

CLINICAL INCIDENCE OF REPRODUCTIVE DISORDERS IN CROSSBRED COWS IN THE PROVINCE OF BALOCHISTAN

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ABSTRACT

The clinical incidence of reproductive disorders in crossbred (local non-descript crossed with Friesian) was determined from the records maintained at the artificial insemination (A.I.) component, Livestock and Dairy Development Department, Balochistan for the period from July 1980 to June 1995. A total of 21,493 cases of uterine infections, reported anoestrus and obstetrical problems were recorded. The highest incidence was found to be of uterine infections (47.5%) followed by anoestrus (34.3%) and obstetrical problems (18.2%). Among uterine infections the first degree endometritis was the most common (52.8%) followed by puerperal uterine infections (24.9%), second degree endometritis (17.1%), pyometra (3.2%) and mucometra and hydrometra (2.0%). Various types of reported anoestrus in the crossbred was found to be real anoestrus (62.2%), silent oestrus (31.1%) and immature genitalia with non-functional ovaries in heifers (6.7%). Among obstetrical problems the highest incidence was of prolapse of vagina and uterus (31.3%) followed by dystokia (26.9%), retention of foetal membranes (23.9%) and non-specific abortions (17.8%).

INTRODUCTION

The artificial insemination (A.I.) first began in Balochistan in 1980-81 with the help of foreign aid. Since then about 90,385 local non-descript/crossbred animals have been inseminated with Friesian semen. Elite crossbred F₁ cow has been shown to produce 6240 liters of milk in a lactation period of 390 days. But up to 20-25% reduction in yield was recorded in second generation (back cross, 75% Friesian and 25% local). It may be attributed to various environmental, managerial and nutritional factors. In spite of the above high performance of F₁ animals, regular occurrence of reproductive events is prerequisite to obtain optimum production in these cows. Various reproductive disorders (23.7% of the total cows presented for insemination) seriously reduced the overall production potential of these animals.

Although records of inseminations and condition of reproductive tract were maintained at the artificial insemination centre, complete information on animal management, feeding or behavior was not available. This paper is an attempt to elucidate various reproductive disorders of the crossbred cows which ultimately can cause a complete or partial reproductive failure and low overall productivity in these animals.

MATERIALS AND METHODS

Data for this paper were obtained from clinical

records maintained for the province in the office of Deputy Director Animal Breeding, Livestock & Dairy Development Department, Balochistan. In addition to rendering artificial insemination and pregnancy testing services this office also deals with theriogenological problems.

RESULTS AND DISCUSSION

Uterine infections

Various types of reproductive disorders were recorded in these animals. Among these the uterine infections were found most common. Among all clinical reproductive disorders recorded at various A.I. centers in Balochistan, 47.5 percent were classified as non-specific uterine infections. The relative incidence of different non-specific uterine infections in crossbred cows are shown in Table 1.

First degree endometritis was the most common (52.8%), followed by puerperal uterine infection (metritis/endometritis) (24.9%), second degree endometritis (17.1%) and third degree endometritis or pyometra (3.2%). The incidence of mucometra and hydrometra was 2.0%. The highest incidence of uterine infections was detected during the month of March and April, i.e., the months that follow the peak breeding season of these cows. This might be due to the first degree endometritis subsequent to natural mating by infected bulls.

Table 1: Relative incidence of non-specific uterine infections in Friesian crossbred cows in Balochistan (1980-95).

Condition	No. of cases	Percentage
First degree endometritis	5394	52.8
Puerperal uterine infections	2538	24.9
Second degree endometritis	1742	17.1
Pyometra	330	3.2
Mucometra & hydrometra	207	2.0
Total	10211	

In Indian buffaloes and cows infertility because of infectious origin range from 38.8 to 44.6 percent (Dwivedi, 1969; Rao, 1987) and in Faisalabad, Punjab and N.W.F.P. the infertility was reported to be 30 to 50 % (Samad *et al.*, 1987; Jabbar, 1989; Shah, 1986; 1991; Siddiqi, 1995). These variations could be attributed to difference in breeding and management practices in different regions of the countries.

The reasons for such a high incidence of non-specific uterine infections could be due to the natural service by infected bull, as a sequelae of post-partum prolapse, retained foetal membranes, dystokia, abortion, handling of prolonged parturition by the unskilled person, inappropriate insemination and/or improper sterilization of insemination equipments, inflation of air and insertion of tail into the vagina (for letdown of milk) and other unexplained reasons as recorded in the clinical data on these crossbred cows.

The occurrence of hydrometra or mucometra seemed to be sequelae of a chronic inflammatory reaction of endometrium. Cystic ovarian degeneration, which is the usual cause of hydrometra or mucometra in the cows, was also observed. However, cervical anomalies causing obstruction in the outflow of the uterine mucus were observed in some cases. It was also noted that more cases of hydrometra/mucometra were present in heifers than the adult cows.

Anoestrus

Anoestrus was reported as a problem in 34.3 percent of the total reproductive disorders. Rectal palpations of these cows revealed real anoestrus in 62.2 percent, silent oestrus or suboestrus in 31.3 percent and immature genitalia with non-functional ovaries in 6.7 percent (Table 2). A high incidence of real anoestrus was observed during the months with decreasing ambient temperature i.e. December to February. This incidence of real anoestrus and silent oestrus found was consistent with that reported by Dwivedi (1969),

Luktuke and Roy (1964), Samad *et al.* (1987) and Estill and Farin (1993).

Table 2: Relative incidence of reported anoestrus in crossbred cows in Balochistan, (1980-95).

Form of anoestrus	No. of cases	%age
True/real anoestrus	4581	62.2
Silent/suboestrus	2293	31.1
Immature genitalia	493	6.7
Total	7371	

Silent oestrus was detected by the presence of functional corpus luteum on one of the ovaries with no external manifestation observed. Some of the cases of true or real anoestrus and a considerable number of silent heat/suboestrus with good body condition were successfully treated with the oral administration of mineral supplements containing calcium, phosphorus, manganese, iodine and copper in different formulation.

In animals suffering from immature genitalia, both of the ovaries were found to be smaller in size and inactive with relatively harder consistency. Uterine horns were small and underdeveloped. Consistency of uterine horns was mostly normal, although in some cases thinning of uterine wall was also observed. These findings are similar to those reported by Pederson (1980), who found the incidence of immature genitalia in 9.6 percent cattle and buffalo heifers in Punjab.

Obstetrical problems

The third category among reported reproductive disorders was of different gynaecological and obstetrical problems. Table 3 shows the relative incidence of various obstetrical problems in crossbred cows. The highest incidence recorded was prolapse of vagina and uterus which was responsible for 31.3% of all obstetrical problems. Pre- and post-partum vaginal prolapse accounted in 42.4 and 32.6%, respectively whereas post-partum uterine prolapse occurred in 25% of the cases. In the present study, most of the genital prolapse occurred during the months of September to November.

The highest incidence of pre-partum vaginal prolapse than post-partum uterine vaginal prolapse happened during these months. This seasonal pattern of prolapse may be attributed to the tendency of the crossbred animals to be bred in this season. Since majority of the calving occurs during November (fall) and April (spring) in Balochistan. The incidence of pre-partum vaginal prolapse was reported as higher

occurrence in August and February while post-partum vaginal and uterine prolapse are noted during November and May to July.

Table 3: Relative incidence of obstetrical problems encountered in the crossbred cows in Balochistan (1980-95).

Condition	No. of cases	%age
Genital prolapse	1228	31.4
Antepartum vaginal prolapse	521	42.4
Post-partum vaginal prolapse	400	32.6
Post-partum uterine prolapse	307	25.0
Dystokia	1054	26.9
Foetal Dystokia	492	46.7
Torsion of uterus	333	31.6
Incomplete dilation of cervix and uterine inertia.	229	21.7
Retention of foetal membranes	934	23.9
Abortion	695	17.8
Total	3911	

A total of 1054 cows suffered from dystokia. This represented 26.9 percent of all the obstetrical problems. The incidence of different types of dystokia included foetal dystokia, 46.7 percent; torsion of uterus, 31.6 percent; incomplete dilation of cervix and uterine inertia, 21.7 percent.

The highest number of dystokia cases recorded were due to torsion of uterus which is principally a managerial problem. It is needed that proper attention should be given for the management of pregnant cows, to minimize the incidence of dystokia.

Other types of dystokia were found to be due to postural defects of head, neck and fore-limbs of anteriorly presented foetuses. Two cases of dystokia with double head were documented in this data.

In these clinical reports a total of 333 cases of torsion were recorded. The rectal-vaginal examination of these cows revealed the presence of post and pre-cervical torsion in 79.1 and 20.9 percent respectively. In these cases the degree of torsion varied from quarter torsion to complete torsion. Among them the right sided torsion was observed more frequently (93%) than the left sided (7%).

Higher occurrence of uterine torsion in cows in Balochistan may be due in peculiar to geographical conditions such as uneven terrain, or to congested house spaces, sudden jerky movement while taking the animals in and out of the houses, violent movements of pregnant cows when automobiles passes near by,

hauling of the pregnant cows and lack of exercise.

The occurrence of retained foetal membranes accounted for 23.9 percent of obstetrical problems (Table 3). A higher incidence occurred during the months of October, November, March and April which coincides with the calving season of these crossbred cows in Balochistan. Non specific genital infections, uterine inertia, premature birth and managerial factors are believed to be the major predisposing factors of this problem. While investigating the predisposing causes of retained placenta in cattle and buffalo. Awad and Hariri (1980) reported that light birth weight and shorter intra-uterine life-span of the foetus were associated with placental retention. This observation is contrary to that observed in present study where the heavy weight of the foetus was found to be responsible for uterine atony which in turn, lead to the retained foetal membranes.

A total of 695 (17.8%) cases of non-specific abortions were recorded. More than 60 percent cases of abortion occurred from 2nd to 4th month of pregnancy. While 40 percent of cows aborted from 4th to 8th month of pregnancy. Retention of foetal membranes was noticed in majority of cases in which abortion occurred after 7th month of gestation accompanied by foetid, whitish, muco-purulent discharge. Some of the cows developed metritis, and pyrexia with anorexia after abortion, and were treated symptomatically.

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