



Treatment of pneumovaginitis in dairy cattle by caslick operation

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Abstract

Pneumovagina is caused by faulty closure of the lips of vulva as results of poor conformation or traumatic injuries to the vagina due to abnormal handling of the fetus during delivery. The present study was carried out to describe the beneficial effects of caslick operation in cattle affected by pneumovaginitis and infertility syndrome. 27 Holstein dairy cattle were referred to the veterinary teaching hospital of the Shiraz Veterinary School affected by pneumovagina and repeat breeder syndrome. Vulvoplasty or caslick operation was performed under local analgesia. Two third of vulva lips were apposed and the distal third was left open for ease of urination. The vulva lips had an angle of 30° from the vertical plane in 10 (37.0%) cows and an angle of 45° degree in 17 (62.9%) cases. The vulvoplasty was healed very well in 24 (88.8%) cases and required another attempt in 3 (11.11%) cases. Caslick operation described in this study helped to improve fertility and reduce repeat breeder syndrome in Holstein dairy cows treated. Artificial insemination is advised for cows with caslick operation and a week prior to delivery the vaginal fissure should be reopened manually for ease of normal parturition.

Key words: Cattle, Pneumovaginitis, Caslick

Introduction

Pneumovagina is caused by faulty closure of the lips of vulva as results of poor conformation or traumatic injuries to the vagina due to abnormal handling of the fetus during delivery (Morel, 2003). It may also be due to poor feeding conditions in a herd of cattle. Cow in which the lips of vulva are tilted toward the anus are prone to vaginitis, cervicitis, metritis and infertility due to contamination by fecal material aspirated through the vulva. Adequate protection of the genital tract is essential to prevent the adverse effects of pneumovagina. The ideal conformation is achieved if 80% of the vulva labia lie below the pelvic floor and the labia lies at an angle of at least 80° to the horizontal line (Held and Blackford, 1997). Since almost majority of the cited reference have described this condition in equine therefore the present study was carried out to describe beneficial effects of caslick operation in cattle affected by pneumovaginitis and infertility syndrome.

Material and Methods

27 Holstein dairy cattle were referred to the veterinary teaching hospital of the Shiraz Veterinary School affected by pneumovagina and being repeat breeder either by natural breeding or artificial

insemination. The average insemination index was 3.2 ± 1.6 times following their last delivery. Vulvoplasty or caslick operation was the treatment of choice. The animals were starved 24 hours prior to operation, then they were restrained in the chute, the perianal area was washed carefully. Regional anesthesia was induced by caudal epidural injection of 10 ml lidocaine HCl 2% (Astra Ltd). The tail was secured to the neck and the vaginal area was prepared for an aseptic surgery. The edge of vulva was incised about one centimeter wide comprising the skin and vulva mucosa membrane. The incision started from distal one third of ventral vulva commissural up to the dorsal vulva commissural in a simple interrupted suture pattern using Vicryl No. 2. Two third of vulva lips were apposed and the distal third was left open for ease of urination. The owners were advised to keep the area clean and wash it daily from manure and to spray antibiotic on it for 3-5 days. They also received non steroidal anti-inflammatory drug and broad spectrum antibiotic (Oxytetracyclin 10 %broad spectrum) therapy following operation.

Results

The cows in this study weighed 450.50 ± 62.18 kg and were 5.2 ± 1.3 years old. The vulva lips had an angle of 30° from the vertical plane in 10 (37.0%) cows and

an angle of 45° degree in 17 (62.9%) cases. The vulvoplasty was healed very well in 24 (88.88%) cases and required another attempt in 3 (11.11%) cases. Anti inflammatory and supportive therapy following caslick operation helped returning the vagina and uterus in its normal convulsion status. The insemination success rate was almost 85% during the first estrus following the caslick operation and 15% required second insemination following caslick operation.



Fig. 1: Caslick operation sutured two third of the vulva length

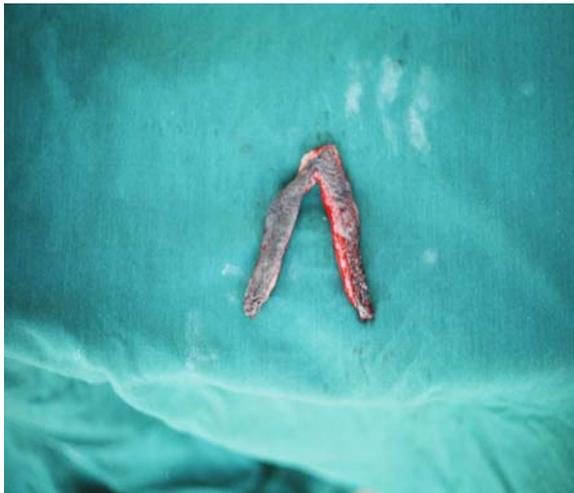


Fig. 2: Incised lips of vulva, 1-1.5 cm wide and Two third of the vulva length

Discussion

Caslick operation described in this study helped to improve fertility and reduce repeat breeder syndrome in

Holstein dairy cows treated. Whenever the vulva angle to the anus alters due to different modulators, the vagina will be prone to suction of air, feces or contamination (Walker and Voughan, 1980). Usually anal sphincter and vulva fissure should lie on an unbroken line and out of pubis bone. The alteration in the anal and vulva continuity develops due to dystocia and abnormal handling of the fetus during delivery, rectovaginal laceration (Morrow, 1980), poor body conformation (Pasco, 1979), genetical variation, poor feeding condition, senility and high number of pregnancies, treatment of the prolapsed vagina and uterus also requires caslick operation (Morrow, 1980). If the ischium of the pelvis is too low, the vulva tends to fall toward the horizontal plane. This opens up the vulva to contamination by feces and air, increasing the risk of vaginal and uterine infection. The purpose of surgical intervention for pneumovagina is to prevent the involuntary aspiration of air and feces into the vagina. A caslick index has been developed to objectively evaluate the need for surgery in mare (McKinnon and Voss, 1993). A vulvometer is used to measure the effective vulva length (L) and the angle of declination (A). The product (LA) represents the Caslick Index. Mares with an index above 100 may benefit from operation and those with an index above should definitely show improved fertility following surgery (Pasco, 1979). The effect of poor conformation of the perianal area may be corrected by a caslick vulvoplasty operation, developed by Caslick (Caslick, 1937). Dramatic clinical improvement was seen when uterine irrigation was stopped and the dorsal aspects of the vulva labia was temporarily closed (Held and Blackford, 1997). Since the reports about caslick operation in dairy cattle is scanty (Roberts 1986; Trotter, 1993). Induction of anesthesia was better achieved by the injection of 10 ml of 2% lidocain HCl between the 1st and 2nd coccygeal vertebra than sacro coccygeal area. Sometimes it was necessary to inject lidocain HCl by infiltration around the vulva lips (Roberts, 1986). Local anesthetic infiltration may induce haematoma, interfere with tissue repair, poor anesthesia in deep layer and lacks muscular relaxation (Roberts, 1986). Simple interrupted suture in one layer closure is adequate. But two layer closures give a better success rate (Turner and McIlwraith, 1995). Vulva mucosa is sutured separately in a simple continues pattern and skin is apposed separately using similar suture pattern. Antibiotic and anti-inflammatory drugs following operation not only reduces chances of wound infection but also reduce the vaginitis and inflammatory conditions of the vagina, help in the returning the vagina to the normal shape and contour. Repair of first degree perineal laceration, may accomplish by a caslick operation. But repair of the second degree, third degree

or recto-vaginal laceration primarily should be performed by routine specified surgical technique due to high tensions on the sutures (Van Ittersum and Van Buiten, 1999). Later on after anal and vulva has gained their normal structure, there might be a necessity for caslick operation. If caslick operation is performed for treatment of vaginal or uterine prolaps and in the case that there is straining pressure due to vaginal or uterine stimulation or repulsion, few reinforced sutures are necessary to support the caslick suture and prevent it from rupturing. Artificial insemination is advised for cows with caslick operation and a week prior to delivery the vaginal fissure should be reopened manually.

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