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**SOME OBSERVATIONS ON GOAT TUMOURS**  
**1- CUTANEOUS PAPILLOMAS ON THE UDDER**  
**2- VAGINAL CYSTIC FIBROADENOMA**

(With 8 Figures)

By

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بعض الملاحظات على الأورام في الماعز

١ - زوائد لحمية على الضرع

٢ - ورم مهبلي ليفي متحوص

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تم في هذا البحث تسجيل نوعين من الأورام في الماعز وكذا تم وصف  
 وتشخيص وإجراء العلاج الجراحي لكل منها .

**SUMMARY**

In the present investigation, two types of tumours were recorded in goats. Surgical management of the tumours and the clinical, gross and microscopic description of each tumour were presented.

**INTRODUCTION**

Neoplasms of the mammary glands, uterus and vagina are very rare in farm animals (STANNARD and PULLEY, 1978). Very few literature is available on udder papillomas in goats. DAVIS and KEMPER (1936) and SASTRY (1959) described cutaneous warts on the head, face, shoulder, neck and upper parts of the fore limbs, but not on the teats and udder in a herd of Saanen goats. In another herd of the same breed, MOUTTON (1954) reported papillomas limited to the teats and udder. Fibropapillomas and the transmissible venereal tumours were described in cattle and dogs respectively (JONES and HUNT, 1983). No records about tumours of the uterus, vagina in goats had been found in the available literature.

In the present investigation, two types of tumours were recorded in goats, treated surgically and were described pathologically.

**MATERIAL and METHODS**

In a herd of 90 native female goats from Assiut province, there were seven animals showing growths on the udders and teats and one was affected with a tumor

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mass protruding from the vulva. These affected cases formed the material of the present work. The age of the affected goats was from 3-5 years. Each animal was tranquilized and anaesthetized with i.m. injection of rompun (Bayer) in a dose rate of 0.5 mg/Kg body weight. The surgical site was prepared for routine aseptic surgery. The growth were excised surgically and the skin wounds were closed with tissue adhesive (N- Butyl Cynoacrylate).

The vaginal tumour mass was completely excised and haemorrhage was controlled (Fig. 4). The prolapsed part of the vagina was reduced and retention sutures were placed across the lips of the vulva.

Tissues collected after surgical excision were preserved in 10% formaline saline solution and subjected to histopathological examination.

Following excision of the growths the animals were observed for three months.

## RESULTS

### Clinical and gross finding :

#### 1- Cutaneous papillomatosis on the udder (Fig. 1) :

The growths were limited to the skin of the udder and teats. From 2-10 tumours were found on each udder. They were closely spaced and elevated over the skin. They were mostly present on the teat but they were also observed on the udder. They were of reddish brown colour and mostly have a smooth surface but in few areas the surface was rough. The papillomas were often elongated structures that sometimes attained a length of 2 cm. Many of the papillomas showed secondary infection. The majority were conical or rod-shaped growths, rather than pedunculated and papillary. The supramammary lymph node appeared healthy.

Closure of the resultant skin wounds using tissue adhesive after surgical excision of the warts resulted in nearly 100% cure rate. Infection, wound dehiscence and recurrence was not observed.

#### 2- Vaginal cystic fibroadenoma (Fig. 3):

Clinical signs were absent except for the presence of vaginal prolapse with a longitudinal tumour mass (13 X 5 cm). The vaginal prolapse extended beyond the vulva cleft. The tumour mass arised from the ventral vaginal wall, it was of reddish white colour and moderaetly firm in consistency. Haemorrhage and ulceration were not observed on the surface of the tumour. Urinary disturbance was not also observed. Retention sutures were removed 8 days post-operatively and recovery was uneventful.

### Histopathological findings :

#### 1- Cutaneous papillomatosis on the udders :

The growth consisted of complicated papillary projections. The underlying connective tissues grow and proliferate with them and apparently sharing the neoplastic

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process. The papillomatous growth consists of well differentiated one layer of elongated or oval shaped cells which represent the basal cell layer of the epidermis. The nuclei of these cells were always hyperchromatic. No breaks or even degenerative changes in the basal cell layer could be observed (Fig. 2). The second layer consists of a layer of polyhydal cells representing the stratum spinosum of the epidermis. The cells of this layer showed acanthosis and they were separated from each other. Most parts of the stratified squamous epithelium of the papillomatous growth showed parakeratotic changes (keratin substance was completely absent). In few parts of the papillomatous growth the stratum spinosum was well developed and showed moderate keratinization. The epithelial cells of the stratum spinosum occasionally contain intranuclear eosinophilic homogeneous structures which may represent viral inclusion bodies. The stratified squamous epithelium of the papillomatous growth was unpigmented and always without accessory skin structures. The core of the papillomatous growths consists mainly of young immature and proliferating connective tissues. The fibroblastic cells were abundant so it appeared microscopically as fibroma. The fibromatous tissues always showed leucocytic infiltration and capillary congestion.

### 2- Vaginal cystic fibroadenoma :

The tumour mass in most of its parts consists of adeni of different size and shape. These adeni were lined by one or more than one layer of cuboidal epithelium. The process of proliferation of epithelial tissue and formation of adeni was accompanied by extensive proliferation of the connective tissue. Formed stroma supporting the proliferated adeni. The proliferated connective tissue was rich with fibroblast cells (Fig. 5). The adeni in some parts of the tumour were cystically dilated and form considerable large cystic spaces (Fig. 6) in which the epithelium formed papillary projections (Fig. 7). These papillary projections were lined with one or more than one layer of cuboidal epithelium and has connective tissue core. these papillary projections were sometimes simple but other times they were branched and complicated (Fig. 8).

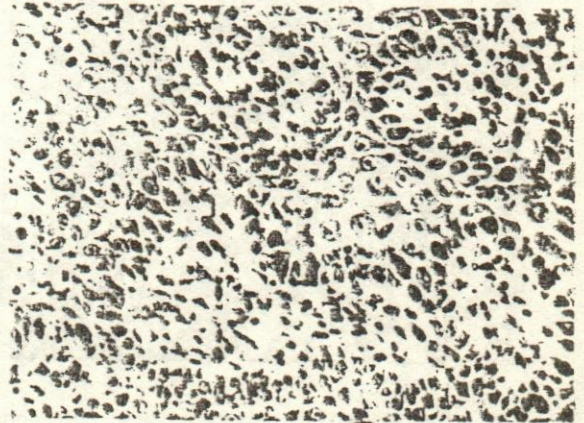


Fig. (1): Cutaneous Papillomas on the upper of native goat.

Fig. (2): Showing the histopathological structure of the papillomatous growth, H&E(x25).



Fig. (3): Vaginal tumour mass protruded from the valva.

Fig. (4): The prolapsed part of the vagina after surgical removal of the tumour mass.

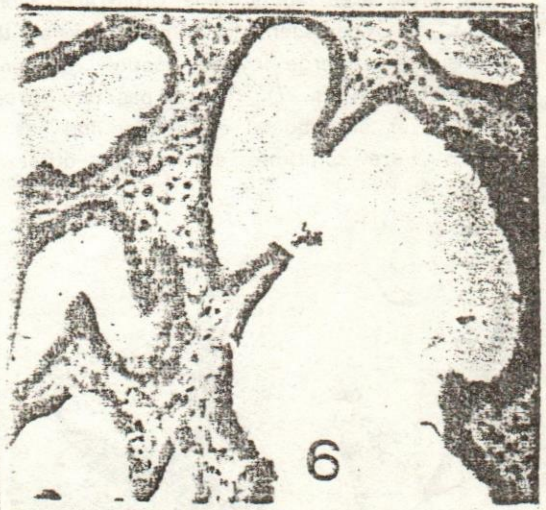


Fig. (5): Adeni of different size surrounded by fibroplastic proliferation. H&E (x25).

Fig. (6): Cystically dilated adeni surrounded by connective tissue. H&E (x25).

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Fig. (7): Simple papillary projection in the cystic cavity of dilated acini. H&E (x25).  
 Fig. (8): Complicated papillary projection in the cystic cavity of dilated acini. H&E (x25).

## DISCUSSION

## (1) Cutaneous papillomatosis on the udder :

Udder papillomatosis could be recognized and diagnosed histologically in goats at Assiut province in Egypt. The histologic examination of the growth revealed their Fibro papillomatus nature. Similar Findings were observed by BAYOUMI and NAFADY (1984) in the oral mucosa of buffalo calves and the teats of their mother in the same province (Assiut). Macro and micromorphological changes of the same nature were also described in cattle by FUJIMOTO and OLSON (1966) and JONES and HUNT (1983). In our Findings neither gross nor microscopic lesions could be noticed except the fibropapillomatus growth which were only found on the udder and teats. The presence of signs of inflammatory reaction such as hyperaemia and leucocytic infiltration could be attributed to secondary infections. However, the presence of intranuclear inclusions in the stratum spinosum suggested that the fibropapillomatus growth may be due to epitheliotropic virus.

Surgical treatment of the udder and teat papillomas which was carried in this study is in agreement with that mentioned by MOULTON (1954) and JENNING (1984) who stated that because udder papillomatosis in goat had some cancerous potential, its surgical removal seems warranted.

Early use of the short-chain cyanoacrylates was found to be tissue-toxic, however, N-Butyl Cyanoacrylate is non-toxic and is acceptable for the use on tissue (AVERY and ORD, 1982). It is instantly haemostatic (GALIL *et al.*, 1984) and provide

some bacteriostatic properties (EIFERMAN and SYNDER, 1983). In the present study satisfactory results have been obtained by the use of N-Butyl Cyanoacrylate.

## (2) Vaginal cystic fibroadenoma :

In this tumour both the epithelial tissue and the connective tissue shared the neoplastic process. The proliferating epithelial tissue forming adenoma supported by stroma of proliferating fibroblasts and collagen fibers. Cystic dilatation simple and complicated papillary projections into the dilated adenoma were commonly observed in this tumour, so the tumour could be considered as a cystic fibroadenoma papilloferous (JUBB and KENNEDY, 1985). It was assumed that this tumour originated from Bartholin's glands of the vagina.

The tumour mass was poorly vascularized so it was easily excised from the vagina. Recurrence after surgical removal was not observed and natural mating was possible.

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