

What Is Your Diagnosis?

Author(s):

Source: Journal of Avian Medicine and Surgery, 27(1):59-62. 2013.

Published By: Association of Avian Veterinarians

DOI: <http://dx.doi.org/10.1647/2012-040>

URL: <http://www.bioone.org/doi/full/10.1647/2012-040>

BioOne (www.bioone.org) is a nonprofit, online aggregation of core research in the biological, ecological, and environmental sciences. BioOne provides a sustainable online platform for over 170 journals and books published by nonprofit societies, associations, museums, institutions, and presses.

Your use of this PDF, the BioOne Web site, and all posted and associated content indicates your acceptance of BioOne's Terms of Use, available at www.bioone.org/page/terms_of_use.

Usage of BioOne content is strictly limited to personal, educational, and non-commercial use. Commercial inquiries or rights and permissions requests should be directed to the individual publisher as copyright holder.

What Is Your Diagnosis?

History

A 22-year-old, 83-g, male lilac-breasted roller (*Coracias caudata*) was presented to the Veterinary Hospital at the National Zoo with a history of weight loss and weakness. On physical examination, a 33-g weight loss was confirmed from a previous weight, and signs of moderate dehydration were apparent. A thickened, ulcerated, $1 \times 0.3 \times 0.2$ -cm, plaque-like lesion covered by a yellow, caseous exudate was identified on the upper right palate of the oral cavity. The cytologic findings of swabs taken from lesion's surface revealed yeast-like organisms and intrahistiocytic gram-negative bacteria. With a tentative diagnosis of a cutaneous *Candida albicans* infection, the bird was treated supportively with parenteral fluid therapy (lactated Ringer's solution, 50 mL/kg SC q12h on the first day; then, 50 mL/kg SC q24h for 5 days),

cephalexin (75 mg/kg PO q12h for 14 days), and nystatin (300 000 U/kg applied topically on the lesion q12h for 7 days). Initially, the roller responded positively to treatment.

One week after the initial presentation, the oral lesion appeared hyperemic and friable (Fig 1), and the bird had mild blepharospasm of the right eye with an edematous lower right eyelid. Results of the complete blood cell count (CBC) of the roller revealed anemia (hematocrit, 38% [mean reference range, $47.4\% \pm 6.8$ SD]) and lymphopenia (lymphocytes, 0.6×10^3 cells/ μ L [mean reference range, 3.48 ± 1.82 SD $\times 10^3$ cells/ μ L]).¹ Abnormal results of the plasma biochemical profile included hyperphosphatemia (phosphorus, 5.0 mg/dL [mean reference range, 2.8 mg/dL ± 1.7 SD]) and hyperuricemia (uric acid, 15.8 mg/dL [mean reference range, 7.1 mg/dL ± 4.8 SD]).¹



Figure 1. View of the oral lesion on the right aspect of the palate of a lilac-breasted roller.

Please evaluate the history, results of the physical examination and diagnostic tests, and Figure 1 before continuing. What are the differential diagnoses for this bird, and what other diagnostic tests would you recommend to obtain a definitive diagnosis?



Figure 2. Lateral radiographic view of the skull of the lilac-breasted roller described in Figure 1. Notice the increased soft tissue opacity in the maxillary beak extending to the orbit (arrows).

Diagnosis

Differential diagnoses included fungal or bacterial granuloma and neoplasia. No abnormalities were observed on the ventrodorsal and lateral whole-body radiographs of the roller; however, abnormalities were observed on the ventrodorsal and lateral skull radiographs. In the lateral radiographic view of the skull, a round, increased soft tissue opacity was visible in the caudal nasal passages from the middle one-third of the maxillary beak, extending caudally to the rostral edge of the orbit (Fig 2). In the ventrodorsal view, this opacity extended caudally to the rostral edge of the palatine bone and was predominately observed on the patient's right side (Fig 3).

Based on the physical examination and radiographic findings, a biopsy of the oral lesion was recommended. A 2 × 2-mm section of tissue was removed from the oral lesion and submitted for histopathologic evaluation. A moderately cellular neoplasm composed of nests, cords, and acini of polygonal cells up to 5 cells thick on a moderate, fibrovascular stroma extended to all cut borders. Neoplastic cells had rare mitotic figures, small amounts of cytoplasm, and an irregularly round nucleus with a prominent nucleolus. Based on continued progression of clinical signs and the

decline of this bird's health, the bird was euthanized and submitted for necropsy.

On postmortem examination, histologic sections of the cranium at the level of the mass showed marked desmoplasia around the neoplastic cells and extensive reactive bone remodeling with branching trabeculae of bone extending throughout the neoplasm in former areas of normal skull (Fig 4). In a focally extensive area, neoplastic cells abutted the ulcerated epithelium and were infiltrated by a few heterophils. The mitotic rate was approximately 1 per ×400 field. Histologic diagnosis of the tissue mass was a basal cell carcinoma.

Comments

To our knowledge, this is the first report of basal cell carcinoma involving the oral cavity in a lilac-breasted roller. Currently, Coraciiformes have no apparent trends regarding neoplastic disease.² Basal cell carcinoma is an undifferentiated epithelial tumor arising from pluripotent cells of the epidermis, with the appearance of a broad-based mass.³ Basal cell carcinoma is rare in birds, with documented occurrences in the cervical/ingluvial region of a blue-fronted Amazon parrot (*Amazona aestiva*),⁴ in the beak of a blue and gold macaw (*Ara ararauna*),⁵ and on the leading margin of the third eyelid of a conure (*Aratinga* species).⁶



Figure 3. Ventrodorsal radiograph of the skull of the lilac-breasted roller described in Figure 1. A soft tissue opacity extends to the region of the palatine bone (arrows).

Treatment of choice for avian patients diagnosed with basal cell carcinoma has been surgical excision, but reports indicate that this tumor type often reoccurs with varying malignancy.⁷ Treatment of avian neoplasia has included a combination or sequential use of surgical excision, cryosurgery, chemotherapy, and radiation or photodynamic therapy.^{8,9} Unfortunately, treatments have yielded mixed results, and minimal knowledge is available to determine what benefits are actually gained from certain treatments.⁸

Therapeutic regimens for avian neoplasia cases will depend on various factors including tumor

type and location; whether localized, invasive, or metastatic; and the bird's general health status. In this case, the tumor type and location of the tumor yielded a poor prognosis, and surgery was not considered an option because of its anatomic location.

This case was submitted by **Matthew Raske, DVM, Carlos Sanchez, DVM, MSc, Tabitha Viner, DVM, Dipl ACVP,** and **Suzan Murray, DVM, Dipl ACZM,** from the Departments of Animal Health (Raske, Sanchez, Murray) and Pathology (Viner), National Zoological Park, 3001 Connecticut Ave NW, Washington, DC 20008, USA. Present address: The Animal Medical

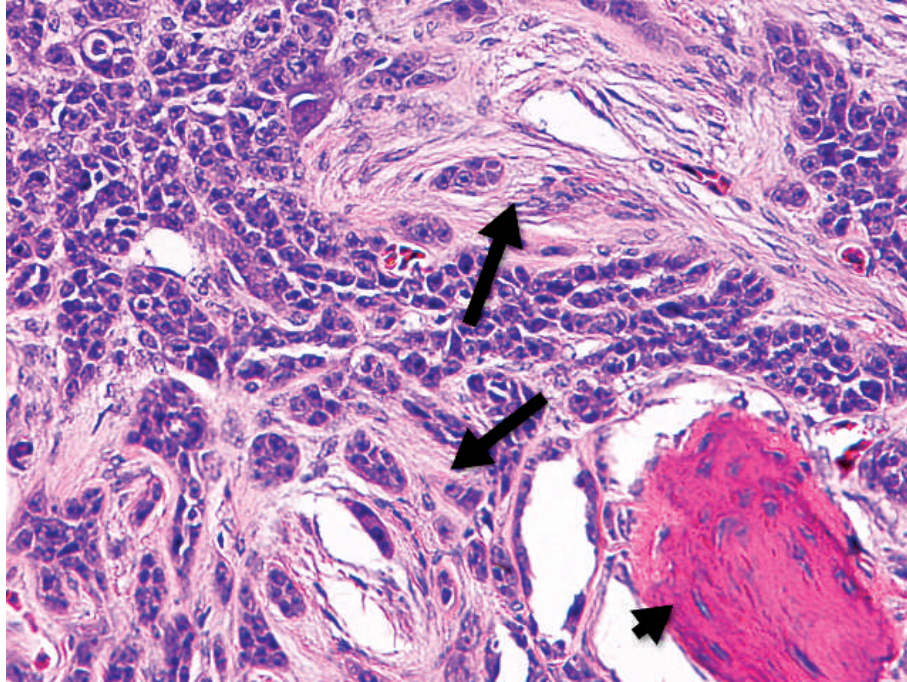


Figure 4. Histologic section of the skull of the lilac-breasted roller described in Figure 1. Cords of neoplastic cells surrounded by desmoplastic tissue displace and replace normal structures (arrows). An island of reactive woven bone is surrounded by neoplastic cells (short arrow) (hematoxylin and eosin, $\times 400$).

Center, 510 East 62nd St, New York, NY 10065, USA (Raske); the Department of Pathology, US Fish and Wildlife Service, 1490 E Main St, Ashland, OR 97520, USA (Viner).

References

1. Teare JA, ed. *Physiological Data Reference Values* [CD-ROM]. Apple Valley, MN: International Species Information System; 2002.
2. Garner MM. Overview of tumors, section II: a retrospective study of case submissions to a specialty diagnostic service. In: Harrison GJ, Lightfoot TL, eds. *Clinical Avian Medicine*. Vol II. Palm Beach, FL: Spix Publishing Inc; 2006:566–571.
3. Reavill DR, Schmidt RE. Avian surgical pathology. In: Fudge AM, ed. *Laboratory Medicine: Avian and Exotic Pets*. Philadelphia, PA: WB Saunders; 2000: 133–146.
4. Tell LA, Woods L, Mathews KG. Basal cell carcinoma in a blue-fronted Amazon parrot (*Amazona aestiva*). *Avian Dis*. 1997;41(3):755–759.
5. Blackmore DK. The clinical approach to tumors in cage birds: the pathology and incidence of neoplasia in cage birds. *J Small Anim Pract*. 1966;7(3):217–223.
6. Kern TJ, Paul-Murphy J, Murphy CJ, et al. Disorders of the third eyelid in birds: 17 cases. *J Avian Med Surg*. 1996;10(1):12–18.
7. Reavill D. Tumors of pet birds. *Vet Clin North Am Exot Anim Pract*. 2004;7(3):537–560.
8. Lightfoot TL. Overview of tumors, section I: clinical avian neoplasia and oncology. In: Harrison GJ, Lightfoot TL, eds. *Clinical Avian Medicine*. Vol II. Palm Beach, FL: Spix Publishing Inc; 2006:560–565.
9. Filippich LJ. Tumor control in birds. *Semin Avian Exot Pet Med*. 2004;13(1):25–43.