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**PATHOLOGY OF OCULAR ACTINOBACILLOSIS
IN BALADY RABBITS**
(With 5 Figures)

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التغيرات الهاتولوجية في عيون الأرانب البلدية المصابة بالاكثيوباسلس

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وجدت خمس اصابات بالمرض في عيون الأرانب في قطيع مكون من مائة أرنب . وبالفحص العيني وجدت كميات كبيرة من الصديد في عيون الارانب المصابة . وعند الفحص الميكروسكوبي للعين وجد أنها مصابة بميكروب الاكثيوباسلس - ولم توجد أى التهابات صديدية في أى من الأعضاء الأخرى للحيوان . وعلى هذا اعتبرت العدوى موضعية عن طريق بعض التسلخات .

SUMMARY

Among flock of 100 balady rabbits, 5 rabbits had unilateral or bilateral Eye affections. Postmortem examination revealed a large amount of pus accumulated in the eye chambers. Histopathological changes were those specific for actinobacillus infection. The suppurative process was not observed in other organs. Infection was probably local and occurs through minue abrasions.

INTRODUCTION

Actinobacillosis is a chronic disease of animals. In cattle the disease is best known as a disease of the tongue, the infection may occur in any of the exposed soft tissue especially those of mouth and neck, occasionally it may involve the wall of the forestomachs or any portion of the skin (JUBB and KENNEDY, 1985). In sheep the typical lesions are found on lips, parotid and submaxillary regions NEWSOM's (1965). TAYLOR (1944) compared three culture of Actinobacillus lignieresii with seven culture of Bacillus purificens isolated from sheep and found them identical. MRAZ (1969) stated that mice and chick embryo are more susceptible to actinobacillus infection than guniea pigs or rabbits. Actinobacillus piliformis is responsible for enteritis in rabbits, SPARROW and NAYLER (1978). NELSON (1930, 1931) stated that a similar organism differing only in minor particulars from Actinobacillus actinomycetemcomitans was isolated from the middle ear of white rats in which it was causing suppuration.

According to the available literature there is little report on the disease in rabbit. Since the later is an exclent model for animal research and also for meat production, the aim of present work is to throw some light on actinobacillus infection in rabbits.

MATERIALS and METHODS

The materials of this study consisted of 100 balady rabbits examined grossely. Among these, 3 rabbits were showing bilateral affections of the eye while other two rabbits revealed a unilateral affection. After slaughter the eyes from these five rabbits were examined grossely, removed and fixed in 10% neutral buffer formalin. After 48 hours fixation, the eyes were sectioned, examined, fixed again in 10% neutral buffer formalin for 4 days. They were washed in water and further processed for histopathological studies. Sections of 5 micron thickness were stained with H & E, gram stain and examined.

RESULTS

Macromorphological findings :

In three rabbits, the infection was bilateral, however in other two cases it was only unilateral. The affected eyes were enlarged and protruded from the orbital cavity (exophthalmia). The eye ball was tender while the eye-lids were oedematous and swollen. The anterior surface of the eye ball was diffusely white and the corneal pigmentation was lost. The eye balls were of considerable size when removed from the orbital cavity. Sectioned eye revealed that anterior and posterior chambers of the eye were filled with pus. The anatomical structure of eyes could not be clearly identified. The degree of affection varied among the different cases. Some eyes were enormously enlarged and diffusely discoloured while others were moderately affected.

Microscopical examination of different sections from the eyes revealed that, the cornea (Fig. 1), sclera, retina and choroid (Fig. 2) were involved in the inflammatory process. The entire globe of the eye was inflamed. The posterior surface of the cornea showed extensive connective tissue proliferation which was infiltrated in most of its parts with abundant population of lymphoid and neutrophil cells (Fig. 3). The sclera, retina and choroid showed wide diffuse dense connective tissue proliferation (Fig. 4) which also showed neutrophil cells reaction. The bundles of these dense fibrous connective tissue entrapping a large amount of pus in which multiple rosettes shaped colonies (gram negative) of actinobacillosis could be demonstrated. The rosettes consisted of colonies of the organism surrounded by radiating clubs and suspended in relatively abundant amount of pus (Fig. 5). Oedema was sometimes observed in the vicinity of the lesions. When gram stains was applied, gram negative bacilli was demonstrated in the lesions.

DISCUSSION

Actinobacillosis is being recognised in many animal species including cattle (JUBB and KENNEDY, 1985) and sheep (THORSHANG, 1934; AYNAUD, 1934; THOMAS, 1931; MARSH and WILKINS, 1939). However analysis of the available literature revealed no report on ocular actinobacillosis in rabbits. In the present work actinobacillosis was diagnosed histopathologically in the eyes of five balady rabbits. The pathological lesions observed in the eyes of these rabbits were specific to actinobacillus infection and were consent with those described by (JONES and HUNT, 1983) and (JUBB & KENNEDY, 1985) in different organs. The fact that the infection may occur unilateral

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or bilateral with the absence of suppurative process in other part of the body, indicate that the infection was local and probably occur through abrasions. It was also demonstrated that the suppurative process extend to involve all the layers of the eye (Panophthalmitis). In the present study it was also recognised that the inflammatory process destroyed all the anatomical structures of the eye and result in loss of sight with a delterous effect on the rabbits specially when the infection was bilateral.

From this study we can concluded that actinobacillosis could be the cause of the suppurative panophthalmitis in balady rabbits. Infection was local and probably occur through abrasions. The infection result in destruction of all anatomical structure of the eyes with loss of vision.

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LEGENDS OF FIGURES

- Fig. (1): Showing connective tissue proliferation and suppuration of the cornea. (H&E, 6x 10 X).
- Fig. (2): Showing oedema and leukocytic infiltration of the choroid. (H&E, 10 x 10 X).
- Fig. (3): Showing connective tissue proliferation with lymphocytic infiltration of the cornea. (H&E, 10 x 25 X).
- Fig. (4): Showing diffuse fibrosis of the normal structures of the eye. (H&E, 10 x 6 X).
- Fig. (5): Showing rosettes suspended in abundant amount of pus. (H&E, 10 x 40 X).



