

Review Article**RECENT ADVANCES IN VAGINAL PROLAPSE****Sandeep Bhattarai*, Deepak Sapkota**

Agriculture and Forestry University, Rampur, Chitwan

E-mail: sandeepbhattarai39@gmail.com

Introduction

Vaginal prolapse can be defined as the prolapse of the floor, the lateral wall and a portion of the roof of the vagina through the vulva with the cervix and uterus moving caudal. Frequently the entire vagina and cervix are prolapsed through the vulva (Roberts, 1971). This condition is often spoken by the Farmers as "Casting of withers". Typically prolapse of the vagina and cervix (CVP) is a disorder of ruminants normally in late gestation, only few times it is seen after parturition and rarely it occurs unconnected with pregnancy and parturition. It occurs less frequently in pigs. Its incidence is most common in the cow, especially Herefords, and the ewe. It is practically unknown in cats.

Etiology for Vagino-cervical Prolapse

Arthur, 2001 and Roberts, 1971 illustrated various predisposing factors and etiology for the Vagino-cervical prolapse in their books which are summarized here.

- Causes are probably multiple. It is observed in cow most commonly in the last 2 to 3 months of gestation when large amount of estrogenic hormone is secreted (Relaxation of pelvic ligament and oedema of the vulva).
- Prolapse of the vagina may be influenced due to hereditary or genetic factors in Hereford cattle and sheep and Boxer and Bull dogs.
- It is observed more commonly in pluripara than primiparous. Injuries or stretching of the birth passage at the first or subsequent parturitions may predispose to prolapse during following gestation periods.
- In bitches, vaginal prolapse occurs at pro-estrus and regresses during metestrus. Protrusion of the hypertrophied vaginal mucosa or prolapse may occur (Sarrafzadeh-rezaei, Saifzadeh, Mazaheri, & Behfar, 2008).

- Excessive amount of estrogen as in subterranean clover pastures of Western Australia or in mouldy maize and barley, fed to swine or heifers may show vulvovaginitis with edema of vulva, relaxation of the pelvic ligaments, tenesmus and vaginal prolapse.
- Vaginal prolapse can occur in non-pregnant heifer after normal estrus and increased hemoglobin content, RBC, haematocrit, phosphorus and secondary uterine inflammation could be observed (Yotov, Atanasov, & Karadaev, 2013)

Symptoms

- Mild protrusion of the vaginal mucus membrane through the vulvar lips when the cows lie down.
- Severe necrotic CVP containing a distended bladder and complicated by a prolapse of the rectum due to constant tenesmus.
- Constant irritation and trauma to the exposed mucous membrane results in oedema of the prolapsed vagina and cervix and because this portion drops over the ischial arch thereby causing a passive venous congestion.
- The cervical seal is usually intact. Occasionally the cervix relaxes, the cervical seal is lost and abortions or premature parturition occurs within 24 to 72 hours.
- Constant straining may cause a fast, weak pulse, anorexia, rapid loss of weight, general body weakness, and death of the foetus.
- If prolapse of the vagina occurs postpartum, the ovaries should always be looked for the presence of cysts and if no cysts are present the vulva should be looked for injuries.

Vaginal eversions/prolapse is classified into four grades according to the severity of eversion, the extent of injury, and the exposure of cervix in such eversions.

- **Grade 1 eversion:** a small intermittent protrusion of the vaginal mucosa through the vulval lips is noticed when the animal lies down. Often this tissue becomes dehydrated and traumatized and leads to a grade 2.
- **Grade 2 eversion:** vaginal mucosa protrudes through the vulval lips continuously with the possibility of the urinary bladder getting trapped in the everted organ. If left untreated, grade 2 quickly progresses to a grade 3 eversion.
- **Grade 3 eversion:** continuous protrusion of the entire vaginal mucosa and cervix through the vulval lips with a trapped urinary bladder and an exposed cervical mucus plug. The liquefaction of cervical seal may allow bacterial contamination of the uterus resulting in placentitis and fetal death.
- **Grade 4 eversion:** an eversion of such a duration that the entire vaginal mucosa appears necrotic and fibrosed. Infection is so extensive that the urinary bladder may become involved in it and peritonitis is a possible result.

Differential Diagnosis

Vaginal prolapse should be differentiated from Bartholin's gland cyst, haematoma of the vulva, tumors of the vulva or vagina, eversion of the bladder, prolapse of perivaginal fat and thick heavy fetal membranes.

Prognosis

Prognosis depends upon the severity of the condition and length of the time it has excised. Apart from complicated cases, the prognosis is generally fair to good for the life of the animal and the fetus if treatment is quick and aftercare is good. But with the worsen cases complicated with prolapse of the rectum, death of fetus, abortion, septic metritis severe necrosis of the prolapsed organs, exhaustion, septicemia and toxemia, marked debility of the patient or constant and violent straining, the prognosis is guarded to poor. In sheep, the prognosis is more guarded, since 20 to 30 percent of pregnant ewes may die or expel dead fetuses.

Treatment

The aim is to arrest the process by early replacement and retention of the prolapsed portion. Caudal epidural anesthesia is indicated both to obviate straining and to desensitize the perineum for suturing. The everted mass is cleaned, using plain water or a mild nonirritant antiseptic, and replaced gently with the palm of the hand, being careful not to cause trauma to the inflamed and sometimes fragile tissue. It is retained by tape or stout nylon sutures. However, when irritation from trauma and infection causes vigorous straining, or even the trauma caused by the insertion of the sutures themselves, the retaining sutures may tear through the tissue, become displaced, and prolapse recurs. Although straining may be controlled by caudal epidural anesthesia in the short term and although xylazine will prolong its effect, it is not practical to provide continuous anesthesia by this means.

Roberts mentioned the following management methods to manage the genital prolapse.

1. Mild cases: Cow should be removed from a stanchion and placed in a Box stall. Elevate the rear part of the cow by 2 to 6 inches higher than the front quarter in a stanchion. It is most practical in dairy cattle.

2. Progesterone therapy: The use of 50–100 mg of progesterone i/m daily or 500 mg of repositol once every 10 days has been advocated for prolapse of vagina.

3. Unilateral Pudental Neurectomy: Advocated for the relief of difficult case of vaginal prolapse. Although few cases have benefited from progesterone therapy and unilateral pudental Neurectomy, Roberts believed these methods are unsatisfactory for treatment of the prolapses of vagina.

4. Vulvar Truss: It is of practical value in controlling prolapse of the vagina in dairy cattle confined in stanchion. These trusses may be made of rope, leather or metal. They are held in position by ropes or leather straps securely fastened around cow's chest or neck. This technique is not usually satisfactory when tenesmus is severe or vagino-cervical prolapse is marked.

5. Pessaries: This method is more popular in Europe; it consists of a long narrow wine bottle inserted into the vagina after replacement. Pessaries have not been popular in the United States because there is an

impression that an object placed in vagina tends to cause straining.

Surgical Methods

Various surgical methods are described for the long term treatment of prolapse of the vagina. They are described below.

1. Buhner's Method/ Buried purse—String type of suture (Arthur, 2001)

It involves placing of a subcutaneous suture of nylon tape by using special needle around the vulva. The large needle is introduced by making two stab incisions (under epidural anesthesia previously induced to aid replacement of the vagina) in the midline; the upper one is midway between the dorsal commissure of the vulva and the anus, and the lower one is immediately beneath the ventral vulvar commissure. The needle is inserted into the lower incision, gradually passed subcutaneously up the right side of the vulva and needle is threaded with a double length of nylon tape upon its emergence through upper incision. With one end of the tape held firmly, the loaded needle is pulled downwards thus leaving a length of tape protruding from each incision when it is unthreaded. The entire process is then repeated along the left side of vulva. The tape now encircles the vulva subcutaneously, and its two ends hang from the lower incision. These ends are tied with a simple knot with such a degree of tightness that four fingers can be inserted flatwise up to their second joints into the vulva. The upper incision is closed with a couple of sutures of fine monofilament nylon, and the lower incision can be either left open or sutured according to the cow's proximity to parturition.

A modified Buhner's technique, using sterile infusion set tubing as suture material, was effective in retention of the mass in all the cows. Complications and disfigurement of the vulvar area were not noticed, even in cases where the suture was kept in-situ for a prolonged period (Bhattacharyya, Fazili, Buchoo, & Akand, 2012).

2. Modified Caslick's operation:

This method comprises almost complete surgical occlusion of the vulva by a technique that is actually an extension of Caslick's vulvoplasty operation that is generally applied for preventing vaginal aspiration (wind suckling) in mares. Under caudal epidural or

local infiltration anesthesia, strips of mucous membrane, 1.2 cm wide, are dissected from the upper three-fourths of each vulvar lip. The denuded areas are then approximated by means of fine, non-absorbable sutures, and a few mattress sutures of tape or stout nylon are deeply placed across the vulva to protect the coapted lips from the effects of straining. The suture line must be incised when parturition approaches.

3. Bootlace technique (Hopper, 2015)

This is not a highly preferred technique as the vulval lips are inverted and the suture placement is tedious. However, it is stronger than a Caslick's suture. Following an epidural anesthetic procedure and disinfecting of the vulva and surrounding area, four to five small eyelets are made with umbilical tape or hog nose rings (Hopper, 2015) on either side of the vulva in a dorsal to ventral line at the hair to hairless junction on the vulval lips. As the pattern is tightened, the vulval lips invert. Again, the bootlace must be loosened prior to calving to avoid serious trauma to the vagina.

4. Minchev's Method: Surgically fastening the cranial portion of the vaginal wall through the lesser sciatic foramen to the dorsal lateral wall of the sacrosacral ligament, muscle, and skin of the croup.

5. Winklers Method: Fixation of the cervix to the pre-pubic tendon.

6. Farquharson Method: The object of the operation, which should not be performed later than 3 to 4 weeks from term, is to excise the protruding mucosa, which forms the bulk of the everted mass, and then approximate the cut edges. The operation is performed under caudal epidural anesthesia. Subsequent parturition and conception are not affected, and the cure is permanent.

7. Whipples Operation:

It is the surgical treatment for the prolapse cases in breeding dogs. It is somewhat like Farquharson method where removal of the large amount of the peri-vaginal fat is done. It is the treatment for prolapse of vagina in bitches.

Conclusion

When it comes to the causes of vaginal prolapse there is still a lot that remains unknown. Although there are plenty of theories regarding the cause of vaginal prolapse, the scientific evidence supporting these theories is frequently lacking. With respect to the treatment of vaginal prolapse there are a lot of alternatives, but its management in both cows and ewes can be narrowed down to a few basic steps: assessment, replacement and retention. All these steps should be undertaken swiftly but only after the appropriate hygienic measures. When it comes to retaining the vaginal prolapse an acute vaginal prolapse should be combated with more of a conservative methods rather than the heroics and complicated methods, or if more thorough measures are necessary a Buhner suture should be placed. A chronic vaginal prolapse is best not treated, unless of course this is specially requested by the owner.

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