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Clinical Report

Squamous Cell Carcinoma on Nasal Septum of a Mare: A Clinical Report

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Abstract

Case Description- A 25-year-old Arab mare, presented to the department of surgery of veterinary hospital of Shahid Chamran university of Ahvaz with the signs of breathing disorder, snoring,and localizedinfections ofthe nosein the right nostril**.**
Clinical Findings- Physical examination revealed a mass in the nasal vestibule which attached to the septum and caused partial obstruction ofthenasal canal.
Treatment and Outcome- Surgical removal of the mass applied under general anesthesia. Well differentiated SCC was diagnosed based on the results of histopathological examination.
Clinical Relevance- Squamous cell carcinoma (SCC), a malignant, locally invasive neoplasia of squamous epithelial cells, is the second most common tumor in horses.This report describes the SCC in the nasal septum of a horse, as a very rare location for neoplasm.
Key Words- Nasal septum, SCC, Horse.

Case Description

A 25-year old, brown, Arab mare, weighing 400 kg presented to department of surgery of Veterinary Hospital of Shahid Chamran University of Ahvaz with the signs of dyspnea, snoring,and localinfection of the right nasal canal.

Clinical Findings

Physical examination revealed a mass in the nasal vestibule which attached to the septum and caused partial obstruction of the nasal canal. CBC showed moderate neutrophilia, but PCV, body temperature, and heart rate were within normal range.

Treatment and Outcome

The horse initially sedated by 1.1 mg/kg of xylazine 2%, IV (Alfasan co, Neatherland) [11], followed by the fixation of a 14 gauge angiocatheter in right jugular vein. Anesthesia was induced using 2.2 mg/kg of Ketamine 10% (Alfasan co, Neatherland) plus 0.2 mg/kgof diazepam (Chemidarou, Iran) through angiocatheter.[11]The animal was then intubated and connected to an anesthetic machine and maintained using a combination of halothane and oxygen. After positioning of the horse in left lateral recumbency on the surgical table, the surgical area was prepared for aseptic surgery. Surgical incision was made on the right lateral wall of the nasal cavity. The mass exposed and removed *en bloc* after dissection with a margin of 1 cm. To control diffuse bleeding of the surgical site cauterization was applied. Surgical incision was sutured in 2 rows: mucosa and submucosa, using simple continues pattern of absorbable suture material, and the skin, using simple interrupted pattern of syntheticnon-absorbable suture material. Antibiotic therapy (penicillin-streptomycin, 20,000 IU/kg, IM, twice a day)[1],were administered for 7 days after surgery. The mass was fixed in 10% buffered formalinand was routinely prepared and stained with hematoxyline and eosin (H&E) for light microscopy.

In the present case, well differentiated SCC was diagnosed based on the results of histopathological examination, which revealed keratin pearls islands and nests of pleomorphic epithelial cells andand mitotic figures. Cytoplasm was abundant and eosinophilic. Several degrees of keratinization were observed through

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tumor cells (Fig 1). Re-examination was performed 6 months after surgery. The neoplasm recurrence was found, but there wasno sign of metastasis as the chest radiography and palpation of local lymph nodes.

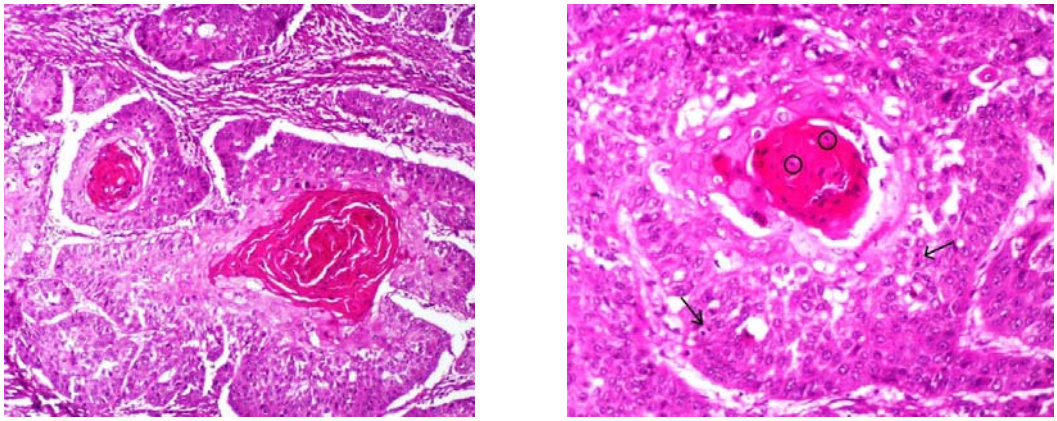

Figure 1- Several degrees of keratinization are observed through tumor cells (Arrows), 10X, (H & E) (Right). The tumor cells had vesicular nuclei with one or multiple very prominent nucleoli (Circled), and showed often mitotic figures (Arrows), 20X, (H & E)(Left).

Clinical Relevance

Squamous cell carcinoma (SCC), a malignant, locally invasive neoplasia of squamous epithelial cells, is the second most common tumor in horses.[1,5,9,10] SCC is the most common neoplasm of the equine eye, conjunctiva, ocular adnexal structures, and external genitalia. It has also been reported in the nasal cavity, paranasal sinuses, pharynx, larynx.[2,5] SCC is an aggressive tumor that is associated with a high rate of recurrence, but with a low rate of metastasis.[1,6,7,10] The only case of nasal septal SCC in horse has been reported 18 years ago.[10] The ultraviolet (UV) radiation is believed to be the primary carcinogen associated with SCC and also SCC has been reported to develop in areas of chronic, poorly healing wounds and at sites of previous burn injury.[4]It has been suggested that draft breeds have an increased incidence of SCC.[1] Treatment options include surgical excision, cryotherapy, radiofrequency hyperthermia, radiotherapy, topical and intraesional chemotherapy, utilizing cisplatin or 5-fluorouracil, bacilleCalmette-Guerin (BCG) cell wall extract, and carbon dioxide laser ablation.[1,9] The recurrence is significant in cases due to following conditions: when tumor could not be removed with margins of safety conditions, and complementary therapies are not going to eliminate residual tumor cells.[3,6] The occurrence of SCC in horses increases with age.[8] In a previous study, higher SCC occurrence isreported in horses between 5 and 8 years of age.[9]Another study reported that the SCC in horses occurred between 8 and 11.8 years.[7] The recurrence of the tumor in the present case can be attributed to the removal of insufficient healthy margin of the tissue, and the age of the horse. Several species can be affected, and at least 3 histologic subtypes can be found based on World Health Organization classification of tumors in domestic animals: well differentiated, moderately differentiated, and poorly differentiated. In a well-differentiated tumor (WDSCC)tumor cells frequently arranged in whorls (pearls) with intensely individual eosinophilic keratinized centers with many intercellular bridges throughout the section. In amoderately differentiated tumor (MDSCC) cells frequently arranged in cords or nests; few whorls present, a few of which contained little eosinophilic cornified material and cells with intercellular bridges infrequently seen. In apoorly differentiated tumors (PDSCC) only a few individual cells are keratinizing; cord formation is common and cells are generally smaller than in other subtypes of SCC.[5,9]In the present study, overall, a marked predominance of large, markedlyangular nucleated squamous with nuclear features of malignancy was suggestive of a WDSCC. When making a diagnosis of SCC, carcinoma with squamous differentiation and papilloma should also be considered. In papillomas, the nuclear morphology should indicate a benign process. In dogs and cats, the possibility of an intracutaneous cornifying epithelioma (ICE) (or keratoacanthoma) should also be considered. Although histologically ICE may be mistaken for a WDSCC, an ICE rarely exceeds 4 cm in diameter and frequently has a crater or pore plugged with keratin debris. Cytologically, an ICE would not resemble either an MDSCC or a PDSCC. The differentiation between WDSCC and ICE is possible by cytology, because ICE cells would not look malignant and are frequently accompanied by many keratin anucleated flakes.[5]

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چکیده

کارسینومای تیغه‌ی بینی در یک راس مادیان، گزارش درمانگاهی

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توصیف بیمار- یک راس مادیان ۲۵ ساله‌ی نژاد عرب با نشانه‌های اختلال در تنفس، خرخر کردن و عفونت موضعی بینی، به بخش جراحی بیمارستان دامپزشکی دانشگاه شهید چمران اهواز ارجاع داده شد.
یافته‌های بیماری- نتایج حاصل از معاینات بالینی، بیانگر وجود یک توده در ناحیه‌ی وستیبول بینی و چسبیده به تیغه‌ی بینی و متعاقب آن، انسداد نسبی کانال بینی بود. جهت برطرف کردن این اختلال، اقدام به برداشت جراحی توده گردید.
درمان و نتیجه- برداشت جراحی توده تحت بیهوشی عمومی انجام شد. کارسینوم سلول‌های سنگفرشی بر اساس نتایج هیستوپاتولوژی مشخص گردید.
کاربرد بالینی- تومور سلولهای سنگفرشی موسوم به Squamous cell carcinoma (SCC) دومین تومور شایع در اسب، یک نئوپلاسم بدخیم است که به صورت ناحیه‌ای سلولهای سنگفرشی اپیتلیوم را مورد تهاجم قرار می‌دهد. این گزارش به توصیف یک مورد کارسینوم سپتوم بینی در یک راس اسب نژاد عرب و ارائه اطلاعاتی پیرامون این نوع تومورها می‌پردازد.
کلمات کلیدی- تیغه‌ی بینی، کارسینوم سلول‌های سنگفرشی، اسب.