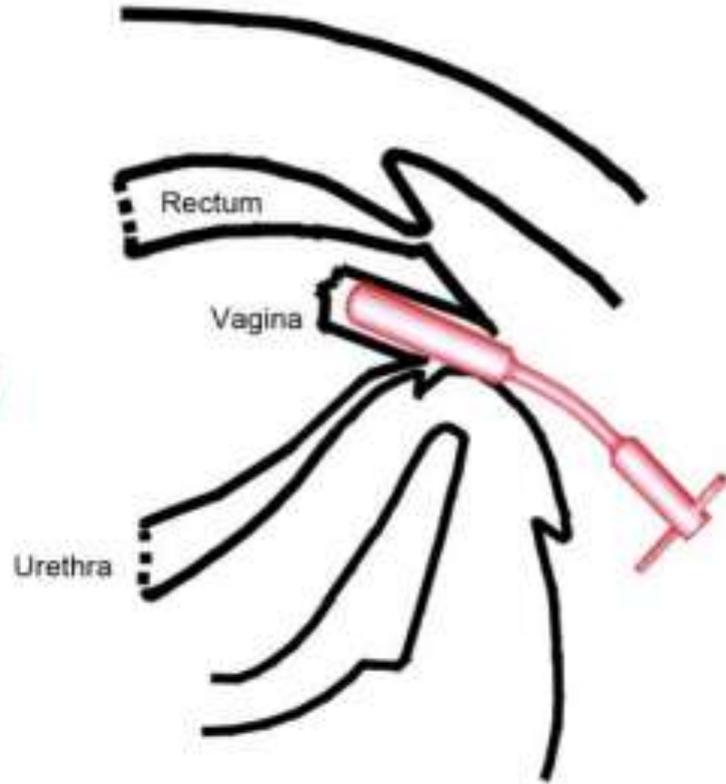


B

Normal heifer



Freemartin heifer



Acquired morphologic causes of infertility

- Ovarobursal adhesions

Incidence 1-17% in different studies

Common in adult pluriparous cows

Infections of bursa may occur following metritis, pyometra or macerated fetus or ovulation and rough ovarian palpations

Infusion of large volumes of intra-uterine drugs

Tuberculous peritonitis

- Fine web-like strands to complete fibrosis of the bursa
- Often attached to a scar or regressing CL
- May be unilateral or bilateral
- Oviducts may become occluded resulting in hydro-salpinx and later pyo-salpinx
- Diagnosis Transrectal palpation and PSP dye test
- Therapy not possible in bilateral cases.

Cervical cirrhosis

- Results from cervicitis
- Considered by some when second cervical fold prolapses with redening
- Poor manipulative procedures
- Does not affect fertility when uterus is not involved
- Cervical tears can result in fibrotic changes when unattended

Genital tumors

- Common Tumors on vulva and vagina include squamous cell carcinoma, fibroma and fibro-pappiloma
- Adeno-carcinoma, leio-myomas and fibroma are common in the uterus.

- The above lectures are also explained in video lectures at my YouTube Channel Govind Narayan Purohit
- Kindly share the videos and subscribe to my channel if you like them
- Thanks