

## Gingival Squamous Cell Carcinoma in an Ewe: Case report

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### Abstract

Cauliflower, hemorrhagic, necrotic, and ulcerated mass located on the right of an ewe maxilla was diagnosed as gingival squamous cell carcinoma (GSCC). It was recognized microscopically by identifying malignant epithelial cells arranged as keratin pearls or various degrees of differentiation toward keratinocytes.

**Keywords:** Gingival tumor, SCC, Animals, Human.

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### سرطانة الخلية الحرشفية اللثوي في النعاج : تقرير حالة

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### الخلاصة

نمو قرنابيبي، نزفي، نخري ومتقرح متموضعا على الفك الايمن لنعجة، شخضت على انها سرطانة الخلية الحرشفية وميزت مجهريا من خلال التعرف على الخلايا الظهارية الخبيثة اصطفت كالألى الكيرانيين او درجات مختلفة من خلايا الكيرانيين المعروفة.

Squamous cell carcinoma is common malignant neoplasm of animal arising from any site normally covered by stratified squamous epithelium (keratinocytes). It is observed most frequently among cattle and horse, affecting horn and the eye, it is also common neoplasms in old dog and cat, found on the skin of animals in various locations; abdomen, prepuce, anus, tail, tongue, eye, ear, lip, vulva and vagina (1).

Gingiva is a rare site of involvement of oral SCC (2), still several authors reported that GSCC is the most common site of occurrence of oral SCC in human (5). The etiology of SCC remains unknown but predisposing factors such as smoking, tobacco, alcohol, habits have also been associated with SCC such as chewing betel leaves (6). GSCC has relatively poor prognosis, because the differential diagnosis, periodontitis and osteomyelitis are difficult to exclude (7). GSCC are rare in domestic animals particularly in sheep. Clinical characteristics of GSCC vary from case to case and include the exophytic (verrucose or papillary), endophytic, ulcerated, leukoplakic, erythroplakia or erythroleukoplakia forms. This report

presents a case of GSCC in an ewe. The mass have been located on maxilla in the region of the right maxillary center and lateral incision.

### Clinical findings

A 3.5 years old local breed ewe weighed a proximately 35 kg was admitted to the Veterinary Clinical Teaching Hospital, University of Mosul, due to irritation of gingival adjacent molar no. 12 for 3 month history of nodule in gingival buccal cavity. Cleaning and excision took place, root scaling and later amoxicillin was prescribed for 7 days. to changes occurred, then 2-3 month later intraoral examination showed recession of the marginal gingival reach 8-10 cm in size at molar no. 11 and 12.

These nodules were located in right upper maxilla (Fig. 1) and the animal could not close her mouth. She had turgid, hemorrhagic and ulcerated in addition to hard inconsistency with broad sessile-based and lobulated appearance (Figs. 2, 3) that occupied with gingival lumen. Its mucosal surface was ulcerated, wet and smelly. The animal suffered from loss of appetite, emaciation, decrease

in lactation also could not chew food material, teeth dropping, excess salivation and with necrotic odor originating from the oral cavity.

Clinically, a tumor of unknown source was anticipated. After positioning of the ewe in the left recumbency and physical restraining on the surgical table, the surgical area was prepared for aseptic surgery, sedated by the administration of 0.2ml xylazine intravenous in addition to local anesthesia by using lidocaine within the maxilla surrounding the base of the tumor mass. The mass was completely removed with peripheral tissue and the base was cauterized. Postoperative systemic antimicrobial drug and local wound healing agents were administered for 3 to 5 days respectively. Samples were taken from the mass fixed in 10 % neutral buffered formalin and processed for histopathology (8).

### **Pathological findings**

Gingival Squamous Cell Carcinoma was recognized macroscopically via firm white poorly demarcated gingival mass that was ulcerated and streaked with red, tumor mass showing papillary cauliflower appearance (Figure 3) in addition to a protrusion having a broad base, and has grayish or pink appearance.

Microscopically, GSCC was recognized by identifying malignant epithelial cells demonstrating various degrees of differentiation towards keratinocytes. Cytoplasm was abundant and eosinophilic. Several degrees of keratinization were observed through tumor cells (Figs. 4 and 5). Neoplastic cells were well differentiated and invasive proliferation of nests and cords of neoplastic epithelial cells were seen. These cells exhibited intense cellular and nuclear pleomorphism, nuclear hyperchromatism, loss of cells cohesion, multiple and clearly visible nucleoli, individual cell keratinization, atypical mitosis, and formation of keratin pearls. Intense and diffuse mononuclear inflammatory infiltrate, numerous blood vessels of various calibers and areas of hemorrhage and edema were observed in fibrous connective tissue stroma. The lining epithelium of the mucosa exhibited hyperparakeratosis stratified permanent pattern with areas of hyperplasia, exocytosis and hydropic degeneration (Figs 4 - 6).



Figure 1: Mass at right upper maxillary of ewe, showing hemorrhage and ulceration (arrow).



Figure 2: Buccal cavity gingival at rise, showing teeth dropping (arrow).



Figure 3: Lobulated hemorrhagic ulcerated nodules at right maxillary gingiva (arrow).

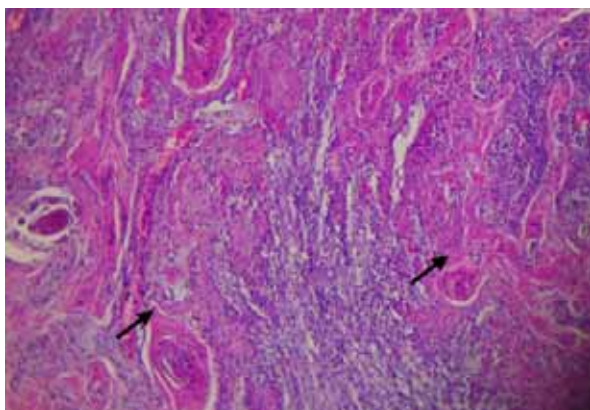


Figure 4: Section from growth mass showing cell nest appearance (arrow). H&E, 145X.

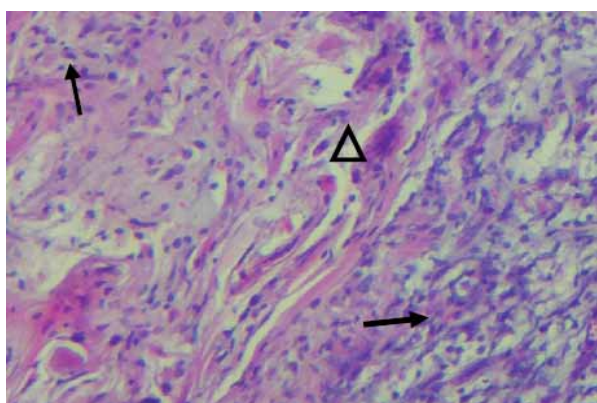


Figure 5: Section from growth mass showing pleomorphism nuclei and cells (arrow), tumor giant cell (Δ) in addition to inflammatory cells (thick arrow). H&E, 186X.

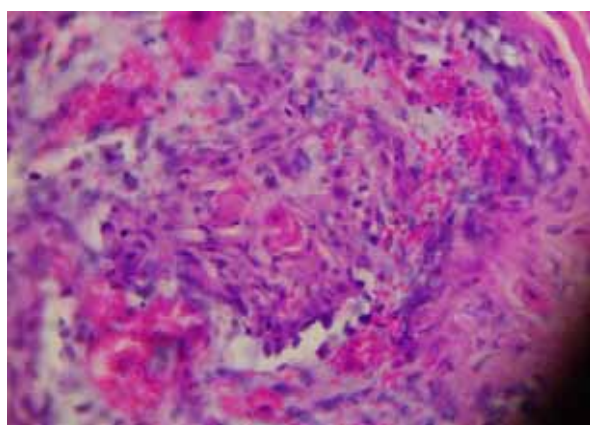


Figure 6: Section of growth mass showed pearl's shape. H&E, 450X.

## Discussion

Clinical examination of this case revealed emaciation, loss of appetite and decrease in lactation, it was hypothesized that the mass severely interfered with proper mastication and rumination causing a digestive upset resulting in emaciation.

SCC arises at any site normally covered by stratified squamous epithelium, skin, mouth, esophagus, anus, ectocervix and others (9). This case is firstly reported in Iraqi ewes at the age 3.5 years. It was agreement with other reports indicating that the age of affected animal ranges from 5 to 15 years with an average age of 10.3 years and a greater number of female than males are affected. An increased incidence of GSCC is found in Irish setters (9). This neoplasm may mimic common inflammatory lesions, the similarity between GSCC and more common periodontal lesion may lead to a delay in diagnosis or misdiagnosis, the first symptoms reported suggested a periodontal disorder. However, more detailed assessment of clinical characteristics such as staining, verruciform surface and ulceration is necessary (10). Neoplastic lesions of gingival tissue are frequently diagnosed at an advanced stage (11). Clinical examination of this case revealed maxillary facial swelling, whilst surgery also revealed hemorrhage, necrosis, ulceration, and lobulated mass on right upper gingiva.

GSCC was recognized microscopically also, by identifying malignant epithelial cells demonstrating various degrees of differentiation towards keratinocytes (1).

The lesion had an inflammatory appearance. Analysis of the excisional biopsies by two pathological to histopathological diagnosis of SCC.

Furthermore, genetic, chemical, physical and trauma could be contributing factors. Some suggested that those tumors can occur spontaneously or after chronic ingestion of food stuff with a mutagenic effect such as braken fern (15).

## Conclusion

Post-mortem and histopathologic examination was a definitive diagnosis of GSCC. The infiltrative nature, central areas of keratinization and cord of neoplastic cell or pearl shape, are characteristics of GSCC. Despite no reports in sheep (ewe), GSCC should be included in the differential diagnosis of firm oral mass in ewe.

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