قســـــم : الولادة ـ كلية الطب البيطرى ـ جامعة الاسكندرية .
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دراسة لبعض اصابات الجلد فى الحيوانات المجتره

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اجـرى البحث على ١٩٦ حيوانا مجترا وتم فيه تسجيل عدة اصـابات للجلد وكذا تـــــم وصف وتشخيص هذه الأصابات واجراء العلاج المناسب لكل منها سواء دوائيا أو جراحيا ومن أهـم الأصابات الجلدية التى عوملـــت الاورام بأنواعها والسحجات الجلدية ومرض الجلد الاوديمـــى والقرادة بالذيل والقراع والالتهاب القرنى ومرض سقوط الشعر .

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STUDIES ON CERTAIN SKIN AFFECTIONS AMONG RUMINANTS

(With 8 Figures)

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SUMMARY

Certain cutaneous affections were detected among some ruminants. Their nature and symptoms together with the treatment of the lesions were detailed. Neoplasms, excoriation, oedematous skin disease, dermatitis, tail necrosis, hyperkeratosis, ringworm lesions and alopecias were among the encountered clinical cases.

INTRODUCTION

Skin of animals constitutes an aspect of clinical, economical and pathological importance. Different skin affections have been recorded in veterinary practice the most common of which are pitryasis, photosensitization, hyperkeratosis, impetigo, urticaria, eczemas, dermatitis, parakeratosis and erythema. In addition some surgical cutaneous affections such as neoplasms, ulcers, soreback, collargalls, sitfast, summer sores, wounds, contusions, burns, lesions of ulcerative lymphangitis in equines, oedematous skin disease in cattle and buffaloes, ringworm lesions, alopecia, excoriations and tail necrosis were also encountered among domestic animals; O'CONNOR (1950); EL-MEKKAWI (1958); SOLIMAN, and ISKANDER (1963); AWAD (1966); ANDERSON and KIRKOOD (1968); KHAMIS, HELMY and FAHMY (1973); FOUAD; SALEH; KHAMIS; SHOUMAN and FAHMY (1974) and Blood & Henderson (1979).

Along the present study, the authors have intended to throw light on certain cutaneous affections prevalent among our native animals of the ruminant species which are accomodated to our own enviromental conditions with special emphasis on their incidence, diagnosis and treatment.

MATERIAL and METHODS

196 cases of ruminant species presenting different localities in Egypt were collected and subjected to thorough clinical examination (see table). A full report on each case including the history, the nature of the lesion, the clinical symtoms and the area of the animal was recorded. The macro as well as the microscopic finding in most of the cases were fully detailed and summerized. Treatment whether conservative or surgical was also under taken.

RESULTS

Skin neoplasms including cutaneous papilloma, squamous cell carcinoma and fibromas were found affecting cattle and buffaloes, however, they were rare in camels, young aged animals were particularly affected. Their seats vary but they were usually detected on the dorsal surface, along the sides of the back, abdominal and perineal regions. In few cases, they were seen widely spread over the head, neck and all over the body (Figs. 1 & 2). The lesion usually takes a longtime to develop.

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Type of skin aff.	No. of cases
Skin neoplasms	21
Skin excoriations	30
O. S. D.	20
Dermatitis	13
Tail necrosis	17
Hyperkeratosis	13
Ringworm Lesions	61
Alopecia	21
Total	196

Tow forms were encountered; a hard pedunculated swelling usually cauliflower in appearance with a horny rough surface and the other indicating a small circumscribed, sessile unpedunculated swelling. In all cases, they were including the whole thickness of the skin. In others, the said growths were gathered to form clusters which bleed easily and become inflamed and even infected. The condition of the animals in long standing cases are extremely affected. As usual, the treatment comprised the surgical interference on the same principles.

Squamous cell carcinoma and sarcoma were not infrequently met with in cattle, rare in buffaloes and not encountered in camels. In foreign breeds, they were more common than in local breeds. Pathologically they had the signs of mitotic division which denotes malignancy. The perineal region was the prediliction seat, then the eye region and the mandibles. The growth rate was rapid, i.e. the swalling becomes gradually enlarged and sometimes gets ulcerated. Again surgical removal is the radical therapy for such tumours, however, the owners were advised to slaughter the animals for fear of recurrence. Fibromas were frequently observed in foreign breeds (Friesian-Jernsey). The said type of tumour is usually found at the neck, cheek, perineum and udder regions. Calves were less subjected, camels were affected to a lesser degree than cattle (Fig. 3). Pathologically, they proved to be of the benign type and their treatment comprised the surgical removal.

Skin excoriations (Fig. 4) comprised frequent affection in buffaloes and were mainly due to mechanical removal and shreading of the superficial layers of epithelium with exposure of the vascular area underneath the cuticle.

The areas commonly affected were the back and shoulder. The affected area may take a triangular, semicircular, oval, serrated or irrigular shape. The area becomes hairless, sensitive and exuding serous fluid. The main cause in buffaloes was found to be bad hygeine and skin parasites which sometimes irritate the animal and persuade it to itch through scratching against walls or hard objects.

Oedematous skin disease (O.S.D) was mostly seen among buffaloes, however, cows were less susceptible. The syndrome seemed to appear during the summer season. Characteristic symptoms were hypersensation of certain areas on the skin namely the dewlap, chest and the ventral part of the abdominal wall (Fig. 5). Painful oedema was seen scattered and sometimes opened oozing serous fluid usually tinged with haemolytic blood, stiffness and abduction of the forelimbs and the movement of the animal was restricted. Other lesions were seen in the form of skin erruption which appear suddenly at different areas of the whole body including carpal, tarsal, fetlock and pastern regions. The skin of such areas was seen sloughing leaving raw moist granulating surface. Such lesions were sometimes seen running pus under the sloughed areas. Corynebacterium pseudotuberculosis was isolated from the lesions accompanied by anthracoids. Blood was negative to filariasis which was expected to be the real cause of the disease. Local treatment comprised cleaning. lavage of the ulcerated area with mild acriflavine solution and application of polydermine ointment. Pencillin in high dosage was given i.m. as a general treatment. Surgical interference with such lesions seemed to give good results.

In cases of dermatitis, the deeper layers of the skin including the blood vessels and lymphatics together with secondary involvemtent of the epidermis were observed. Cattle were frequently affected more than equines. Two forms were mainly detected, the exudative and ulcerative. The exudative form was characterized by the presence of large diseased areas of the skin which appeared moist and covered with serous fluid while the roots of the hairs were kept. In few cases, phlegmonous inflammation of the area was observed. In the ulcerative form there were

hypersensitive areas of the skin especially on limbs. Small ulcers were seen scattered along the area discharging sanguinous fluid and pus. The locomotion of the animal is interfered with. Treatment comprised thorough cleaning of the lesion and washing with mild antiseptic organic solution and the application of terramycin skin ointment together with zinc oxide and cod-liver oil. Hygienic measures were advised to avoid moisture and contamination of the lesion.

Tail necrosis (Fig. 6) was detected in buffaloes more than in cows. The lesion was mainly confined to the tail, starting at its free end which gradually looses its tuft of hair. The tail skin then undergoes hyperkeratosis and the affected area is seen crusted, cracked and necrosed with paralysis of the tail and loss of function. In some instances, a greyish exudate with evil small was also detected and a process of putrifaction then started. In serious cases, the coccygeal bones were seen affected and runing sequestration. Formalin solution 10% proved to have good effect or surgical removal of the affected part of the tail is carried out.

Hyperkeratosis is merely local thickness of the keratinized layers of the skin due mainly to constitutional disturbances usually affecting camels and buffaloes. It was noticed that buffaloes, cattle and camels were the most susceptible animals exposed to the affection. Prediliction areas were the sides of the neck, withers and chest. However, the lesions might be generalized allover the body especially along the limbs (Fig. 7). In such cases, thickening an cordening of the skin together with loss of the hairs were always the characteristic symptoms. The skin looks dry, leathery and deeply greased while itching was not observed in all cases. Treatment comprised daily application of keratolytic agents such as salicylic acid ointment. It was also noticed that buffaloes responded more rapidly and completely to the said treatment.

The mycotic affection was seen affecting mainly cattle, calves were more susceptible. The lesions were seen in two forms, the first form was observed in young aged patients not exceeding one year where the lesions appeared as circumscribed, elevated areas of scaly skin, reaching the size of a small nut having a whitish colour at the beginning (Fig. 8). Later on, the colour is changed into yellowish or brownish mainly due to contact with dirts. The second form was confined to animals not less than one year old. Where the lesions were characterized by circumscribed patches of hairless areas at the affected part of the skin. The animals were seen always licking the affected areas. Selected site for mycosis was seen at the head especially on the face, above the muzzle, around the eyes and at the base of the ear. However, other parts of the body might be affected. The causative organism which isolated from the lesions was found to be Trichophyton verrucosum.

Alopecia was noticed among cattle and sheep especially young subjects. Dietetic deficiency or metabolic diseases appeared clinically to be the main factors causing such syndrome. The lesions were commonly detected on the back, shoulder and lateral abdominal wall. In calves, the hair was seen lost after gradual weakness and emaciation of the animal. In sheep, the wool became easily detached or totally lost. Most of the cases regained their skin luster and hair growth after recovery from the primary cause. Minerals and trace elements together with the application of cod liver oil locally gave good results. Diet rich in protein was also supplemented.

DISCUSSION

The results of the present work revealed that there are numerous skin affections which could be considered important if related to the economical value of the animals especially those species providing their hides or wool to human consumption. Naturally, the influential harm caused by such affections is not only confined to the local area of the skin, but also to the general condition of the animal which becomes devaluated and less productive. No doubt that the environmental conditions as well as the management and hygienic measures offered to the animals play a role for the infliction of such affections. By the environmental conditions we mean the climate, type of work as well as nutrition in addition with the well known traumatic injuries.

Along our presented cases, tumours of the skin of either the malignant type or the benign type were met with. It is interesting to state that camels showed less tendency to such tumours of both types. Also, malignancy was rarely recorded in buffaloes. Generally speaking, one can say that the foreign breeds were found more subjected to the malignant type than the native breeds. As regards the treatment, little to be mentioned other than the common

principles of excising neoplastic swellings.

As regards the cause of excoriations which were recorded in buffaloes, it seemed that it is due to accumulation of dirty material on certain areas of the skin due to bad hygiene facilitated by the less hairless condition of the skin in water buffaloes a fact which always expose the superficial layer of the skin to direct contact with the offending cause with subsequent irritation. The animal usually scratches hardly the lesion and hence shreading of the epithelium occurs and exposure of the inner skin layers for curing such cases, removal of the exciting cause and rest were found essential.

As regards the oedematous skin disease which was noted to be more prevalent in buffaloes than any other species, it was detected to spread more in summer season and in certain areas of high humidity and low temperature. The cause in our cases was not fully traced although FOUAD et al. (1974) have stated that filariasis are accused and so the use of antifilarial drugs were found successful for the treatment of such conditions. However, the use of systemic antibiotics against secondary invadors specially those of the pyogenic type was also recommended, by SOLIMAN et al. (1963).

It is noteworthy to mention that different types of ruminants are subjected to dermatitis which has been classified through our work into an exudative and an ulcerative forms. Naturally the hypersensitivity and the pain induced cause hinderance in locomotion of the animal when the lesions are on the limbs and in many cases, loss of the general condition. In our cases, the hygienic measures are proved to be neccessary together with avoidance of moisture and contamination of the lesion by applying zinc oxide and cod liver oil Ointment.

Tail necrosis was found to be mainly prevalent among buffaloes and rarely affects cattle. Most of the lesions were suffering hyperkeratosis and paralysis of the affected areas in addition to the other signs described fully by EL-MEKKAWI (1958). In our opinion, surgical amputation of the necrosed part of the tail still stands the only cure for such cases. It is also interesting to mention that buffaloes, cattle and camels were the more susceptible animals for hyperkeratosis which was recognised either in circumscribed area or may be generalized all over the body especially along the limbs. The loss of the skin through thickening and cordening as well as its damage could be economically recognized. The keratolytic agents were found effective, however, in most instances, the disease does not respond to any kind of treatment and according to our experience lesions in buffaloes healed more rapidly than any other species. Mycotic affections were seen mainly in cattle especially calves where the lesions are detected as elevated areas of scaly type or in the form of hairless patches. Our results concerning the type, character and treatment were not so far different from those recorded by FORD (1956) and REFAI and MILIGY (1968). Finally, the collected cases of alopecia were met within calves appeared to be due to dietetic difficiences or otherwise metabolic diseases simply because all animals showed weakness and emaciation. Naturally the correction of the diet especially for minerals together with diet rich in protein and vitamins will have a promising effect as stated by VERLAG and SCHAPER (1962) and BLOOD & HENDERSON (1979). On the other hand AUSTIN (1979) mentioned that alopecia may be due to either endo or exoparasites or hormonal disturbences, however, this latter etiological factors were only confined to dogs and cats.

In conclusion, it is worthy to say that the presented clinical cases were collected from different localities along a rather short period and hence other affections may probably exist and could be detected and added to our list.

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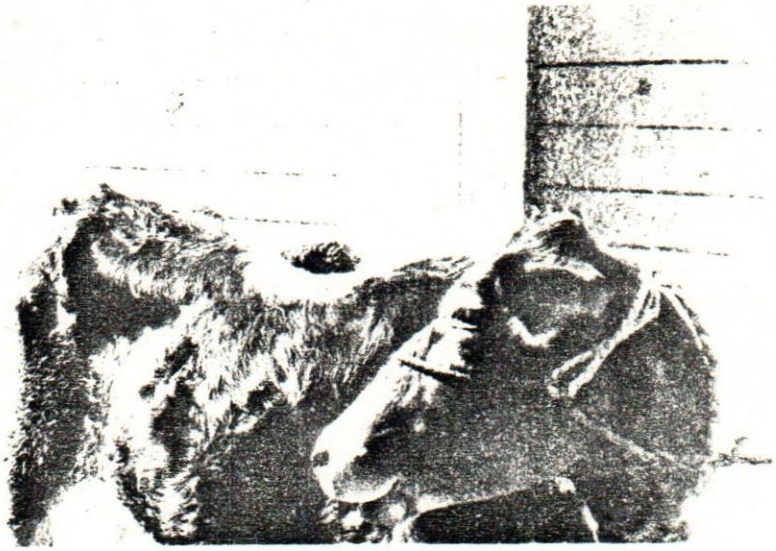

Fig. (1): Cutaneous papilloma on the back of the calf.

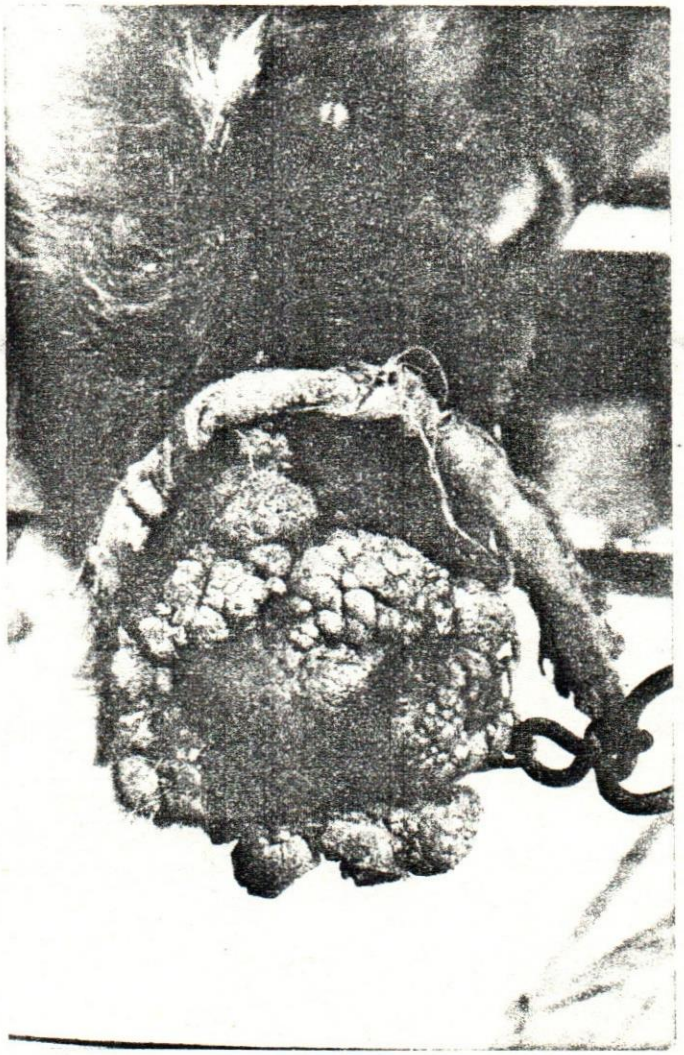

Fig. (2): Cutaneous papilloma at the lips and around the nostrils.

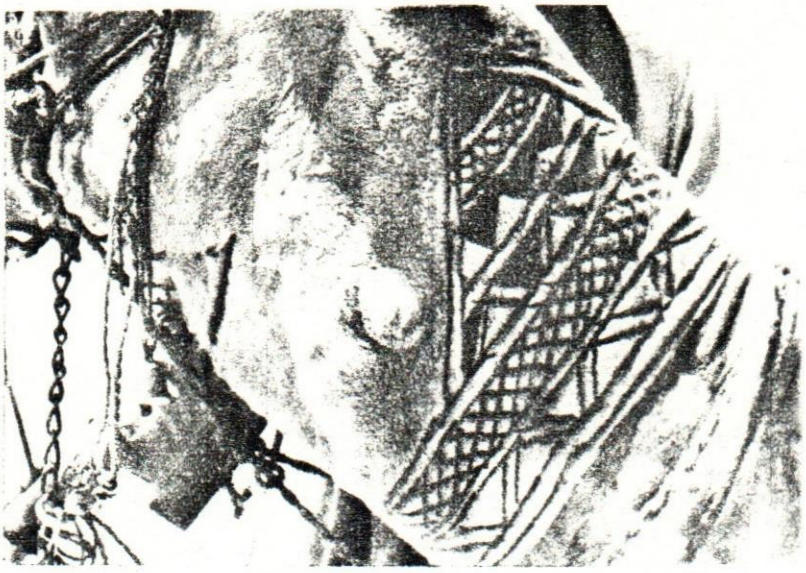

Fig. (3): Fibroma growing on the left side of the neck of a camel.

Fig. (4): Skin excoriation at the pack of a buflato cow.

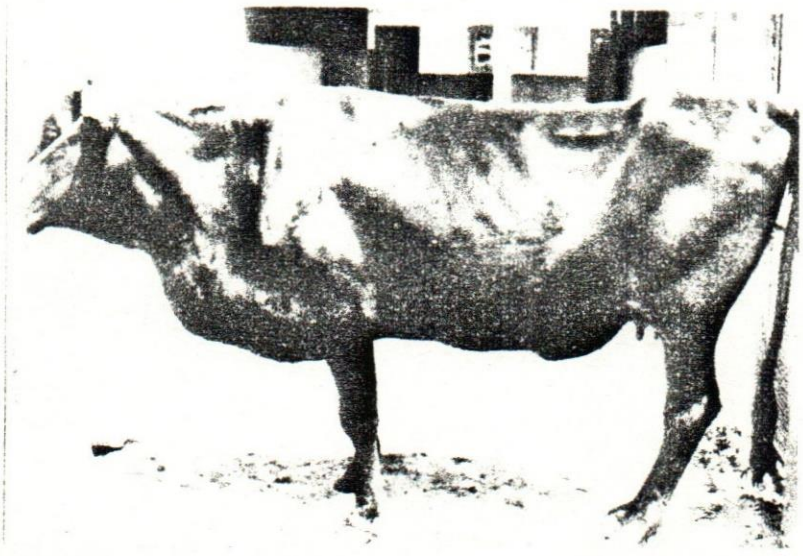

Fig. (5): O.S.D. in a cow.

Fig. (6): Tail necrosis in a buffalo cow.

Fig. (7): King worm lesions on the head and neck of a calf.

Fig. (8): Localized hyperkeratosis located on the limbs of a camel.