

### احتمالات اصابة الحمير المصرية بطفيليات الجلد

محمود عبدالظاهر ، فتحي مكادي\* ، هارون يوسف\*

لوحظ وجود ورم سرطاني معلق في الجزء الأسفل من الرقبة في بعض الحمير التي تتواجد بالقسم الاكلينيكي بكلية الطب البيطري بهدف العلاج . وكان يعتقد في بداية الأمر أن الورم من النوع السرطاني ولكنه بعد اجراء الفحص الباثولوجي للورم وجد أنه من المحتمل أن يرجع الى الاصابة المزمنة بطفيل الهيبيورونيما في الجلد . وقد تم الوصف الهستولوجي للاصابات ونوقشت النتائج كما تم علاج الحيوانات المصابة جراحيا .

Dept. of Pathology,  
Fac. of Vet. Med., Assiut University,  
Head of Dept. Prof. Dr. H.A.M. Salem.

## **SUSPECTED CUTANEOUS PARASITISM IN EGYPTIAN DONKEYS** (With 5 Figures)

By  
**A.Z. MAHMOUD; F.M. MAKADY\* and H.A. YOUSSEF**  
(Received at 28/12/1986)

### **SUMMARY**

Tumour like swellings on the ventral aspect of the neck were observed in 6 donkeys presented to the Clinic of College of Veterinary Medicine. These swellings were suspected to be of neoplastic nature. Later on histopathological studies revealed that the lesions may be related to chronic form of cutaneous habronemiasis. The histopathology of the lesions were described and discussed. Surgical treatment was also performed.

### **INTRODUCTION**

Cutaneous habronemiasis (Summer Sores), a persistent disease of the skin of equine, results from the activity of larvae of stomach worms *Draschia megastoma*. UNDERWOOD (1936) DE JESUS (1965) and GEORGI (1973) stated that the larvae are deposited on the skin by the house fly, which is attracted to some pre-existing ulceration or wound in the skin. Lesions were particularly common in the skin of pectoral region, between the forelegs DIKMANS (1948) and GEORGI (1973). The larvae penetrate deeply into the dermis and elicit granulomatous tissue reaction in which eosinophil cells are conspicuous (JONES and HUNT, 1983). They added that these particular larvae, which can be expressed by deep scarpin with pressure from the cutaneous lesions, do not complete the life cycle of the parasite.

In this paper tumour like swellings were observed on the ventral surface of the neck in some donkeys presented to the Clinic of College of Veterinary Medicine at Assiut. The swellings were suspected to be of a neoplastic nature, but microscopic examination revealed that the lesions may be related to chronic type of cutaneous parasitic lesions. The histopathology of these lesions were described and its possible relation to cutaneous habronemiasis of equine were suggested. Surgical treatment of these lesions were also performed.

### **MATERIAL and METHODS**

The present work was conducted on 6 donkeys presented to the Clinic with a history of hanged swelling on the ventral aspect of the neck. Surgical excision of the tumors was performed under the effect of chloral hydrate narcosis in combination with local infiltration anaesthesia and tranquilization by combelen. The skin was incised around the tumor mass and blunt dissection was performed until complete excision. The blood vessels were located and ligated. The subcutaneous tissues and skin were coaptated as usual. Sutures were removed 10 days postoperatively. Biopsy samples were prepared for histopathological studies. 5 Mu sections were obtained on microtomes and stained with hematoxyline and eosin and modified methods of von kossa stain for detection of calcium.

\* : Dept. of Animal Surgery.



A.Z. MAHMOUD, *et al.*

## RESULTS

### Clinical observation and Macroscopic studies :

A tumour like swelling was found hanged from the ventral aspect of the neck in 6 donkeys. The size of these swellings varies from lemon up to man's fist. The location of the tumour was usually on the ventral aspect of the neck extending from the posterior end of the intermandublar space to the pectoral regions, between the forelegs. It was usually elongated and attached to the neck with a broad base (Fig. 1). The skin covering the swelling was devoid of hair and had smooth surface. The swelling was firm in consistence and cut section through it had a gray sound very small minute focal areas of Calcification could be detected grossly. These area were surrounded by dense gray colour zone of fibrous tissues. The dermis was generally thickened and firm. In all cases the growths were accessible for surgical removal and show no tendency for local invasion or recurrence. Healing was satisfactory and occurred in an average period of 15 days.

### Micro-morphological studies :

The lesions were multiple and were located in the deeper Layers of the dermis of the skin (Fig. 2). The lesions consist of central focal areas of calcification. These calcified areas were surrounded from outside by connective tissue capsule. This connective tissue capsule was sometimes very thick and dense (Fig. 3). The proliferating connective tissue was not infrequently infiltrated with mononuclear cells (Fig. 4). Sometimes the proliferatin connective tissue was surrounded by lymphocytic cell reactions. The dermis was diffusly thickened by proliferation of connective tissue. This proliferating connective tissue contained abundant amount of blood vessels and was infiltrated with large popultions of eosinophile cells. Some of the blood vessels in the dermis showed perivascular adventetial fibrosis with vaculation of the smooth muscels of the media. However perivascular Lymphocytic reaction were constantly observed in the affected dermis. The epidermis covering the swellings showed focal areas of hyperplasia. The hyperplastic changes involve only the basal cell layer and the stratum spinosum but the keratin substances was deficient (Parakeratosis) (Fig. 5).

## DISCUSSION and CONCLUSION

Histopathological lesions described in this work consists of central minute focal areas of calcification which were surrounded by thick dense fibrous Connective tissue capsule. There was also diffuse thickening of the dermis by proliferation of C.T. which was infiltrated with esinophil ad lymphoid cells. The histological nature of these lesions and the presence of abundant population of esinophil cells suggested that the lesions were due to chronic parasitic infestation. DIKMAN's (1984) stated that the larvae of stomach worms, especially *Draschia megastoma* were deposited on the skin of equine by the house fly. These larvae penetrate deeply into the demis and elicit granulomatus tissue in which eosinophils are conspicus. Based upon these facts we can suggest that the lesions described in this study may represent a chronic stage of cutaneous habronemiasis. The position of tumour in pectrol region between the forelegs may support the fact that the lesions was induced by the larvae of habronema species as found by JONES and HUNT (1985). The fact that the lesions of onchocerca species were found in ligamentum nuchae and the worms have been thought to have some etiologic relationship to poll evil "Fistulous withers" may exculde this parasite. Regarding the treatment of chronic type of cutaneous habronemiasis good results were obtained from the surgical excision of the lesions. From this study we can conclude that chronic cutaneous habronemiasis could produce tumour like swelling in Egyptian donkeys. This swelling was commonly located



## CUTANEOUS PARASITISM IN DONKEYS

on the ventral aspect of the neck and should be differentiated from other neoplastic growths and exuberant granulation tissue.

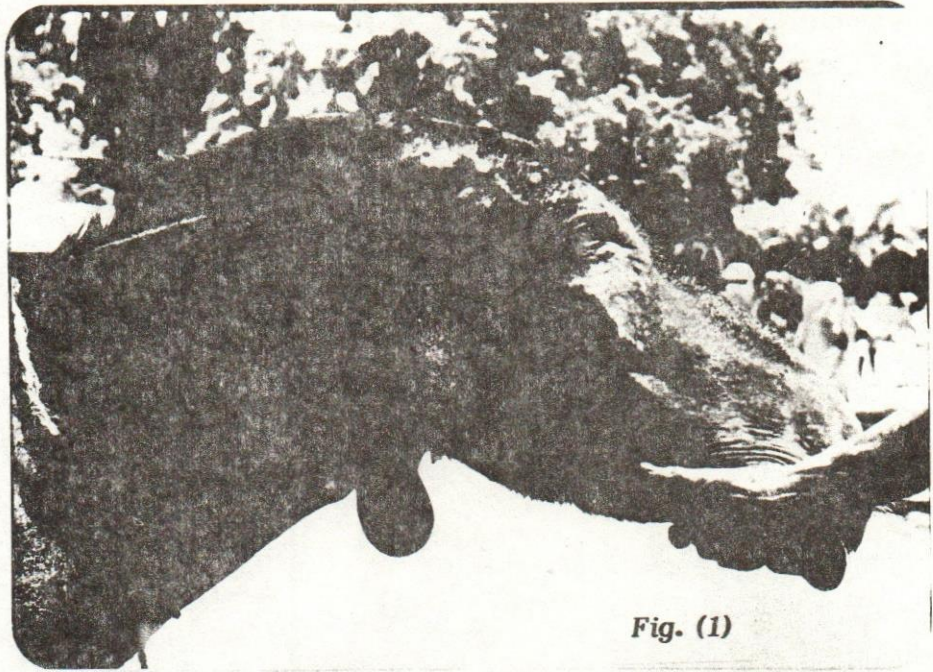
### REFERENCES

- De Jesus, Z. (1965): Observations on habronemiasis in horses. Philipp. J. Vet. Med.; 2: 133-152, 1963 VB 35: 3901, 1965.
- Dikmans, G. (1948): Skin lesion of domestic animals in the united states due to nematode infestation. Cornell Vet., 38: 3-23, 1948.
- Georgi, J.R. (1973): The kkluchi. Enigk model of strongylus Vulgaris migration in horse. Cornell. Vet. 63. 63 (2) 220-263.
- Jones, T.C. and Hunt, R.D. (1983): Veterinary Pathology fifth Edition Lea & Febiger. Philadelphia.
- Underwood, J.R. (1936): Habronemiasis. Veterinor Bulletin U.S. Army 30 (1). 16-28. Office of the surgeon General U.S. Army Washington D.C.

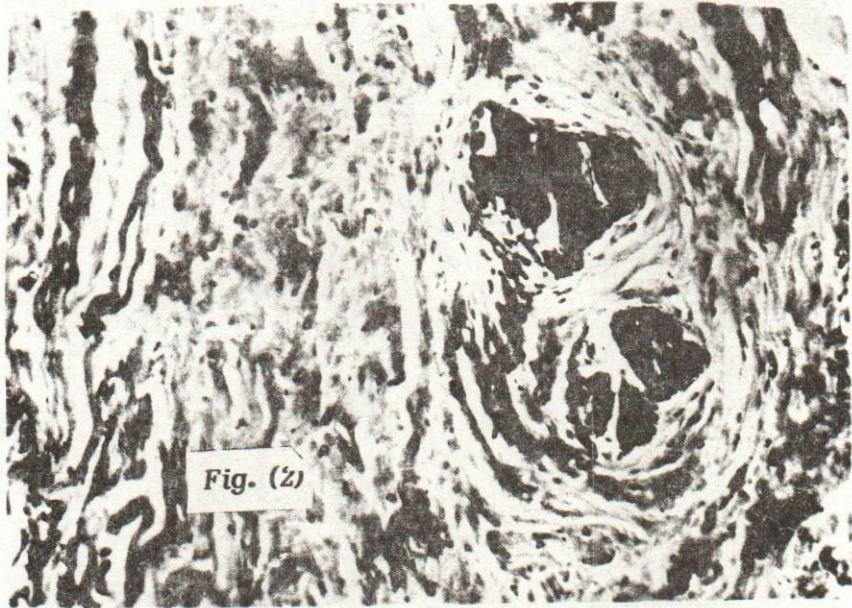
### LEGENDS OF FIGURES

- Fig. 1:-** Tumour like swelling hanged on the ventral aspect of neck of a donkey.
- Fig. 2:-** Focol areas of calcification surrounded by excessive fibrous connectiv tissue. Stain H & E (16 x ).
- Fig. 3:-** Caicified material surrounded by C.T. capsule infiltrated with some inflammatory cells. Stain H & E (25 x ).
- Fig. 4:-** The calcified area somtimes is surrounded with very thick & dense connective tissue. Stain H & E (25 x ).
- Fig. 5:-** Focol areas of skin hyperplasia with deficiency of keratin substances (Parakera-tosis) & Lymphoid cells reaction in subcutaneous tissues. Stain H&E (25 x ).

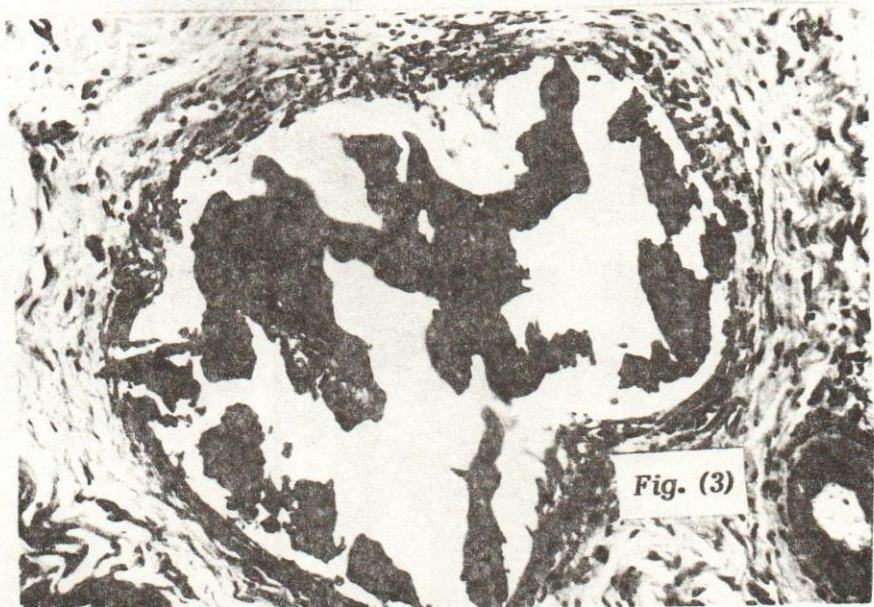




**Fig. (1)**



**Fig. (2)**



**Fig. (3)**



