

الافرازات الصديدية المهبلية في قطيع من ابقار الفريزيان  
دراسة عن اسبابها وعلاجها

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ح • حمزة ، م • عيسى ، م • ابيوب

تم جمع عنا من افرازات المهبلية من قطيع الابقار الفريزيان (مكون  
من ١٣٩ بقرة) • وهذا القطيع موجود بمدينة التحرير ، وذلك لدراسة  
المسببات البكتيرية لتلك الظاهرة ، وكذلك تم فحص القطيع اكلينيكيًا  
عن طريق الجسم من المسحوق والفحص المهبلي لتشخيص الاسباب الموجودة  
بالاجزاء المختلفة للجهاز التناسلي كما تم اجراء العلاج اللازم لتلك  
الابقار وتابعة الحالة التناسلية لها بعد العلاج •

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GENITAL DISCHARGES IN AN INFERTILE HERD,  
THEIR CAUSES AND TREATMENT  
(With 5 Tables)

By

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SUMMARY

The clinical examination of a herd of 138 Friesian cows suffering from purulent vaginal discharges revealed that the common causes of such condition are chronic endometritis ( 52.18% ), metritis ( 25.36% ) and pyometra (22.46%).

The bacteria isolated from such cows were: E.coli (50.72), Streptococci (47.10%), Staphylococci (39.86%), Corynebacterium (31.88%), anthracoids (28.99%), Ps.pyocyanea (15.22%), yeast cells (2.90%) and Nocardia (2.17).

After applying the proper treatment, clinical cure from endometritis, metritis and pyometra occurred in 88.89%, 60.0% and 32.26% and the conception rate was 75.0%, 34.3% and 19.7% respectively.

INTRODUCTION

Herd infertility is an important problem confronting cattle breeders. Genital discharges constitute an important factor in the causation of this infertility syndrome which incurs large economic losses.

Genital discharges are well-known to be the outcome of bacterial action on the tubular genitalia (MILLAR and RAS, 1952; ROBERTS, 1971; AWAD, 1972 and ABO EL-ATA, 1973). Thus, this work was planned to investigate the bacterial cause of



infertility in a herd of Friesian cattle suffering from purulent vaginal discharge. Moreover, it was also aimed to evaluate the usual methods of treatment adopted in such cases.

#### MATERIALS AND METHODS

This work was carried out on a herd of 138 infertile Friesian cows kept at Tahrir Province, Egypt. Although these animals were T.B., Brucella and Trichomonas free, yet, they were repeat breeders and showing chronic purulent genital discharges. These cows were 4 - 10 years old and gave from one to six deliveries.

Semen used in artificial insemination of such animals was collected from Friesian bulls (Kept at the farm) at the same day of collection after being diluted with egg yolk citrate buffer.

#### Clinical Examination:

Every animal was examined rectally and vaginally according to the scheme given by ZEMJANIS (1970). The principles recommended by ROBERTS (1971) for the diagnosis of cervicitis, endometritis, metritis and pyometra were adopted in the grouping of these cows according to the prevalent lesion.

#### Bacteriological Examination:

The genital discharge was obtained by the use of cotton swabs inserted ~~under aseptic conditions~~ into the vagina till the external os. It was cultured on 5% defibrinated sheep blood agar, MacConkey's agar and nutrient broth, then incubated aerobically at 37°C and examined after 24 - 48 hours.

Specific identification of isolates was accomplished on the bases reported by MERCHANT and PAKER (1961), SOLTYS (1963) and BRUNER and GILLESPIE (1966).

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### Treatment:

The treatment followed comprised: Enuclation of the corpus luteum if present, evacuation of pus ( manually if the cervix was opened otherwise stilboesterole 50 mg were administered i.m ), local antibiotics in the form of terramycine tablets 2 gm. till the discharge ceased, then Lugol's 100-150 ml infused twice inside the uterus at ten days interval.

### RESULTS

#### Clinical History:

These animals were classified according to their previous reproductive history into three main groups:

- 1- Repeat breeder animals: Are those cows which had been inseminated more than three times at successive periods without conception.
- 2- Recent calvers: Are those cows giving birth since 40 to 59 days.
- 3- Anoestrous animals: Are those animals giving birth since 60 to more than 250 days without coming in heat.

The obstetric history of every group is given in table I

#### Clinical Examination:

After a thorough gynaecological examination, the affected cows were classified into three main categories as shown in table 2.

- 1- Cows suffering from chronic endometritis (purulent) with cervicitis: Clinically, these cows were repeat breeders. Rectally, the ovaries were functioning, the uterus was thick and large ranging from 2-3 fingers in breadth irrespective of the stage of the cycle. The cervix was also enlarged. Vaginally, the external os was inflamed and discharging purulent exudate, and the vaginal mucosa was pink



in colour.

- 2- Cow suffering from metritis: Clinically, they were either recent calvers (8 cases) or repeat breeders (27 cases). Rectally, the ovaries were functioning; the uterine wall was hard and thick and the uterus was 4-6 fingers in breadth, showing slight fluctuations. The cervix was also large and hard. Vaginally, the external os was inflamed, opened and discharging purulent exudate. The vaginal mucosa was also inflamed.
- 3- Cows suffering from pyometra: Clinically, these animals were anoestrus. Rectally, the ovary contained a mature corpus luteum. The uterine wall was thick and the uterus was large in size simulating 3-4 months pregnancy. The cervix was also enlarged. Vaginally, the external os was dilated in 19 cows, but opened just to pass a pencil in 12 cows. Purulent exudate was coming out through the external os, and the vagina was pale.

#### Bacteriological Examination:

The different types of micro-organisms isolated from such cows is presented in table 3.

#### Treatment:

The results of application of the fore-mentioned treatment is shown in table 4.

Animals were considered, clinically cured when the ovaries became functioning and the uterus regained its normal size and consistency. In the meantime purulent discharge had ceased to come out for ten days after the stoppage of treatment, otherwise, the animal is not considered cured.

Cured animals were artificially inseminated, then examined rectally after 45 days for detection of pregnancy. The results are tabulated in table 5.

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## DISCUSSION

Diseases causing genital discharges such as chronic purulent endometritis, metritis and pyometra had long been reported (MILLAR and RAS, 1952; ROBERTS, 1971 and ARTHUR, 1975). These affections are not uncommon among livestock in Egypt (ZAKI et al. 1963; EL-WISHY, 1965; AWAD, 1972 and ABO EL ATA, 1973).

Observations of the breeding history of the cows under investigation (Table 1) showed that 65.94% of them delivered normally, while 34.06% showed abnormal labour in the form of abortion (6.52), still-birth (4.35), dystocia (10.87%) and retention of the placenta (12.32%). Similar findings were recorded by BENESCH and WRIGHT (1957), WILLIAMS (1950) and ROBERTS (1971) in cattle, and EL-SAWAF and FOUAD (1964), EL-WISHY (1965) and ABO EL ATA (1973) in buffaloes.

According to the clinical history (Table 1), the affected cows were either repeat breeders (71.74%), recent calvers (5.80%) or anoestrus (22.46%). This result is in agreement with the statement of WAGNER (1962) who stated that anoestrus and the need for repeated breeding to achieve conception are two of the most common reproductive troubles. Moreover, HALABY (1977) reported a similar conclusion after the examination of five herd of Friesian cattle at Kuwait.

Gynaecological examination of such herd revealed that repeated breeding to establish pregnancy was due either to chronic endometritis with cervicitis (52.18%) or metritis (25.36%). This result agrees with the findings of BRUSS (1954) and SCHULTZE (1957) who reported that bovine endometritis was involved in 70 - 85% of infertility cases. Moreover, SEGARTZ and HARDENBROOK (1971) stated that out of 147 infertile cows



114 had clinical evidence of endometritis, cervicitis or both. Recently, HALABY (1977) claimed that chronic endometritis and cervicitis are the major causes for repeat breeding in cows constituting 84.6%.

Although many authors claimed that cervicitis might be present alone or associated with inflammations of the other parts of the genital tract (QUINLAN, 1929 and SHOKEIR, 1958) yet, in our study endometritis was always associated with cervicitis. A result which compares favourably with the findings of HALABY (1977).

On the other hand, anoestrous cows were found to be suffering from pyometra which constituted 22.46% of the affected cows. This result is higher than that given by HALABY (1977) who reported 9.48%. This variation is due to the fact that the latter author examined healthy and unhealthy cows, but in our study only infertile cows were investigated. The affected animals did not exhibit heat symptoms due to the retained active corpus luteum in the ovary (WILLIAMS, 1950; ROBERTS, 1971; HAFEZ, 1974 and ARTHUR, 1975).

Rectal and vaginal findings observed in such cows are similar to those reported in cows (BENESCH and WRIGHT, 1957; MILLAR and RAS, 1952; ZEMJANIS, 1970 and ROBERTS, 1971) and buffaloes (ZAKI et al. (1963; EL-SAWAF and FOUAD, 1964; ELWISHY 1965; and AYOUB, 1973) suffering from similar affections.

Chronic inflammation of the uterus and cervix were believed to be mainly due to bacterial infection (ALBRECHTSEN, 1917; SMITH, 1920; BARAKAT, 1965 and ABO EL ATA, 1973). Moreover, KNUSEL (1945) added that the commonest cause of cervicitis seemed to be chronic endometritis, injury and capture of the mucosa and submucosa during parturition may facilitate bacterial infection of the cervix and create primary cervicitis. WILLIAMS (1950) and ROBERTS (1971) agreed that the Assiut Vet. Med. J. Vol. 4 No. 8, 1977.



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common causes of pyometra are trichomoniasis (especially during pregnancy) and pyogenic organisms mainly E.Coli.

In the present investigation, eight different types of bacteria were isolated from 124 (89.86%) cows. These bacteria were E.Coli (50.72%), streptococci (47.10%), staphylococci (39.86%), corynebacterium (31.88%), anthracoids (28.99%), Ps. pyocyanea (15.22%), yeast cells (2.90%) and nocardia (2.17%). Similar results had been reported by many authors (DE CAMP, 1935; RUNGE, 1942; DAWNE, 1946; HATCH et al. 1949; EASLEY et al. 1951; SAGARTZ and HARDENBROOK, 1971; ROBERTS, 1971; AWAD, 1972 and ABO EL ATA, 1973) from animals suffering from endometritis and pyometra.

As shown in table 3, although the bacteria isolated were nearly similar in the different types of uterine affections, yet their incidence varied in each lesion. It is worthy to mention that the incidence of C.pyogens, Staph. aureus, haemolytic strept. and Ps. pyocyanea which are the most pathogenic play the important role in these infections.

With regard to C.pyogens, its incidence (38.07%) was higher in cases of pyometra than in either metritis (14.29%) or endometritis (9.72%). On other hand, the incidence of STAPH. AUREUS was nearly the same in both metritis (28.87%) and pyometra (28%) but lower in endometritis (16.67%). The incidence of haemolytic streptococci was 38.89%, 34.29% and 32.26% in endometritis, metritis and pyometra respectively. The highest incidence of Ps. pyocyanea (17.14%) was found in metritis, followed by 16.13% in pyometra and 13.89% in endometritis. These findings coincide with what had been reported by DE CAMP (1935), SCHOETZ (1944), ROBERTS (1971), SAGARTZ and HARDENBROOK (1971) who cited 20% and 36% respectively from cows suffering from similar affections. This variation may be attributed to the different techniques adopted by each author.



It was also proved that the success of treatment was better in cases of endometritis (88.89%) than in either metritis (60%) or pyometra (32.26%) as presented in table 5. ABO EL ATA (1973) proved that lugol's iodine gave good results in cases of first degree endometritis than in second and third degree cases. This was also proved by PUNDT (1950), ZAKI et al. (1963) and DYARIOVA et al. (1970). Accordingly, the conception rate was higher in cases cured from endometritis, ( 75% ) than in those cured from metritis (34.30% ) or pyometra (19.70%).

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Table 1

Clin. History	N.Birth	Abortion	Still-brth	Dystocia	R.P. Total
R. Breeders	68	6	6	10	9 99(71.74%)
Recent Calvers	2	1	-	3	2 8( 5.80%)
Anoestrous	21	2	-	2	6 31(22.46%)
Total	91 (65.94%)	9 (6.52%)	6 (4.35%)	15 (10.87%)	17 (12.32%)138

Table 2

Clin. History	Endometritis	Metritis	Pyometra	Total
R. Breeders	72	27 (19.57%)	-	99
Recent Calvers	-	8 (5.79%)	-	8
Anoestrous	-	-	31	31
Total	72 (52.18%)	35 (25.36%)	31 (22.46%)	138



Table 3

Bacteria isolated	Endometritis		Metritis		Pyometra		Total	
	No.	%	No.	%	No.	%	No.	%
Streptococci								
haemolytic	28	38.89	12.	34.29	10	32.26	50)	
non haemolytic	16	22.22	16	45.71	11	35.48	33)	83....47.10
Staphylococci								
aureus	12	16.67	10	28.57	6	19.35	28)	
epidermidis	16	22.22	14	40.00	9	29.03	39)	67....39.86
Corynebacteria								
pyogenes	7	9.72	5	14.29	12	38.07	24)	
unidentified	9	12.50	12	34.29	5	16.13	26)	50....31.88
Anthracooids	29	40.28	17	48.57	7	22.58	43.....28.99	
E. coli	49	68.05	20	57.14	6	19.35	75.....50.72	
Ps. pyocya nea	10	13.89	6	17.14	5	16.13	21.....21.22	
Yeast cells	2	2.78	1	2.86	1	3.23	4.....2.90	
Nocardia	3	4.17	-	-	-	-	3.....2.17	
Sterile cases	12	16.67	1	2.86	1	3.23	14.	10.14



