

عاصفة من الاجهاض تجتاح قطيع من أبقار الفريزيان
فى محافظة قنا

م. النجار ، ع. عبدالمطلب ، ط. العلاوى ، أ. عامر

قام الباحثون بوصف عاصفة الاجهاض التى حدثت بين قطيع أبقار الفريزيان
فى محافظة قنا خلال شهر نوفمبر سنة ١٩٧٧ م التى أدت الى اجهاض عدد
خمسة عشر حالة ووفاة عشرة من الأمهات .

وقد ناقش الباحثون الطرق المحتملة لحدوث العدوى وطرق التشخيص
والخطوات التى اتبعت لايقاف انتشار المرض .

Depts. of Obstetrics, Gynecology and A.I. and Medicine & Infectious
Diseases,
Faculty of Vet. Med. Assiut University,
Heads of Depts. Ptof. Dr. El-Naggar and Prof. Dr. S. El-Amrousi.

AN ABORTION STORM AMONG THE FRIEZIAN CATTLE

IN QUENA PROVINCE, A.R. EGYPT.

(With One Table and One Figure).

By

M.EL-NAGGAR, A.A.MOTTELIB, T.EL-ALLAWY and A.AMER.

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SUMMARY

An abortion storm of brucellosis occurred on November, 1977 among a herd of 50 Friesian cows in Quena Province, A.R. Egypt. It lasted for about one month, led to 15 cases of abortions and death of 10 mother animals. The clinical condition of the animals, methods of diagnosis and control has been discussed.

INTRODUCTION

Brucellosis, the most common cause of abortion in cattle, being widely spread in all countries, especially in areas where there is constant movement of cattle. In Arab Republic of Egypt, various investigators determined the incidence of the disease among cattle and buffaloes through the use of serological tests. ZAKI, (1965) showed that the disease was prevalent in a higher rate in foreign breeds than in native ones, still higher in cattle than in buffaloes, with an incidence of 4.4% in foreign cattle and 1.1% in native cattle. The highest incidence of the disease among Friesian cattle in governmental farms was 6.4%. Meanwhile, AHMED (1939) reported the percentage as 11.2%.

GOHAR et al (1940) reported 20% and KAMEL (1953) 1.1% in native breed cattle. Also, ALTON (1963) reported a percentage of 4.8% among foreign breed in governmental farms in Egypt. KAMEL and ABDEL-FATTAH (1961) showed an incidence of 23-25% among cattle in Seds farm.

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EL-AHWAL, *et al* (1968) found that out of the 860 tested buffaloes and cattle, 27 were positive representing 3.14%.

EL-GIBALY, *et al* (1975) pointed out that an abortion storm of brucellosis appeared in a friezian dairy farm in Menofia Province during january and february 1970.

The aim of this work is to describe and analyse the circumstances of such an outbreak of brucellosis which occurred in Quena Province among the friezian cows that led to serious financial losses.

MATERIAS AND METHODS

The Clinical History of The Herd:

The herd concerned consisted of 50 friezian cows, 22 of them were pregnant for the second time and 28 were pregnant heifers. They were chosen from friezian parents, kept and bred at Bany Morr farm, Assiut Province. All animals were pregnant in the last trimester of pregnancy and very in age from 3-5 years.

Such a herd was chosen to be the nucleous of a dairy herd at Quena Province. They were transported by cars on 10th of Oct. 1977 to the new stables at Quena. After about one week to 10 days, symptoms of deprived appetite and anorexia started to appear on some individual cases. Abortion started to occur on the second of November 1977 together with some cases of deaths of the dams that began on the 4th of November 1977.

The following steps were carried out: Segregation of the diseased as well as aborted animals, body temperature was recorded together with the symptomatic treatment with antibiotics as well as glucose saline and heart tonics. Milk and blood samples were taken for serological tests, both from the diseased as well as from the contact animals. Post-mortem examination of the dead animals and the aborted foeti were done. Samples were taken and send to the Veterinary Research Institute at Dokki, Cairo for examination and to confirm our results. Sanitary

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precautions and strict hygienic measures were applied and they included:

- a- Segregation of the diseased and aborted animals in a place far away from the others, special attendants were made for this group.
- b- Thorough washing and disinfection of the water troughs by potassium permanganate solution.
- c- Tying each animal in a special stand, all animals were washed and cleaned from outside with mild antiseptic.
- d- Good cleaning and washing of the stables by putting soda lime on the floor and water applied on it, kept for 24 hours, then washed.

RESULTS

Figure(1) shows the daily variations in the temperature of 4 cows with the date of abortion. It should be noted that the temperature ranged from an average of 38.5 to 41.8, it usually shows a peak just before abortion occurs followed by a drop. After abortion it behaves irregularly.

A total number of 15 cases of abortions happened within 18 days with the rate of about 2-3 cases per day. All the aborted foeti vary from 5-9 months in age. Two aborted foeti were at full term as revealed from their appearance, the shape and arrangement of the incisor teeth and the colour and distribution of the hair.

Table(1) shows the number and the date of abortions, the condition and fate of the mother animal and the age of the aborted foetus.

The aborted foeti were mostly stained with meconium. There is a reddish serous fluid in the subcutaneous tissues, also a similar fluid being present in both the thoracic and the abdominal cavities. There is bronchopneumonia with clear congestion of the lungs. Both the serous and the mucous membranes of the foetus are red and congested. Enteritis with muco-purulent exudate is always present in both the intestine and the 4th stomach.

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Direct culture and smears were made from both the foetal stomach contents, the lungs, the liver, the heart blood and the chorion of the placenta. All these samples demonstrated the presence of the gram negative cocco-bacilli when examined microscopically.

It should be noted that 10 cows that aborted, died after few days from abortion. The post-mortum findings of these cows revealed nothing at all all over the body more than pyometra together with lymphadinitis in the supramammary lymph node. Stained smear examination revealed the gram negative cocco-bacilli.

Agglutination tests both on blood serum and milk whey were done for the diseased as well as for the contact animals using antigen which was prepared by the Vet. Research laboratories, Dokki, A.R. Egypt. The abortus bang ring test was also done on pools of milk from the lactating animals and positive reactions were obtained using the Triphenyle tetrazolium stained antigen.

In all cases of abortions, the placenta was always retained. Manual interference was done on the days following abortions to remove it. A brownish yellow muco-purulent exudate is found on the foetal membranes and the cotyledons. The foetal cotyledons showed areas of necrosis, haemorrhagic spots and clumped villi.

The treated animals with antibiotics which were given both systemic and intrauterine showed improvement.

During the period of the storm, 4 cows gave rise to normal birth, the calves remain alive for one week to 10 days, however, they were suffering from enteritis, two of them died.

DISCUSSION

In this work 15 cases of abortions had been observed within a period of 18 days. All these cases were in the last trimester of pregnancy. Such high number of abortions together with the presence of the

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same post-mortum picture among all the aborted foeti, led to the suggestion that it is an abortion storm caused by brucella. ROBERTS (1971) stated that in a susceptible herd, the disease acts as epizootic causing abortion in 90% or more of the pregnant cattle. In more chronically infected herds, the heifers cattle frequently abort while the older immune cattle remained in the herd unaffected. He further stated that with regard to the history of brucellosis in a herd, the presence of one or more abortions with typical changes in the foetus and foetal membranes were sufficient to make a possible diagnosis of abortion due to brucellosis. In addition, LAING (1970) mentioned that when brucellosis was introduced into a clean herd of susceptible animals, the disease may run an acute course with 50% or even 100% of the animals aborting. The percentage of the animals which abort will depend on the percentage of pregnant animals and on the stage of pregnancy at the time of introduction of the disease.

Both the clinical and the post-mortum findings observed in this abortion storm had been described by ROBERTS (1971), who mentioned that abortions due to brucellosis were most likely to occur from the 5th month to full term. They were most commonly observed at the 6th, 7th and 8th months of pregnancy. Retained placentas frequently follow abortions. Abortions are frequently associated with metritis and a persistent vulvar discharge. Occasionally an infected foetus may be expelled alive but it dies soon after birth.

However, a phenomena was observed during this outbreak, that the death of the mother animals occurred few days after abortion. This has not been mentioned before in the available literature in connection with brucellosis. Such an observation can be explained by the severe virulence of infection and the resulting septicaemia that follows abortion together with the purulent metritis which was always observed in these cases.

Diagnosis of such an outbreak was based mainly upon the clinical

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history of the herd, the symptoms of the diseased animals, in addition to the results of the culture and smears made from the aborted foeti, the placentas and the uterine exudate. Although these two items were so sufficient to make sure that the outbreak is due to brucellosis, yet the serum agglutination test and the A.B.R. were also carried out. Both tests were found positive for all the diseased and the contact animals. KAMEL (1953) suggested a titre of 1/80 and over as an indicative of infection.

Concerning the source of infection and the method of spread of the disease in this outbreak, there are two possibilities. First is that these animals were already infected from the original farm at Bany Morr and as pregnancy advances, the resistance of the animals become lowered. Another explanation is the long transport (about 250 km) together with the change in the ration and the managerial conditions may played a rol in lowering the resistance of these cows, so that the storm started to appear. Gillman (1951) stated that cattle in the incubation period of the disease may be negative to the blood tests and then abort two to three weeks later due to brucellosis. He added that the disease is dependant upon the stage of gestation at which exposure to infection occured, the earlier the stage of gestation, the longer the incubation period.

The stress of transportation and changing the condition of living might be one of the main predisposing causes which accelerated the development of the disease which in our openion originally comes with the animals from the original farm.

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TABLE (1)

The rate of abortion and age of the aborted foeti.

Serial No.	Number of mother Anim.	Date of abortion	Age of aborted foetus	Remarks
1	2490	2.11.1977	8 months	mother dead on 4.11.77
2	14	2.11.1977	7 months	" " " 8.11.77
3	146	2.11.1977	8 1/2 months	" " " 5.11.77
4	7125	4.11.1977	6 months	" " " 6.11.77
5	7488	5.11.1977	6 months	
6	7135	6.11.1977	5 months	" " " 10.11.77
7	1620	7.11.1977	7 months	" " " 10.11.77
8	2037	7.11.1977	7 months	" " " 11.11.77
9	176	10.11.1977	8 months	
10	415	12.11.1977	5 months	
11	7166	13.11.1977	5 months	
12	199	12.11.1977	7 months	" " " 15.11.77
13	7477	15.11.1977	9 months	
14	38	19.11.1977	8 1/2 months	" " " 20.11.77
15	7406	20.11.1977	9 months	" " " 20.11.77



