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Pathological responses of Perifolliculitis, folliculitis and furunculosis in camel (*Camelus dromedarius*)

Chandra Pratap Singh, Manisha Mathur, Hemant Dadhich and Subha Ganguly

Abstract

In the present study a total of 95 skin samples were collected from various district of Rajasthan and studied. Out of 95 skin samples 67 samples were positive for various types of dermatitis in camel and further analysed for determining the histopathological and bacteriological aspects of different types of dermatitis. Perifolliculitis, folliculitis and furunculosis were recorded in 14.92 % cases of dermatitis in camel. Histopathological changes revealed the presence of inflammatory infiltration in the wall and lumen of the follicle along with the rupture of follicular wall. Most commonly of the bacteria isolated from the cases of dermatitis during the present study were *Staphylococcus aureus*.

Keywords: Perifolliculitis, folliculitis, furunculosis, camel

1. Introduction

The camel (*Camelus dromedarius*) is an important animal component of the fragile desert ecosystem. Even in the modern era of machines, the efficiency of camel in desert cannot be replaced. The proverb “Ship of the desert” named its epithet on account of its indispensability as a mode of transportation and draught power in desert but the utilities are many and are subject to continuous social and economic changes

The camel has a low susceptibility to diseases but skin involvements like contagious skin necrosis, dermatitis, wounds, abscesses or similar problems were commonly observed in camels. [1-4]

Staphylococcus spp. especially *S.aureus* is one of numerous infections worldwide, with clinical manifestations including skin and soft-tissue infection, sepsis and pneumonia. [5-7]

2. Materials and Methods

For the present study, a total of 95 skin sample of camel were examined, out of those 67 skin samples showing frank macroscopic lesions were collected to identify the various types of dermatitis in camel in the different areas of Rajasthan. Histopathological and bacteriological aspects of different types of dermatitis were also studied. The tissue samples were collected for histopathology in 10 % formalin. Tissue samples were processed manually for paraffin embedding by acetone and benzene technique [8] for histopathology. Tissue sections of 4-6 μ (micron) thickness were cut and stained with haematoxylin and eosin staining technique as a routine. The identification of bacteria was done on the basis of culture and morphological characteristics as per standard method. [9]

3. Results

This condition was recorded in 10 (14.92 %) cases. Grossly, in perifolliculitis a wide spread alopecia on the various parts of the body was found (Figure 1) whereas in folliculitis and furunculosis erythematous follicular papules were usually seen on abdominal area.

Microscopically, perifolliculitis and luminal folliculitis showing inflammatory infiltration of neutrophils, lymphocytes around the wall and lumen of follicle (Figure 2).

In folliculitis, some cases were hyperplasia of epidermis and accumulation of inflammatory cells mainly of neutrophils within follicular wall in which presence of melanin in hair shaft (Fig. 3). In some cases show luminal folliculitis in which inflammatory cells present in lumen of follicle (Figures 4 and 5).

In furunculosis, there were destruction of majority of follicular epithelium which was destroyed by the inflammatory reaction with release of hair shafts and keratin debris in the dermis. Pyrogranulomatous inflammatory infiltration may also be observed in few cases of furunculosis (Figure 6).



Fig 1: A camel showing wide spread alopecia

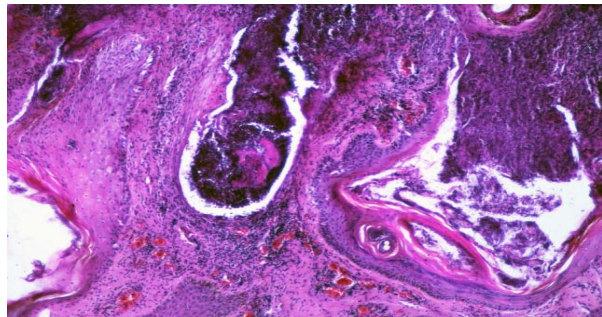


Fig 2: Microphotograph of skin having perifolliculitis and luminal folliculitis showing inflammatory infiltration of neutrophils, lymphocytes around the wall and lumen of follicle. H&E (100X)

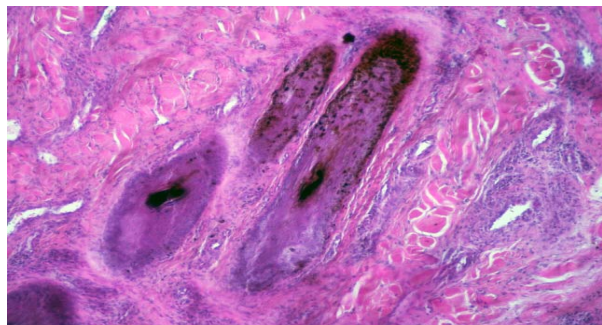


Fig 3: Microphotograph of skin having folliculitis showing inflammatory infiltration of neutrophils and melanin pigment in the wall of follicle H&E (100X)

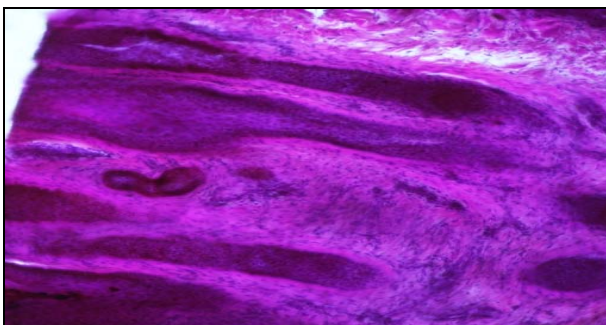


Fig 4: Microphotograph of skin having luminal folliculitis showing inflammatory cells in lumen of follicle. (H&E 100X)

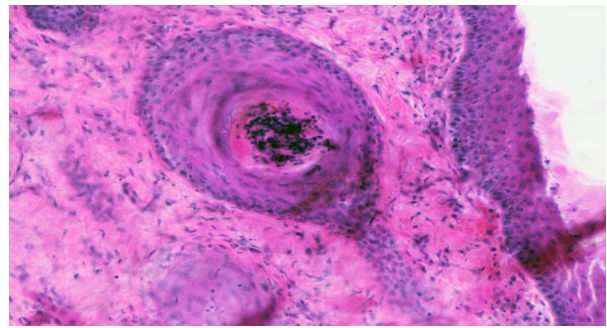


Fig 5: Microphotograph of skin having folliculitis showing inflammatory cells in lumen of follicle. H&E (200X)

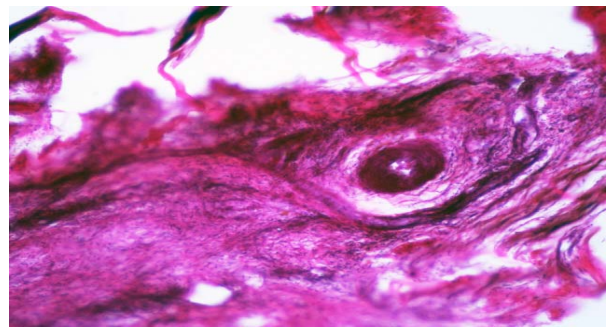


Fig 6: Microphotograph of skin having furunculosis showing destruction of follicular epithelium, inflammatory infiltration, predominantly of mononuclears. H& E (100X)

4. Discussion

The present study revealed gross changes in the condition as alopecia on the various parts of body alongwith formation of papules. Microscopic alteration observed in perifolliculitis, folliculitis and furunculosis were infiltration around the follicle, in the wall as well as lumen of follicle and rupture of wall with inflammatory infiltration respectively. These gross and microscopic finding have also been explained well by Jubb *et al.* [10] in large domestic animals and Scott *et al.* [11] in the small animal dermatological disorders.

5. Conclusion

In the present study, 67 skin samples showed the symptoms of dermatitis in camel. Perifolliculitis, folliculitis and furunculosis were recorded from these cases. *Staphylococcus aureus* was revealed as the most prevalent bacteria in these cases of dermatitis reported in the present investigation.

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