

قسم الجراحة
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الأورام شبيه السرطان (السركويد) في الحمير

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تم في هذا البحث تشخيص ١٣ حالة إصابة بالسركويد في حمير مصرية ذات أعمار مختلفة من الجنسين وذلك بمستشفى كلية الطب البيطري بأسيوط ، ولقد اعتمد التشخيص على الفحص الاكلينيكي والظاهري والهستوباثولوجي . وقد عولجت هذه الحالات باستئصالها كلية ولو أنه حدث تكرار لأغلب الحالات بعد الاستئصال .

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SARCOIDS IN DONKEYS
(With one table & 16 Figs.)

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SUMMARY

In this study equine sarcoid had been diagnosed in thirteen cases of adult Egyptian donkeys of varying ages and sexes presented to the Clinic of Faculty of Veterinary Medicine, at Assiut. Diagnosis was based upon clinical, macromorphological and histopathological findings. Surgical excision was recommended, however recurrences were common.

INTRODUCTION

Sarcoid is a cutaneous growth first recognized by JACKSON (1936). It is one of the most frequently occurring tumours in horses, mules and donkeys and has been reported from various parts of the world (OLSON, 1948; VOSS, 1969; BAKER, *et al.* 1975; JONES and HUNT, 1983 and SINGH, 1986).

The aim of the present study is to record sarcoids in donkeys in upper Egypt. Diagnosis of the cases either clinically and/or histopathologically as well as surgical intervention and prognosis were thoroughly investigated.

MATERIAL and METHODS

In the present investigation, 8 male and 5 female donkeys ranging in age between 2-18 years were admitted to the Clinic of Faculty of Veterinary Medicine, at Assiut. These animals were affected with tumour masses in the head and limb regions. In each case, the clinical signs, location of the tumour mass and its period of growth as well as its gross appearance were recorded before the surgical excision of the tumour. Surgical excision of the tumour was performed under strict asepsis and the effect of chloral hydrate narcosis in combination with local infiltration anaesthesia. The skin was incised around the tumour mass and bluntly dissected from it and then the tumour mass was completely excised. Haemorrhage was controlled and the subcutaneous tissues and skin were coaptated as usual. Sutures were removed 8-10 days postoperatively. Small pieces from each excised tumour were taken and preserved in 10 percent neutral buffered formaline for histopathological examination. Sections were stained with H&E and Van Gieson stains. The animals were observed for 6 months postoperatively.

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RESULTS

The recorded clinical cases were tabulated in table one.

Five cutaneous growths were found on the inner aspect of the thigh (Fig. 1) and three on the medial and anteromedial aspect of the leg (Fig. 2&3). Grossly, the examined tumours had a sarcomatous appearance and some of them were associated with exuberant granulation tissue. The examined growths in some cases were multiple, greyish-white and plugged with over laying skin which was thickened, roughened, ulcerated, un-haired and infected. Few cases were pedunculated. The size of the tumours was approximately 18 cm. length x 14 cm. breadth and 7 cm. thickness. In one case a large huge mass was observed and surrounded by small nodules (Fig. 1). The mass was limited to the skin and subcutaneous tissues and did not involve the deeper tissues. In two cases out of the 8 operated ones the wounds healed readily within 10-15 days without evidence of recurrences. In the remained cases recurrences were recorded within 30-50 days postoperatively. The recurred tumours attained the size of a tennis ball, the tumours again were subjected to surgical excision. 60 days later, two cases recurred once more and grew again to the same original size previously mentioned (Fig. 4).

Three tumours were found on the eyelids of the affected donkeys (Fig. 5) and two on the skin near the base of the ear and other parts of the head region (Fig. 6). Grossly, all tumours had the appearance of small warts and were associated with exuberant granulation tissue. The mass size was approximately 3 cm. length x 2 cm. breadth and 1 cm. thickness.

The tumours were surgically removed and wounds healed readily within 10-15 days. Recurrence was recorded in one case only 50 days postoperatively.

Micromorphological studies revealed that, both the fibrous tissue of the subcutis and the epithelial covering of the epidermis sharing the neoplastic process. The histoid arrangement of the growth tissue were diffusely uniformly distributed and never have a sharply demarcated edges when examined histologically. The tumour tissue consists of collagen fibers and fibroblasts. The fibroblasts were of variable density. Sometime they were very dense (Fig. 7). The fibers in most parts of the tumour appeared to be mature and uniformly developed. These fibers were straight and run in two direction (Fig. 8). The intercellular substance differ in different fields of the tumour from little intercellular material to mucinous or myxomatous changes (Fig. 9&10). The epithelial component form a long rete pegs extended down into the mass of the tumour for a considerable distance (Fig. 11). But in young growths this cells involve the entire surface of the tumour. The tumour fibers were perpendicular on the basement membrane of rete pegs of the epithelium (Fig. 12). The superficial layer of the tumour in most cases showed necrotic and ulcerative changes (Fig. 13). Neutrophil and mononuclear cells infiltration were seen adjacent to necrotic and ulcerative areas (Fig. 14). Frequently the superficial zone of the tumour showed excessive granulation tissue (Fig. 15). Some parts of tumour were highly vascular and another parts were infiltrated with lymphocytes and eosinophil cells (Fig. 16). The organization of the fibers and vessels are resembling those in granulomata. There is no infiltration or metastasis for the tumour cells to neighbouring tissues or organs or lymph nodes.

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DISCUSSION

The tumours observed in this study were located on the skin of the inner aspect of the thigh and leg, on eyelid and near the base of the ear. This result was in agreement with VOSS (1969) who stated that equine sarcoids were located in the same places. In the present study the tumours were observed in both male and female donkeys of different ages. This result was in agreement with BLOOD and HENDERSON (1963), BRIDGES (1963) and JONES and HUNT (1983) who stated that equine sarcoid is more frequent in donkeys and mule than in horse. They added that the disease occurs at all ages and in both sexes.

The clinical, histopathological and biological behavior recorded in the present study for the tumours of the pelvic limb and head regions fit the features given by JACKSON (1936), OLSON (1948), VOSS (1969) and BAKER (1975) for equine sarcoids.

The period of growth for the recorded tumours on the head region was between 48-70 days and it was from 19-30 days for those on the pelvic limb. In spite of this fact the size of sarcoids on the pelvic limb was larger than those on the head region and this indicates that sarcoids grow on the pelvic limb faster than on the head region. Moreover the recorded sarcoids were ulcerated and have sarcomatous appearance on the pelvic limb and remained small warty like on the head region. The same findings were reported by VOSS (1969) in horse.

Surgical excision of the sarcoid was the most available method of treatment. Recurrence, however is common. In addition to the routine surgical removal cryosurgical techniques and immunotherapy have been suggested (MURPHY, *et al.* 1979; LONE, 1977 and WYMAN, *et al.* 1977).

In the present results both the fibrous connective tissue of the subcutis and the epithelial component of the epidermis were sharing the neoplastic process. The latter form rete pegs extend deeply into the tumour mass for a considerable distance. It has been also observed that most of the fibers were arranged at right angle to the rete pegs or the epithelial basement membrane. Moreover the fibers appeared to be of uniform development. These three morphological features were considered by JACKSON (1936), RUNNELLS, *et al.* (1965) and JONES and HUNT (1983) as a pathognomonic histopathological findings for equine sarcoid.

The exuberent granulation tissue observed in the superficial surface of most of tumours may be due to inherent nature of equine connective tissue to be extremely sensitive to injury (RUNNELLS, *et al.* 1965).

These facts support that trauma, infection and inflammatory tract which penetrate deeply into the growth were apt to occur in equine sarcoids (JACKSON, 1936; VOSS, 1969; BAKER, *et al.* 1975 and SINGH, *et al.* 1986). The tumour in all examined cases did not infiltrate the underlying tissues, did not metastasize to other parts of the body or regional lymph nodes. Mitotic figures were not observed in all examined tumours. However some of the tumours recur after surgical removal (JACKSON, 1936; RUNNELLS, *et al.* 1965 and JONES and HUNT).

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Table (1)
Showing the predilection seats of sarcoid in donkeys,
as well as the period of growth and the possibility of recurrences

No. of case	Location of tumours	Period of growth (per day)	Recurrences
1	Inner aspect of the thigh	21	+
2	Inner aspect of the thigh	28	+
3	Inner aspect of the thigh	19	+
4	Inner aspect of the thigh	27	+
5	Inner aspect of the thigh	23	+
6	Inner aspect of the leg	30	-
7	Inner aspect of the leg	25	+
8	Inner aspect of the leg	21	+
9	Lower eyelid	70	-
10	Upper eyelid	67	+
11	Upper eyelid	48	-
12	Near the base of the ear	54	-
13	Near the base of the ear	60	-

+ = Recurrence - = No recurrence

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LEGENDS OF FIGURES

- Fig. (1):** Multiple sarcoid on the inner aspect of the thigh just above the stifle joint in a male donkey. Note the presence of small nodules around the sacromatus swelling.
- Fig. (2):** Sarcoid at the antromedial aspect of the leg of a she donkey.
- Fig. (3):** Sarcoid mass at the medial aspect of the leg covered by exuberent granulation tissue.
- Fig. (4):** The recurrency of the sarcoid on the inner aspect of the thigh in a male donkey.
- Fig. (5):** Sarcoid at the medial canthus of the eye and the lower eyelid. Note the warty like appearance of the sarcomatus tissue.
- Fig. (6):** Multiple sarcoids at the base of the ear and lateral canthus of the eye ball.
- Fig. (7):** The fibroblasts in some parts of the tumour were very dense. Stain H&E (16 x).
- Fig. (8):** Adjcent fibres usually run parallel to each other. Stain Van Gesion (16 x).
- Fig. (9):** In some parts of the tumour the cells were seperated by mucinus material. Stain H&E (16 x).
- Fig. (10):** Some parts of the tumour showed myxomatus changes. Stain H&E (16 x).
- Fig. (11):** Long rete pegs extend into the tumour for a considerable distance. Stain H&E (16 x).
- Fig. (12):** Most of the fibres were arranged at right angles to rete pegs. Stain Van Gesion (25 x).
- Fig. (13):** The superficial parts of the tumour showed necrotic and ulcerative changes. Stain H&E (16 x).
- Fig. (14):** The superficial areas of the tumour showed leucocytic infiltration. Stain H&E (25x).
- Fig. (15):** The superfial zone of the tumour showed exuberant granulation tissue. Stain H&E (25 x).
- Fig. (16):** Some parts of the tumour showed lymphoid and few esinophil cells infiltration. Stain H&E (16 x).



Fig. (1): Multiple sarcoid on the inner aspect of the thigh just above the stifle joint in a male donkey. Note the presence of small nodules around the sarcomatus swelling.

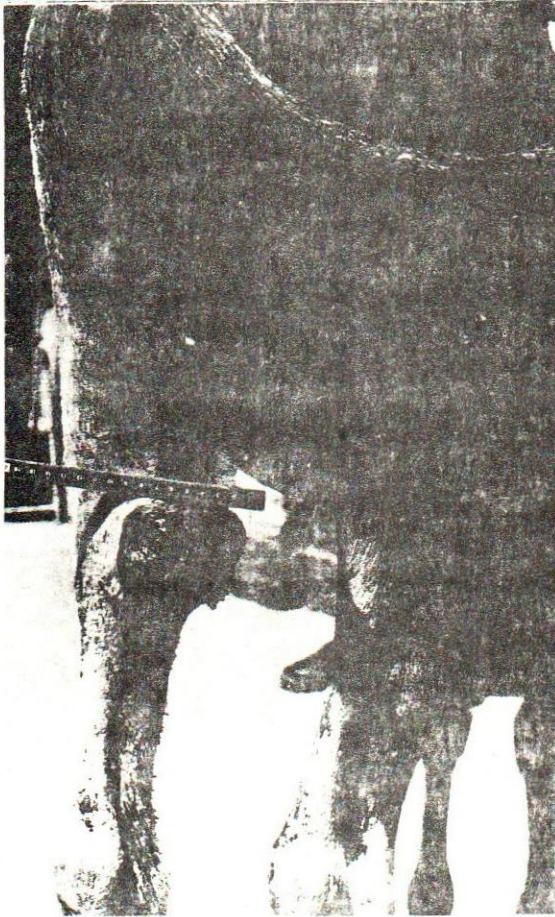


Fig. (2): Sarcoid at the antromedial aspect of the leg of a she donkey.

Fig. (3): Sarcoid mass at the medial aspect of the leg covered by exuberent granulation tissue.



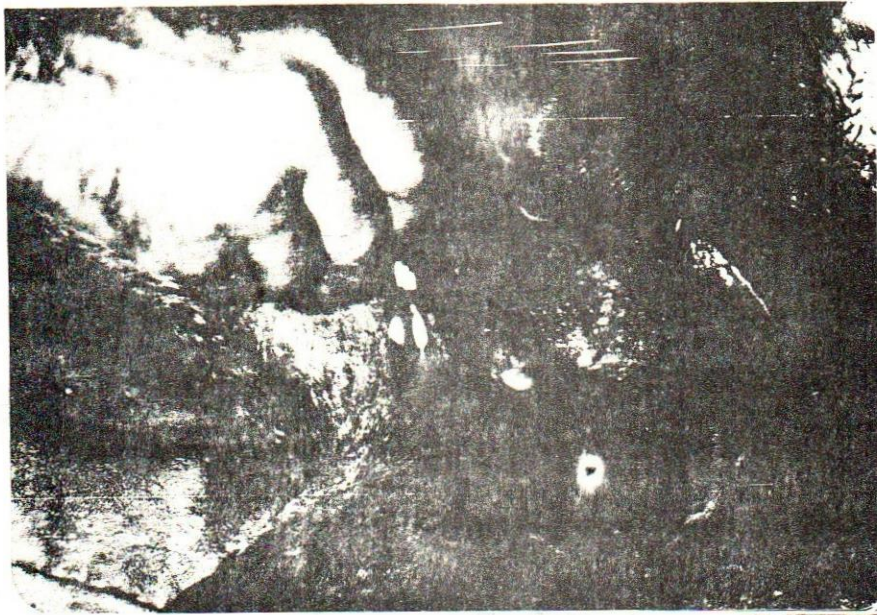


Fig. (4): The recurrency of the sarcoid on the inner aspect of the thigh in a male donkey.

Fig. (5): Sarcoid at the medial canthus of the eye and the lower eyelid. Note the warty like appearance of the sarcomatous tissue.

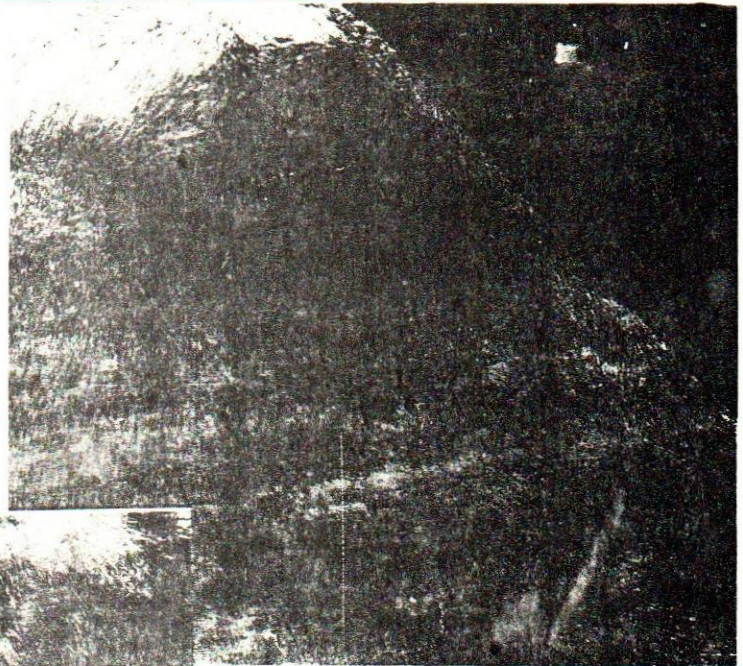


Fig. (6): Multiple sarcoids at the base of the ear and lateral canthus of the eye ball.



Fig. (7): The fibroblasts in some parts of the tumour were very dense.
Stain H&E (16 x)



Fig. (8): Adjacent fibres usually run parallel to each other. Stain Van Gieson (16 x)



Fig. (9): In some parts of the tumour the cells were separated by mucinous material. Stain H&E (16 x).



Fig. (10): Some parts of the tumour showed myxomatous changes. Stain H&E (16 x).

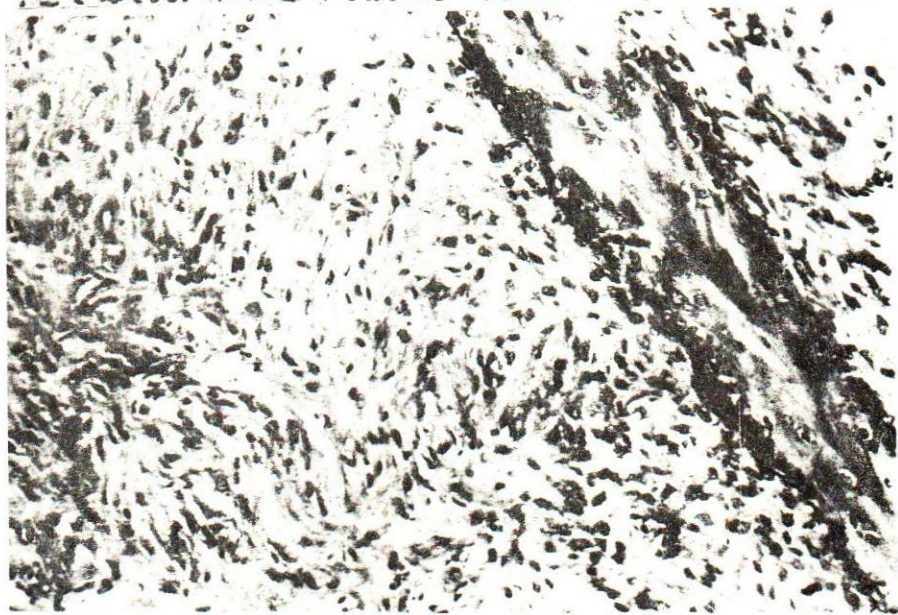


Fig. (11): Long rete pegs extend into the tumour for a considerable distance. Stain H&E (16x).



Fig. (12): Most of the fibres were arranged at right angles to rete pegs. Stain Ven Gesion (25 x).

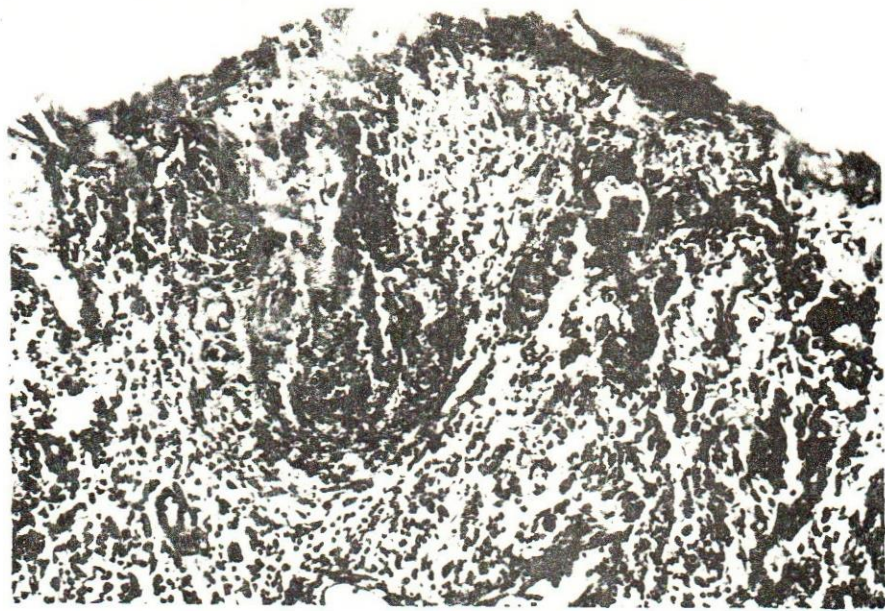


Fig. (13): The superficial parts of the tumour showed necrotic and ulcerative changes.
Stain H & E (16 x).

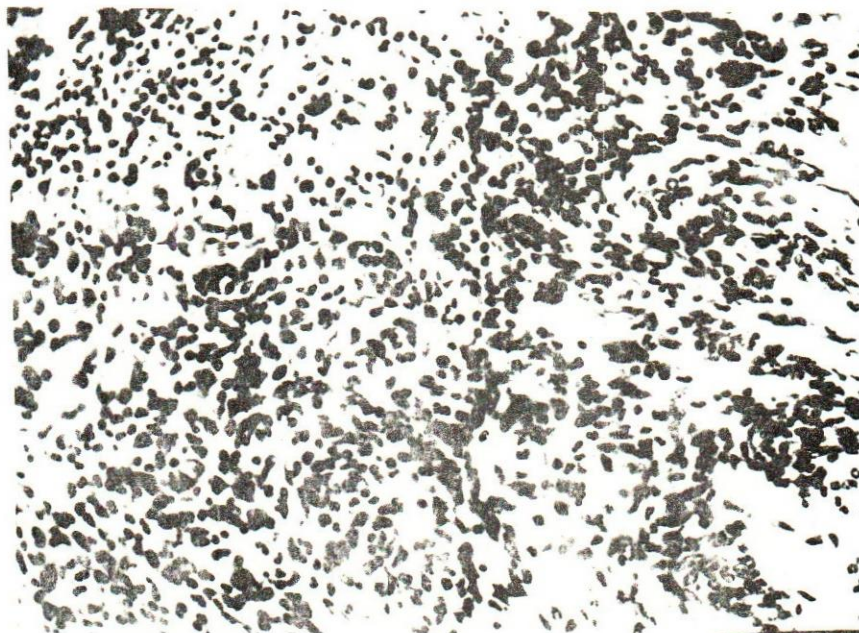


Fig. (14): The superficial areas of the tumour showed leucocytic infiltration.
Stain H & E (25 x).

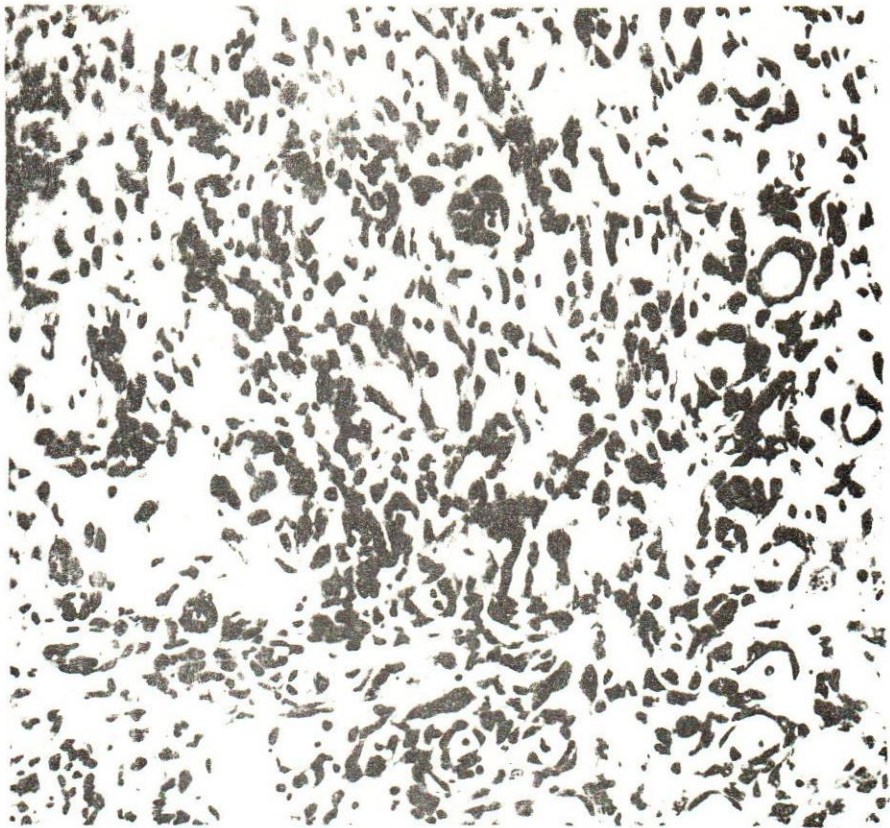


Fig. (15): The superficial zone of the tumour showed exuberant granulation tissue.
Stain H & E (25 x).

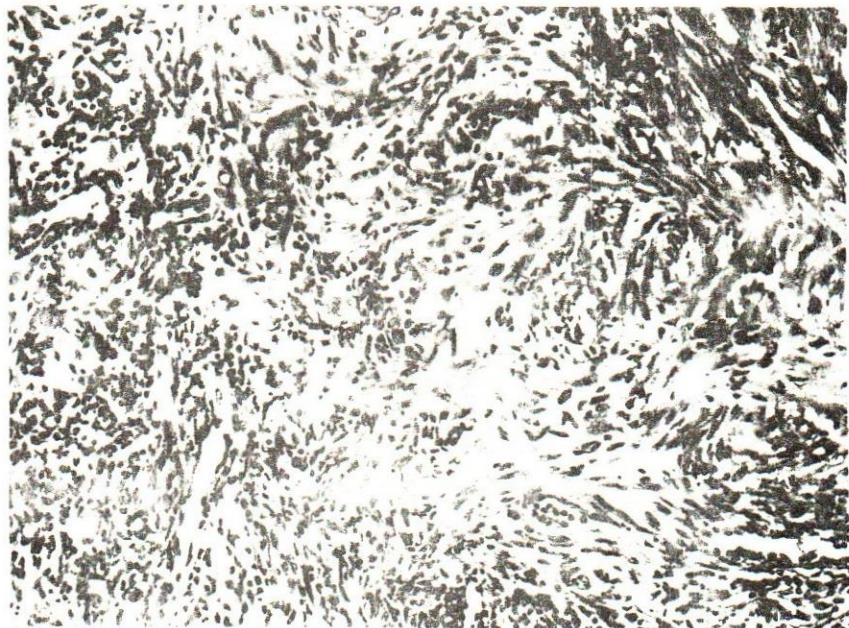


Fig. (16): Some parts of the tumour showed lymphoid and few eosinophil cells infiltration.
Stain H & E (16 x).