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PERINEAL LACERATIONS AND INFERTILITY IN COWS WITH SPECIAL REFERENCE TO SURGICAL TREATMENT

(With one Table & 4 Fig.)

By

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(Received at 26/4/1993)

تهتكات العجان وعقم الأبقار مع اشاره خاصه للعلاج الجراحى

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أجرى هذا البحث على تسع أبقار فريزيان عقيمه تعانى من التهاب مهبلى ورحمى نتيجة تهتك منطقة العجان بعد الولاده حيث كان متوسط عدد التلقيحات الغير مخصبه لهذه الحيوانات يتراوح ما بين ٦ – ٢٢ قبل التدخل الجراحى وتم تشخيص هذه الحيوانات من اجمالى ٣٠٠ بقره مختلفة الاعمار فى مزرعة بنى مر بأسيوط.

تم التدخل الجراحى لعلاج هذه الحالات فى مرحلة واحدة وكان الألتئام بالقصد الأول ثم تم علاج حالات الالتهاب المهبلى والرحمى مما أدى إلى تناقص عدد مرات التلقيح اللازمه لحدوث الاخصاب حيث كان المتوسط العام عدد ٢ تلقيحه بعد التدخل الجراحى هذا بالأضافه إلى أنه لم تحدث أى تهتكات لمنطقة العجان بعد الولاده الطبيعيه مما أدى إلى زيادة الكفاءه الأنتاجيه والأقتصاديه لهذه الحيوانات إلا فى حالة واحده.

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SUMMARY

Nine cows suffered from infertility problems due to third-degree of postpartum perineal laceration were subjected to surgical treatment. The numbers of infertile inseminations varied between 6-22 from parturition till surgical interferance. The reconstruction was completed in one operation and healing occured by first intention. The overall number of services/conception decreased to be two after surgery and none of the treated cows suffered a perineal laceration at subsequent calvings.

INTRODUCTION

Perineal lacerations and rectovestibular fistula have been reported in mares and cows (*STRAUB and FOWLER, 1961*) and in bitches (*SODERBERG, 1986*). Perineal lacerations are mostly associated with obstetrical trauma because of expulsive forces generated during the second stage of labor. Fetal maternal disproportion, fetal malpostion and forced extraction also may contribute to perineal trauma (*DREYFUSS et al. 1990*).

Perineal lacerations were classified by *AANES (1964) and COLBERN et al. (1985)* according to their severity into three degrees. First-degree lacerations are superficial and involve the vaginal and vulvar mucous membranes. Second-degree lacerations involve the entire wall of the vagina and the vulva but not the rectal wall and anus. In third-degree perineal lacerations, the entire wall of the vagina and rectum are torn, including the perineal body and anal sphincters. Decreased fertility in cows suffered from third-degree of perineal lacerations devolped due to vaginitis and endometritis caused by contamination of the vestibule and vagina (*DREYFUSS et al., 1990*).

Several techniques for repair of perineal lacerations in the cow and mare have been described by *FARQUHARSON (1943), GOETZE (1952) and STRAUB and FOWLER (1961)*. They recorded reoccurance of perineal lacerations after surgical interference. Reoccurance of laceration in recently sutured cases immediately after parturation may be attributed to inflammation and oedema associated with acute trauma (*AANES, 1964*). To avoid this reoccurance he performed two-phase operetive technique in a shelf of tissue between the rectum and vagina. The perineal area, between the anal sphincter and dorsal commissure of the vulva, was allowed to remain unsutured

while the shelf healed. A second operation was then performed to reform the perineal area.

The goal of the present study is to reconstruct the perinium in one operation with special attention to postoperative fertility.

MATERIAL AND METHODS

In this work 300 fresian cows were examined in Bani Morr dairy farm "Assiut province" for perineal lacerations. Nine of them were suffered from vaginitis and endometritis due to third-degree perineal lacerations (Fig. 1). These cows were subjected for surgical interferance followed by post-operative care. The breeding histories of these animals were recorded before and after operation.

Surgical interference:

The operation was done on the standing position. The animals were tranquilized using xylazine hydrochloride (Rompun) in a dose of 0.05 mg/kg b.wt. and given epidural analgesia. The tail was reflected cranially to reduce contamination and interference during surgical procedure. The faeces in the rectum were removed. The perineal area was scrubbed with soap and water. The rectum and vagina were cleansed with mild antiseptic wash and dried. The perineal area was prepared for surgery, using alternate applications of 70% ethyl alcohol and 3% tincture of iodine.

Two stay sutures were placed on each side of the laceration. One suture was placed at the level of the ventral part of the anal sphincter and the other through the lips of the vulva near its dorsal commissure. The sutures were tracted gently by an assistant, thereby increasing exposure of the surgical field during the procedure. The field should be well lighted to facilitate dissection and suturing.

The perineal laceration was freshed. An incision began at the left side of the dorsal commissure of the vulva extending dorsally (upward) to that of the anus thenafter turned toward the right side directed ventrally (downward) to the right aspect of the dorsal commissure of the vulva. The skin and underlying fascia or mucous membrane was carfully dissected and excised (Fig. 2).

Several interrupted sutures using chromic catgut No. I were performed in the submucosal layer of the rectum on both sides without penetrating to the lumen (Fig. 3). In the same

manner, the perivaginal tissue was sutured. The musculofascial defect between the rectum and the vagina was closed with 8 figure sutures. The edges of the skin were sutured from the anal sphincter to the ventral extremity of the incision with interrupted horizontal mattress suture pattern using silk No. 2 (Fig. 4). After completion of the operation, The stay sutures were removed.

Postoperative and gynaecological care:

The skin sutures were removed in 10-14 days postoperatively. Systemic antibiotics was given for 5-7 days. Rectal examinations were not performed for a minimum of 30 days after surgery. Two weeks after surgery, vaginitis were treated by vaginal doshes using acriflavine 0.1% once a week for three successive weeks using rectal enema connected with long metal catheter. Moreover, simple endometritis were treated one month after surgery by intra-uterine infusion of 150 ml of lugol's iodine solution 4% once a week for 3 successive weeks through the recto-vaginal technique (*MORROW, 1980*). Natural mating and pregnancy diagnosis were applied after gynaecological care.

RESULTS

The overall incidence of the 3rd degree perineal laceration in the present study was represented by 3%. Moreover, gynaecological examination by rectal palpation revealed that perineal lacerations (3rd degree) was accompanied by vaginitis and simple endometritis. The healing process after surgical interferance of the perinium occured in 8 out 9 cows by first intention. The fertility index of each case before and after surgery are illustrated in table (1).

From the table, 8 out of 9 treated cows had not suffered a perineal laceration at the subsequent calvings. Reoccurrance of the condition happened only in one case (No. 5) three days post-operation. Moreover, these cows required 116 inseminations without conception before surgery versus 16 inseminations after surgery, with overall two inseminations per conception.

DISCUSSION

In yielding cows the optimum economic calving interval is 365 days (*ARTHUR et al. 1982*). *SMIDT and FARRIES (1982)* defined calving interval as it is the time elapse between calving and first post-partum fertile besides the length of gestation

period. A third-degree perineal laceration lead to communication between the rectum and the vagina resulting in faecal contamination of the vestibule and vagina. With the onset of estrue and cervical relaxation, vaginitis and endometritis develops which result in infertility (*DREYFUSS* et al., *1990*). In the present study, it was clear that the period elapsed from parturtion till surgical interferance ranged between 8-24 months without conception. Failure of conception of these cows may be attributed to the enterance of the faeces into the genital tract leading to vaginitis and ending by endometritis.

Before surgery, food and water were not withheld since the normal bovine faeces are soft enough to not require dietary alterations, which is in marked contrast to the mare (*STRAUB and FOWLER, 1961 and COLBERN* et al., *1985*).

AANES (1964) reported that repair of a third-degree perineal laceration immediately following injury is unsuccessful due to the devitalized tissue. The damaged tissue will slough, resulting in the reformation of the laceration. He advised that surgical repair of this wound should be postponed until healing is complete usually 3-6 weeks.

In the present work, 8 out of 9 treated cows had not suffered a perineal laceration at subsquent calving. Recurrence occured only in one case No. 5 three days postsurgically. The failure was due to severe straining which resulted in tearing out of the sutures and adjacent tissus. This straining may attributed to a reduction in the size of rectal lumen from the ampulla to the anal sphincter. This constriction allowed faeces to accumulte in the rectum and made muscular contraction necessary to void the accumulated faeces leading to rupture of sutures (*AANES, 1964*).

It was found that single-stage surgical repair of third-degree perineal laceration appeared to have a good prognosis and healed by first intention. The method of suturing described herein frees the rectal and vaginal mucosa of sutures and thereby minimizes the possibility of infection and consequent formation of fistulous tracts. In addition to the secretion of serum seals the rectal and vaginal wound shortly after surgery.

After surgical reconstruction of perinum and gynacological treatment of vaginitis and endometritis, the number of services/conception decreased to be 2 services per conception which have a high economic importance (*ARTHUR* et al., *1982*). Moreover, none of the eight cows that subsequently delivered a calf per vagina sustained another perineal laceration. This

will lead to decreased in the intercalving period of the cows in the subsequent breeding seasons. In contrast to that, perineal laceration after foaling had a 15-75% recurrance rate *(AANES, 1964; STICKLE et al., 1979 and COLBERN et al., 1985).* This difference may be due to that most cows continue to grow and mature physically more between their first and second pregnancies than do mares *(DREYFUSS et al., 1990).* It is difficult to determine whether less scar tissue formation and loss elasticity occur following wound repair in cows, but this may also be a factor.

LEGENDS

Fig. 1: Showing third degree perineal laceration.
Fig. 2: Showing the perineal region after excision of skin, fascia and mucous membrane.
Fig. 3: Suturing the tissues between the rectum and vagina.
Fig. 4: The edges of the skin were sutured with silk No.2.

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Table (1): The fertility index before and after surgery of the perinium.

			Before surgery (n=9)		After surgery (n=8)	
case No.	age (year)	No.of previous parturtions	Period without conception	No.of services without conception	Period before conception	No. of services/ conception
1	6	3	16 months	14	5 months	3
2	6	3	08 "	06	4 "	2
3	5	3	12 "	10	3 "	1
4	5	2	24 "	22	6 "	3
5	4	1	19 "	17	-	-
6	6	2	23 "	21	6 "	3
7	6	3	10 "	08	3 "	1
8	5	2	09 "	07	3 "	1
9	4	1	13 "	11	4 "	2
M±S.D.	5.2±0.3	2.2±0.8	14.8±5.9	12.8±5.9	4.3±1.2	2.0±0.9

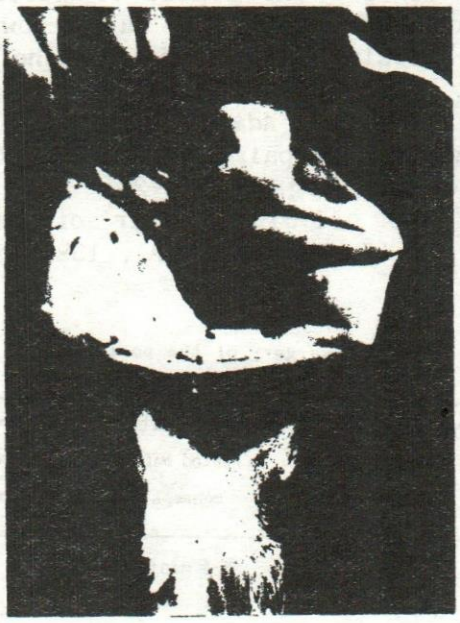

Fig. (1)

Fig. (2)

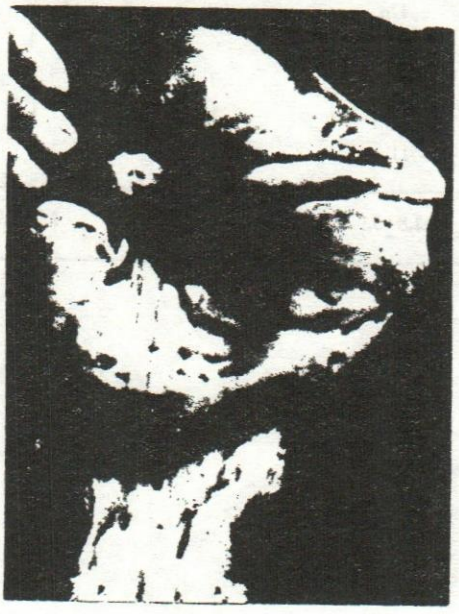

Fig. (3)

Fig. (4)