

RHABDOMYOSARCOMA IN A BUDGERIGAR (*Melopsittacus undulatus*)

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Summary:

In this report, a 1-year-old, male budgerigar was presented with an irregular, non-ulcerated, lobulated mass on the ventral aspect of the left wing. Tumor encompassed distal humerus, proximal ulna and radius. It was removed completely from the wing surgically and sent to the laboratory. Histopathology revealed a poorly demarcated, highly cellular sarcomatous tumor. There were no complications postoperatively. It was learned from the owner that the bird could use its wing satisfactorily. The bird was followed during 6 months and there was no recurrence. Although budgerigars have a relatively high incidence of neoplastic diseases, rhabdomyosarcoma is infrequently reported in these species. To the authors' knowledge, this is the first report of a rhabdomyosarcoma primarily in a budgerigar wing.

Keywords: *Budgerigar, rhabdomyosarcoma, wing*

Introduction

Rhabdomyosarcoma is a malignant neoplasm originating from striated muscles, skeletal, or cardiac. It is known in many animals species, but is rare in birds. Budgerigars have a high incidence of neoplastic diseases. But rhabdomyosarcoma is one the rare tumor types in the wing and shoulder (Reece, 1992; Fernandez-Bellon et al., 2003; Gulbahar et al., 2005; Ober et al., 2015). The present study describes a rhabdomyosarcoma on a budgerigar wing clinicopathologic.

Case History

A 1-year-old, male budgerigar was presented to clinics with an irregular, non-ulcerated, lobulated mass on the ventral aspect of the left wing. Tumor encompassed distal humerus, proximal ulna and radius (Figure 1). General condition of the bird was good, but it could not fly properly. Tumor was firmly attached on palpation. In radiographic examination, there was an increased opacity in the left distal humerus and muscle area. In the operation, tumor was removed completely from the wing and sent to the laboratory.

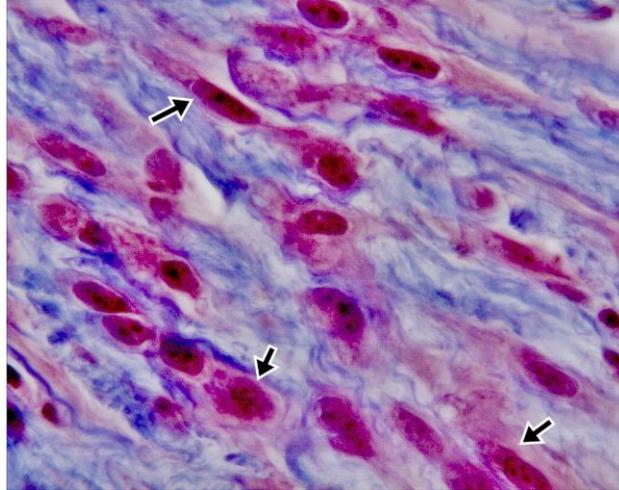
Figure 1. View of rhabdomyosarcoma on a budgerigar left wing.



For histopathological examination Masson's trichrome and haematoxylin and eosin (HE) staining were used. Histologically, sections of the mass were poorly demarcated, highly cellular and invasive. Anaplastic muscle cells comprising prominent eosinophilic cytoplasm and hypochromatic nuclei were organised into different ways in bundles (Figure 2). In some areas, these bundles were

also crossing. The stroma of these anaplastic cells were made up of thin fibrous bundles and hyperemic capillaries. Masson's trichome differentiated muscle and connective tissue cells. Cross striations in the cytoplasm of tumoral cells confirmed rhabdomyosarcoma.

Figure 2. Differentiation anaplastic muscle cells (arrows) within thin fibrous stroma.



There were no complications postoperatively. It was learned from the owner that bird could use its wing satisfactorily. The bird was followed during 6 months and there was no recurrence.

Discussion

Rhabdomyosarcoma was reported in many species also in birds, such as budgerigar (Tavassoly, 2001; Gulbahar et al., 2005), pigeon (Fernandez-Bellon et al., 2003) and cockatiel (Ober et al., 2015). Budgerigars have a relatively high incidence of neoplastic diseases. However, rhabdomyosarcoma is infrequently reported in these species (Reece, 1992). In this case, rhabdomyosarcoma was described on a budgerigar's left wing.

Differential diagnosis of rhabdomyosarcoma is difficult, because many anaplastic sarcomas such as fibrosarcoma and leiomyosarcoma mimic rhabdomyosarcoma with their bizarre cells. There are some typical features for this tumor type and especially cytoplasmic cross-striations visible in histologic sections stained by HE staining (Tavassoly, 2001; Fernandez-Bellon et al., 2003; Ober et al., 2015). In some studies, these cross striations in the cytoplasm of tumoral cells could not be found, instead, highly cellular, poorly demarcated, unencapsulated invasive sarcoma was reported (Fernandez-Bellon et al., 2003). Because the cross striations are uncommon and difficult to find in the cytoplasm easily by HE, the diagnosis of the tumor depends on immunostaining of myogenic components such as desmin and myoglobin which are basic markers for striated muscle cell tumors. In this case, immunostaining could not be used, and the cross striations in the cytoplasm of tumor cells could not be found by HE and Masson's trichome staining, but poorly demarcated, highly cellular was found in tumor sections. Also, anaplastic muscle cells comprising prominent eosinophilic cytoplasm and hypochromatic nuclei were organised into different ways in bundles. In some areas, these bundles were also crossing.

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