

## **Salivary Fibro-adenocarcino-sarcoma in A Dromedary Camel (*Camelus dromedarius*)**

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### **ABSTRACT:**

A case of salivary fibro-adenocarcino-sarcoma was described in an eight year old she camel. The tumour involved the left ramus of the mandible and the submandibular region. Radiography showed osteolytic areas around the dental arcade. Histopathologic features revealed an anaplastic fibro-glandular neoplasm. There was local invasion of the bony tissue but no vascular or lymphatic invasion was observed.

### **INTRODUCTION:**

Neoplastic conditions are infrequently reported in camels (Ramadan 1994). Squamous cell carcinomas (Tageldin and Omer, 1986; Ramadan and El Hassan, 1989), renal cell carcinoma (Vitovec, 1982) and bronchoalveolar adenocarcinoma (Gameel et al. 1998) have been described. The current article documents the first case of fibro-adenocarcino-sarcoma of the salivary gland in the camel.

### **HISTORY AND CLINICAL FINDINGS:**

An 8-year-old she-camel was presented to the Veterinary Teaching Hospital, King Faisal University, because of a buccal swelling of 7 months duration (Fig.1). The swelling developed insidiously and increased progressively over the last two weeks. The animal was losing weight. Examination of the animal revealed the presence of a pedunculated swelling on the lateral aspect of the left lower gum against the second premolar tooth (Fig.2, 3). The intermandibular space was occupied with a diffuse swelling which was also encroaching on the lateral surface of the ramus of the mandible.

## **RADIOGRAPHY AND SURGICAL MANAGEMENT:**

Lateral oblique radiographs revealed radiolucent areas involving the ventral part of the left ramus of the mandible (Fig.4). Lytic areas surrounded the dental arcades and the first premolar tooth was situated in a horizontal manner. The lateral border of the lesion was escoretic. There was a diffuse soft tissue swelling on the ventral aspect of the mandible.

The animal was anaesthetized with an intravenous mixture of xylazine/ketamine hydrochloride given at the dose of 0.2 mg/kg body weight and 1 mg/kg body weight respectively. The buccal growth, which was connected to the friable intermandibular lesion, was easily enucleated. Representative tissue samples were fixed in 10% formol saline and processed for histopathological examination.

The camel was re-admitted 4 weeks later. The intermandibular lesion was disrupted oozing a friable necrotic tissue. The bony lesion had increased. The owner was advised to cull the animal.

## **PATHOLOGY:**

The buccal lesion appeared as a hard mass with a smooth firm surface. Its lower part was friable and haemorrhagic. The cut surface had a gritty sensation and cystic inner cavitation. Histologically, the buccal mass was composed of epithelial cells with basophilic granular cytoplasm resembling the salivary serous cells. The cells were arranged in solid sheets, tubular or acinar forms (Fig.5) and occasionally contained mucin. The epithelial elements were separated by myxomatous or fibrous stroma, which was infiltrated with malignant cells of adenocarcinoma. Anaplastic changes in the stroma adjacent to bony tissues was characterized by the presence of malignant giant cells mimic that of anaplastic osteoclasts (Fig.6, 7). The capsule was infiltrated by extensions of new lobules of neoplastic cells (Fig.8). There were areas of necrosis and bony sequestra but no vascular or lymphatic metastasis could be detected.

## **DISCUSSION:**

Based on location and histological appearance, the condition was diagnosed as a salivary fibro-adenocarcino-sarcoma. This constituted the first report in the camel. Such tumours may be associated with difficulty in

prehension and mastication with subsequent emaciation of the animal. The clinical and histological features suggest that the tumour had a local infiltrating and strong osteolytic activity. In several sections the histological features of the tumour mimics the acinic cell carcinoma in man (Cotchin, 1972). However no bony destruction could be reported in the latter. The exact origin of the tumour could not be verified. However its topographic location tempted us to incriminate the sublingual salivary gland (El-Khaligi, 1974, Duhan et al. 1996).

### ACKNOWLEDGEMENTS:

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### REFERENCES:

1. Cotchin, E.(1972). Comparative oncology. Neoplasms of interest to medical and veterinary pathologists. Pesp. Agropec. Bras., Ser. Vet., 7 (Supl.): 1- 16.
2. Duhan, S.S, Nagpal, S.K. and Jain, R.K. (1996). Topographic anatomy, histology and histochemistry of sublingual gland of camel (*Camelus dromedarius*). J. Camel Prac. Res. 3:115-118.
3. El-Khaligi, G.E.M. (1974). Anatomical and histological studies on some of the salivary glands of the one humped camel (*Camelus dromedarius*). M.V.Sc Thesis. Faculty of Veterinary Medicine Cairo, University.
4. Gameel, A.A, Hegazy, A. and Yassein, N. (1998). Primary broncho-alveolar adenocarcinoma in a dromedary camel (*Camelus dromedarius*) Vet Rec. 142:252.
5. Ramadan,R.O. and El Hassan, A.M. (1989). Tumours and tumour-like lesions in the one humped camel (*Camelus dromedarius*). J.Egypt. Vet. Med. Ass. 49:741-745.
6. Ramadan, R. O. (1994). Cysts and neoplastic conditions. In Surgery and Radiology of the Dromedary Camel, 1<sup>st</sup> ed. R.O.Ramadan, King Faisal University, Al Ahsa, Saudi Arabia.
7. Tageldin,M.O. and Omer, F.A. (1986). A note on squamous cell carcinoma in a camel (*Camelus dromedarius*). Indian vet. J. 63:504.
8. Vitovec, J (1982). Renal cell carcinoma in a camel (*Camelus dromedarius*). Vet. Path. 19:331-333.



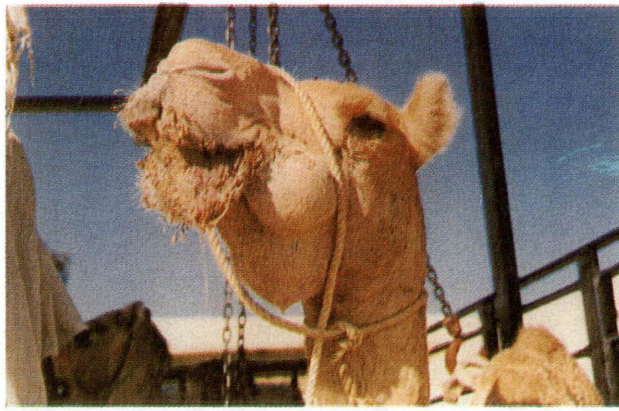


Fig.1 An eight year old camel with swellings on the buccal and submandibular region.

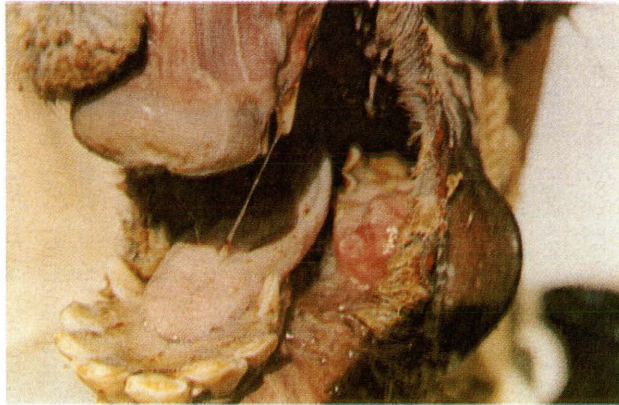


Fig.2&3. The buccal lesion of the camel in fig.1.

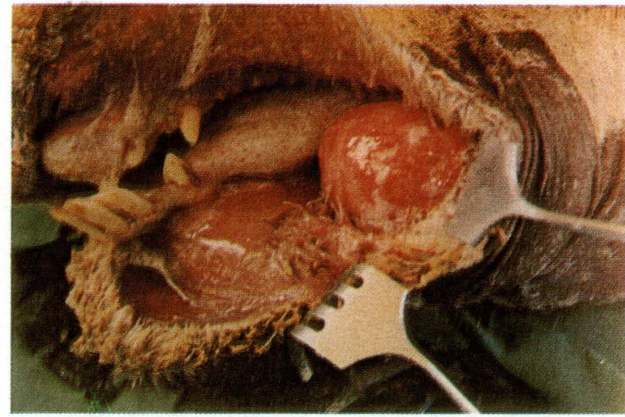


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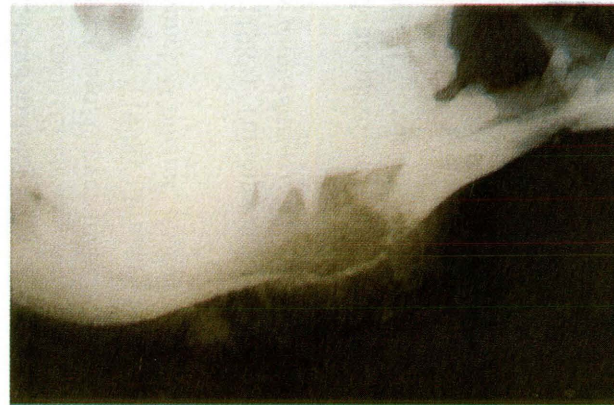


Fig.4. Lateral oblique radiograph of the mandible of the previous camel. Note radiolucent areas surrounding the dental arcade.



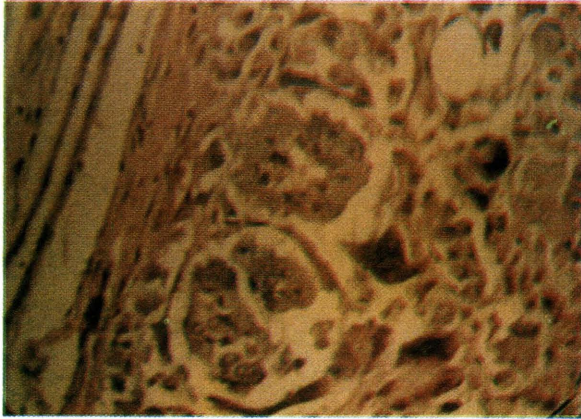


Fig.7. Higher magnification of fig.6 HE x 400.

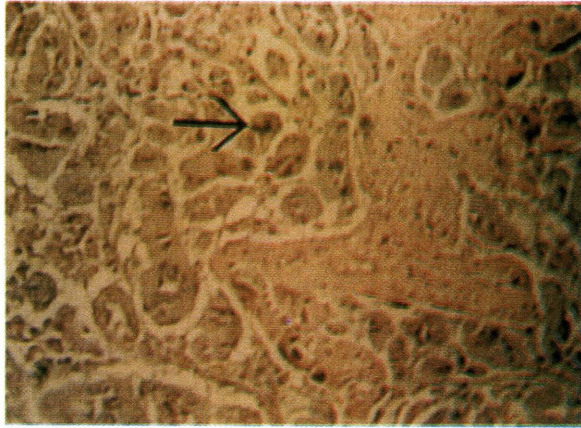


Fig.5. The neoplastic cells are arranged in sheets, clumps and tubules. Note the nuclear atypia (arrow) HE x 100.

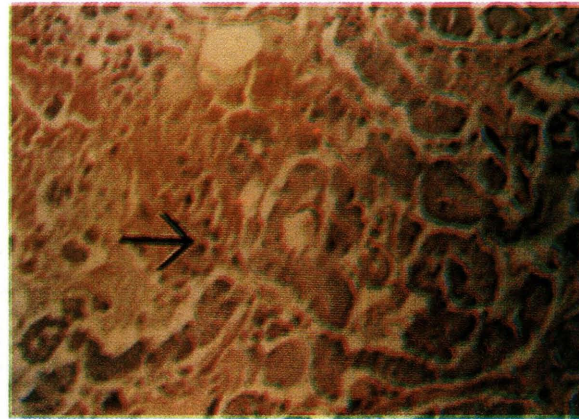


Fig.8. Pleomorphic neoplastic cells (arrow) infiltrating the stroma as well as stromal haemorrhage. HE x 100.

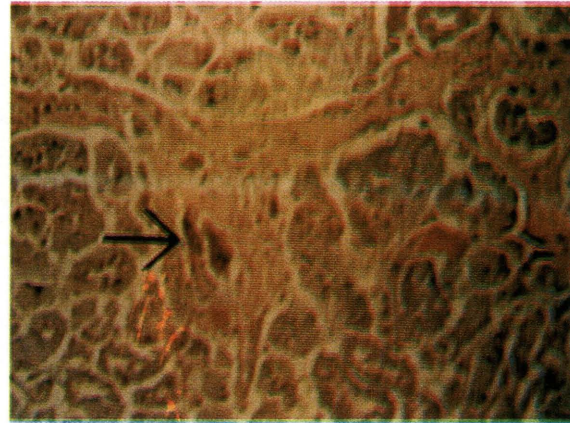


Fig.6. Stromal anaplasia together with the presence of, osteoclast like, multinucleated tumour giant cells (arrow). HE x 100.

## دراسة حالة ورم ليفي بالغدد اللعابية في جمل وحيد السن

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### الملخص :

تم تشخيص ورم غدي ليفي خبيث في ناقة تبلغ الثامنة من عمرها. وقد احتل ذلك الورم الناحية اليسرى للفك السفلي و المنطقة بين الفك. أظهرت الأشعة السينية تآكل عظام الفك وبخاصة في منطقة الأضراس السنية. كما أوضح الفحص المجهرى تكون السرطان من خلايا عدية وليفية وتسربه داخل الأنسجة العظمية. هذا ولم يلاحظ أية خلايا سرطانية بداخل الأوعية الدموية أو اللمفية.