DETECTION OF BOVINE TRICHOMONIASIS OF BULLS IN BASRAH SLAUGHTERHOUSE

Baqer J. Hassan

Department of medicine , surgery and obstetrics , collage of veterinary , university of Basrah ,Basrah, Iraq .

(Accepted 8 January 2013, Received 7 March 2013)

Keywords: trichomoniasis, slaughter house

ABSTRACT

Bovine trichomoniasis is a venereal disease of cattle caused by the protozoan *Trichomonas fetus* . The study based on collection and diagnosis 200 samples of preputial wash from bulls that send to the Al-Tuaisa slaughter house in Basrah private by made a slide smear stained with Gemza stain . The study starts at 2011 and extend to 2012 . The result shows that the percentage of infection in bulls that slaughtered in a slaughter house of Basrah private was 2% .

INTRODUCTION

Bovine trichomoniasis is a venereal disease of cattle caused by the parasite *Trichomonas fetus* . This disease causes early fetal loss and occasional late – term abortions ; it may also extend the breeding \calving season . *Trichomonas fetus* lives on the surface of the penis and prepuce of the bull and in the reproductive tract of the cow . *Trichomonas fetus* prefers a reduced oxygen environment and it multiplies in the small folds of tissue on the bulls penis . Because older bulls have more numerous and deeper crypts (1) and more easily infected , using young bulls is part of a disease management strategy. There are no obvious signs of *Trichomonas fetus* in the male and early fetal loss is the only sign of disease in the female (2,3) . Trichomoniasis is caused by sexually transmitted parasite (*Trichomonas fetus*) which is belongs to the phylum parabasalia (4) . Parapasalids are an aerobic flagellates without mitochondria , most of these parasites live in the alimentary or urogenital tract of vertebrates and invertebrates . A few species such as *Trichomonas vagainalis, Trichomonas gallinae , Histomonas meleagridis and Trichomonas fetus* are pathogenic in the urogenital or alimentary tract of various animals (5) . Trichomonas means ’’Three – haired single –celled protozoan’’ which accurately depicts some of the morphological characteristics of the organism . *Trichomonas fetus* is a pyriform –shaped protozoan with a rounded anterior end and a pointed posterior end , it is size can vary from 10-25 µm in length and 5-10 µm in width . *Trichomonas fetus* has a single nucleus and four flagella , three of the flagella are located on the anterior end while

the fourth extend backward . One side of the organism has an undulating membrane with three to five waves and a characteristic vibrating movement (6) .

In Bulls similar to most venereal disease in domestic animals the male is an a symptomatic carrier , while the female suffers identifiable consequences of Trichomoniasis . *Trichomonas fetus* localizes in the smegma (secretions) of the epithelial lining of a bulls penis , prepuce and distal urethra (7) . The organism does not readily invade the epithelium nor typically invoke an effective immune response in the bulls (8) . *Trichomonas fetus* causes no penile or preputial lesions and quality and doesn't affect semen quality or libido . However any bull exposed to *Trichomonas fetus* in a natural breading situation is capable of becoming chronically infected (9) .

Trichomoniasis in the cow occurs after couitus with an infected bull , the organism inter to the reproductive tract within 1-2 week via vagina , pyometra and abortion in the first trimester which is the first physiological signs of disease resulting in repeat breading , irregular heat cycle , longer calving and reduce pregnancy rate , the uterus may become infected in some cases (10) infertility due to early embryonic death is the most economical clinical sings of disease (11) .

There are many sampling techniques have been utilized for obtaining diagnostic specimens in the bull including (swab technique , dry pipette technique , wet pipette technique , the douche technique and metal brush technique) these techniques focuses on recovering preputial smegma for either direct microscopic evaluation or in vitro cultivation (12) . A tentative diagnosis may be based on the history and clinical signs to confirm this diagnosis depends finding the organism in at least one animal in the herd (13) . This is done by an by an official diagnostic lapratory ; a) finding the organism in an aborted fetus , b) culturing the organism from a vaginal tract swab of a cow or from the pyometral discharge from a cow , c) and /or finding the organism in a smegma collected from the inside sheath around the penis of one of the herd bulls (14,15) **.** A few tips for prevention bovine trichomoniasis including : (keep fences in good repair to prevent accidental contact with potentially infected cattle , replacement heifers should either be pregnant or less than six months of age , do not retain open females that failed to breed the year before ,replacement bulls should be known virgins , or have negative test before they enter a herd (16). There is no effective , FDA-approved treatment for Trichomoniasis in cattle (5)

MATERIALS AND METHODS

The study based on collected 200 sample of preputial wash from bulls that send to the slaughter house of Basrah private , the study start in 2011 and extend to 2012.

Sample collection : the external preputial area was cleaned with disposable paper towels without soap or disinfectant . A 10 ml of water infused to preputial fornix without aspiration , and then negative pressure was applied with the syringe to collect some of the preputial smegma (8) . After removing the pipette from the sheath , the sample was placed immediately into the transport tube , a new syringe was used for each bull .

Diagnosis : In this study each sample were centerfugated , after that one drop had been taken from the precipitate on the slide making smear after drying the smear stained with Gemza stain 10% for 30 minute then repeat the test three time to insure from the result for detection of protozoa (*Trichomonas fetus*) in the samples as reported by (14) .

Result and discussion : the result show that there is only (4) bulls show positive test for *Trichomonas fetus* (by three time testing) the percentage of infection in bulls that slaughtered in slaughter house of Basrah private was 2% , this percentage of infection is very danger in spreading of disease into the country from infected bulls to the cows , causing early abortion and other combined clinical sings , because of Trichomoniasis is one of the commonest sexually diseases in cattle it is capable of causing mortality in cows . Because of the Trichomonas fetus lives in the sheath and skin folds of the bulls penis of the infected bulls (1) the sample collected from the smegma of the bulls to identified the organism , the preputial smegma were cloudy white in color some time tend to be white-yellow because of presence of some urine.

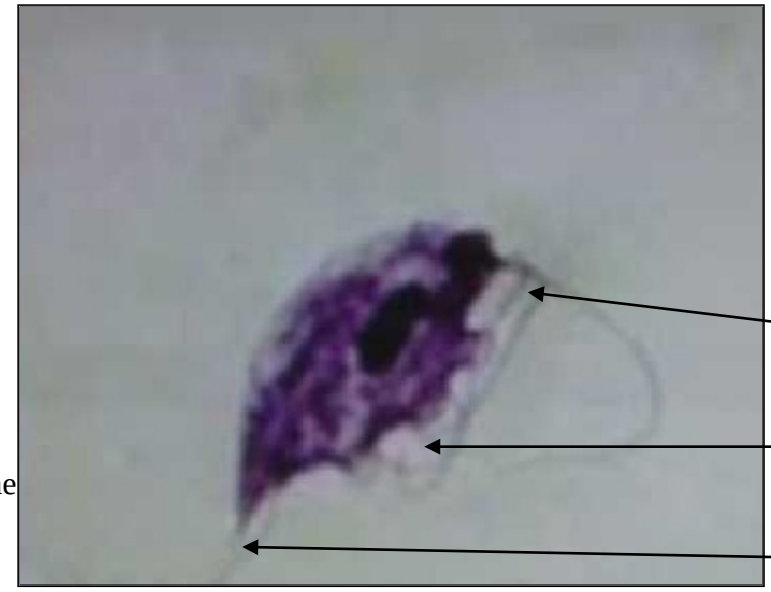

Fig.1) Trichomonas fetus at 100X magnification stained by Gemza Stain .

The diagnosis of *Trichomonas fetus* made by direct visualization of the parasite and according to the shape of *Trichomonas fetus* which contain three characteristics

flagella extend interiorly with undulating membrane with one flagellum extend posterior with three to five waves stained by 10% Gemza stain (fig.1) as described by (4) this is agreed with (1,17) which were reported that preputial smegma can be examined directly for the presence of Trichomonas fetus , undiluted sample of prenuptial smegma centrifuged and examined at 400X with bright-field microscope , Trichomonas fetus is identified as having three anterior flagella , one posterior flagellum and an undulating membrane , as well as characteristics rolling jerky motility . Prevalence rate of *Trichomonas fetus* obtained in this present study was 2% this result revealed that the incidence of *Trichomonas fetus* infection was not agreed with (17) who reported that the percent of trichomoniasis in bulls was 0.27% positive by molecular based assay in Auburn city in 2005 and 0.7 in 2006 in the same place and also the percent study didn't agreed with (18, 2, 3,11) which they found prevalence rates of infected bulls in united state were 7.5% , 7.3% , 7.8% and 4.1% respectively . The result of percent study was some that near to the (6) which is reported that 3.1% of bulls in Florida was infected with *Trichomonas fetus* in 1999. The study conclude that there are serious dangerous of spreading of *Trichomonas fetus* in Basrah in case of there is no any control method has been done.

الكشف عن الترايكوموناسز البقري في العجول في مجزرة البصرة

باقر جعفر حسن الحسيني

الطب الباطني والجراحة والتوليد ، كلية الطب البيطري ، جامعة البصرة ،البصرة،العراق.

الخلاصة

يعتبر مرض ال Trichomoniasis في الابقار من الامراض التي تنتقل جنسيا بسبب الاصابة بطفيلي Trichomonas fetus . اعتمدت الدراسة الحالية على جمع وفحص 200 عينة من غسول القلفة الذكرية من العجول التي ارسلت الى مجزرة الطويسة في محافضة البصرة بواسطة الفحص المجهري المباشر وذلك بعمل مسحات على سلايد زجاجي وتصبيغها بصبغة الكمزا ثم فحصها وكتابة النتائج . بدات الدراسة من سنة 2011 لغاية 2012 وبينت النتائج بأن نسبة الاصابة في العجول المذبوحة في المجزرة المذكورة كانت 2% .

REFERENCES

1- Youngquist R. S. (1997) Bovine venereal diseases . current therapy in large animal Theriogenology . W. B. Saunders co. :63-355.
2- Abbitt B. , Meyerholz G. , (1979) . Trichomonas fetus infection of range bulls in south Florida . Veterinary medicine south American clinic 74:42-1330.
3- Helena M. T (2012) . Bovine Trichomoniasis in Gregory Country . Journal of animal industry board ,South Dakota 57501-4503.

4- Taylor M. A. , Marshall R. and Stack M. (1994) . Morphological differentiation of *Trichomonas fetus* from other protozoa of the bovine reproductive tract , Brazilian Veterinary Journal , 150:73-80.

5- Wilson S. , Kocan A. , Gaudy E and Godwin , (1979) . The prevalence of trichomoniasis in Oklahoma beef bulls , Journal of Bovine practical , 14:10-109.

6- Rae D. O. , Crews J. E. , Greiner E. C , Donovan G. A. (2004) . Epidemiology of Trichomonas fetus in beef bull populations in Florida . Journal of Theriogenology 61: 60- 853.

7- Parsonson I. M. , Clark B. L. and Dufty J. H. (1974) . the pathogenesis of Trichomonas fetus infection of the bull . Australian veterinary Journal , 50: 421-423 .

8- Hayes D. C. , Anderson R. R. and Walker R. L. (2003). Identification of Trichomonadid protozoa from the bovine preputial cavity by polymerase chain reaction and restriction fragment length polymorphism typing . Journal of Veterinary diagnosis and investigation , 15: 390- 194.

9- Kahn C. , (2005). Trichomoniasis . The merck veterinary manual 9th ed . Merck & co. Inc: 43-1142 .

10- Gregory M. W. , Elles B. and Redwood D. W. (1990) . Comparison of sampling methods for the detection of *Trichomonas fetus* . Journal of veterinary research ,4 : 1430-149

11- Bondurant R. , Anderson M. , Blanchard P. , (1990). Prevalence of trichomoniasis among California beef herds . Journal of American Veterinary medicine association , 196:3-15.

12- Parker S. , Capbell J. , Ribble C and Gajedhar A. (1999). Comparison of two sampling tools for diagnosis of Trichomonas fetus in bulls and clinical interpretation of culture result . Journal of American veterinary medicine association , 215: 231-135 .

13- Clark B. L. , Dufty J. H. , Parsonson R. D. (1997). Studies on the transmission of *Trichomonas fetus* , Australian veterinary Journal. 53: 170 – 72 .

14- Felleisen R. J. , Schimid N. , Gottstein B. (1997). Comparative evaluation of methods for the diagnosis of bovine *Trichomonas fetus* infection . Journal protozool Research, 7:90-101.

15- Mukhufhi M. , Irons P. C. , Michel A. , Peta F. ,(2003). Evaluation of PCR test for the diagnosis of *Trichomonas fetus* in bulls : effect of sample collection method , storage and transport medium on the test . Theriogenology , 60(7):1269-1278.

16- Mancebo O. A. ,Russo S.M. , Carabajal L. L. & (1995) . Persistence of Trichomonas fetus in naturally infected cows and heifer in Argentina . Journal of veterinary parasitology , 59:7-11 .

17- Rodning S.P. (2006) . prevalence of Trichomoniasis in Alabama beef bulls . Master thesis , Auburn , Alabama : 5-62 .
18- Johnson A. , (1964). Incidence and diagnosis of trichomoniasis in Western beef bulls . Journal of American Veterinary Medicine Association ,145: 10-100.