



Affections of reproductive tract of dairy cows and its surgical management

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Abstract

Abnormalities that can be corrected by reconstructive surgery to restore fertility include the pneumovagina, uro-vagina, perineal injury and cervical lacerations. Surgical procedures on the reproductive tract (with the exceptions of cesarean section, uterine torsion, vaginal and uterine eversions, and ovariectomy) are performed to correct urogenital abnormalities.

Keywords: Episiotomy, Caslick's suture, Ovariectomy, Reproductive surgery, Uterine prolapse

I. Surgery of The Vestibule, Vagina and Cervix:

1. Episiotomy

Episiotomy is indicated to prevent tearing of the dorsal commissure of the vulva and of the vestibule when there is an oversized fetus or inadequate relaxation/stenosis of the caudal aspect of the birth canal.

2. Pneumovagina

The surgical procedure used most commonly to correct Pneumovagina is the Caslick's suture, in which the labia are sutured together from the dorsal commissure to slightly below the floor of the ischium after a strip of tissue has been excised from the muco-cutaneous margin of each labium. A Caslick's suture may be insufficient to correct Pneumovagina when the vulva has deviated far cranially and dorsally.

3. Urovagina

The cow is usually culled without investigation of the urovagina causing the infertility. Urine pooling in cows can often be resolved with urethral extension surgery. To differentiate between mucosa and submucosa, the authors dye the mucosa of the vestibule by dispersing a small amount of 1% new methylene blue dye throughout the vestibule (Gilbert *et al.*, 1989).

II. Recto-Vestibular Laceration and Fistula:

A perineal laceration or fistula occurs at parturition when the calf's foot or nose catches the annular fold of the hymen at the vagino-vestibular junction. A recto-vestibular fistula occurs when the tissue between the rectum and vestibule is perforated by the calf, but the malposture of the calf is corrected before the calf is delivered, allowing at least a portion of the perineal body to remain intact (Hudson, 1972).

A first-degree perineal laceration involves only the skin and mucous membrane of the dorsum of the vestibule. Cows with a first-degree perineal laceration can be treated with a Caslick's vulvoplasty.

A second-degree perineal laceration is characterized by disruption of the constrictor vulvae muscle, compromising the ability of the perineal musculature to constrict the vestibule. Cows with a second-degree perineal laceration require a vestibulo-plasty because the constrictor vulvae muscle is disrupted, causing the perineum to sink, predisposing the cow to pneumovagina and urovagina

A third- degree perineal laceration is characterized by a complete disruption of tissue between the rectum and vestibule, resulting in a common rectal and vestibular vault. A third-degree perineal laceration is performed in a manner similar to that described for mares with a laceration and is composed of 2 stages: Recto-vestibular reconstruction and ano-perineal reconstruction using a 6-bite suture pattern.

III. Vaginal Prolapse:

Prepartum vaginal or cervical eversion should be replaced and secured promptly before contamination, laceration, sepsis, fibrosis, and necrosis ensue.

A Caslick vulvoplasty should be adopted only for cows with a first degree vaginal eversion Buhner's suture is an effective suture technique for cows with an eversion more advanced than first degree (Bierschwal *et al.*, 1971).

IV. Surgery of The Uterus and Ovaries:

1. Uterine prolapse:

Uterine prolapse usually occurs within 24 hours after parturition, with most eversions occurring within a few hours after parturition. Although the condition is uncommon (<1%), it is one of the true emergency situations encountered in farm animal practice. The uterus rapidly becomes edematous and hemorrhagic and may evert to the extent that the uterine artery ruptures, leading rapidly to shock and death.

The everted uterus can be replaced with the cow standing or recumbent Replacing the uterus with the cow recumbent is greatly facilitated by positioning the cow in sternal recumbency with both hind limbs extended caudally, thereby tilting its pelvis cranially.



2. Uterine amputation:

Uterine amputation is a salvage procedure used when the uterus is necrotic or severely traumatized. The uterus can be amputated using an open or closed approach.

3. Ovariectomy:

Bilateral ovariectomy is performed to suppress estrus, which decreases injuries, enhances feed consumption and daily gain, and prevents pregnancy. In research cows, entire ovaries are needed for evaluation of follicles, follicular fluids, and hormones produced within the ovary. Unilateral ovariectomy may be indicated for removal of a diseased ovary (Campbell *et al.*, 1990).

A. Vaginal approach:

The most common approach for spaying heifers is the vaginal approach because the ovaries of heifers are small enough to be removed in this manner.

B. Flank approach:

The heifer is restrained in a squeeze chute, and the left paralumbar fossa is prepared for sterile surgery.

Laparoscopy ovariectomy in a standing cow, as well as an ecraseur or umbilical cord clamps), can be used to prevent uncontrolled hemorrhage when removing a diseased ovary or ovaries from an adult cow.

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