Other Companion Animals

Squamous cell carcinoma in a Peregrine Falcon (Falco peregrinus)

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Introduction and Case report Studies:
Neoplasms in birds of prey (Orders Falconiformes and Stringiformes) are not widely reported; therefore it is not possible to calculate the true prevalence of neoplasia in birds of prey1. A retrospective interorder study demonstrated a 9.9% prevalence of neoplasia in Stringiformes in 131 post-mortem cases, while no apparent trend was found in Falconiformes2. In the following case study we describe a Peregrine Falcon with a squamous cell carcinoma (SCC) and discuss the importance of the neoplasm in this species.

Case report
An adult captive male Peregrine falcon weighing 0.60 kg was presented with a lesion on its left flank. The same bird had a history of antibiotic responsive inguinal dermatitis 2 years previously. Severe deep pyoderma on the inguinal region with a central raised granular ulcerated mass was found on the examination. The wound was debrided and a ‘drain tube stent’ was sutured in place. The diagnosis based on histopathology, was a squamous cell carcinoma with severe secondary ulceration and bacterial colonization.

Two weeks post surgery the wound appeared slightly infected. F10 barrier cream® (Health and Hygiene, South Africa) was administered topically and Marbofloxacin 10 mg/kg P.O. BID for 7d was dispensed (Marbocyl, Vetoquinol, UK). Bacterial culture failed to demonstrate growth on Columbia Blood Agar and Mackonkey’s Bile Agar plates.

Two months later the bird was presented with a skin lesion under its right wing. The lesion was 1cmx0.5cm, proliferative, irregular, dark, locally invasive, exudative, with apparent xanthomous aggregates and was considered to be a SCC. The owner declined further histological examination. Fungal culture was performed and was negative. The lesion was surgically removed with as wide margins as possible.

Discussion
Squamous cell carcinoma is a malignant neoplasm of the integument, comprised histologically of an infiltrative nest and cords of moderately undifferentiated to poorly differentiated squamous cells. These cells frequently form ‘keratin pearls’ and central cores of compressed, laminated keratin3. Macroscopically, SCC are seen as proliferative, irregular and broad-based masses or can appear as open wounds or ulcers3. They can arise anywhere in the skin4 but axillary and inguinal regions are the predominantly affected locations in birds of prey1. Secondary bacterial or fungal infections can be associated with SCC1 and it is not uncommon to find xanthomatosis5.

SCC has the potential to slowly metastasise1. Metastasis to bone and lungs are reported6. However, in a review of eighteen cases of SCC in raptors by Forbes (NF), there was a zero incidence of metastasis. In this case, the falcon was presented with a second lesion in a different site which was not considered to be...
to be a metastasis of the inguinal SCC. Signs of metastasis were not seen at the
time, although complete exclusion is difficult as the patient is alive and a
complete visceral examination is not possible.
The most likely differential diagnosis was another SCC; however, other
differentials included bacterial or fungal infection. Rhodotorula mucilaginosa and
Pseudomonas aeruginosa have been occasionally isolated from similar lesions in
raptors7,8. Therefore, bacterial and fungal culture is advisable to exclude primary
infectious causes of such lesions.
Ultimately, the definitive diagnosis must be made by histopathology. A skin
biopsy should be taken prior to resection and the typical ‘keratin pearls’ of the
SCC should be recognised in the histopathological examination.
The aetiology of the SCC is unknown. In birds, cutaneous tumours tend to
develop at sites of chronic irritation or inflammation3. Hence, the development of
the neoplasia could be associated with chronic bacterial or fungal infection or
allergies.
The published information regarding the prognosis and therapy of specific
neoplasms in avian medicine remains limited3. Nevertheless, if complete
resection is possible, surgical excision is the best option.
The use of chemotherapy and radiation therapy is a new and relatively
unexplored field9, however prednisolone10,11,12, doxorubicine13, cisplatine14,
chlorambucil15 and a combination of prednisolone, cyclophosphamide,
vincristine, doxorubicine, asparaginase and alpha-interferon16 have been used
often with good responses.
In conclusion, neoplasms in birds of prey are far more prevalent than was
previously thought17. Since the survey in 2000, at least 15 new SCC cases have
been seen at Great Westerns Referrals and all of them involved Harris Hawks
(Parabuteo unicinctus) and Peregrine Falcons, therefore it could be considered the
most commonly diagnosed neoplasm in birds of prey.

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