

A case of chondrosarcoma in a pheasant (*Phasianus colchicus*)

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Abstract: A pheasant (*Phasianus colchicus*) was referred to the clinic of the Department of Surgery in the Veterinary Faculty of İstanbul University, with the complaint of swelling in the abdomen. Radiography revealed a tumoral mass in the gizzard and the surgical removal of the tumoral mass was performed. The biopsy specimen was submitted to the Department of Pathology. After being processed routinely, specimens were stained with hematoxylin and eosin and Masson trichrome stains. Based on the histopathological findings, the tumor was diagnosed as chondrosarcoma.

Key words: Pheasant, gizzard, chondrosarcoma

1. Introduction

A chondroma is a benign neoplasm of cartilage, whereas a carcinosarcoma is a malignant neoplasm in which tumor cells produce varying amounts of neoplastic chondroid and fibrillar matrix but not osteoid (1). They are seen both in mammals and birds; however, they are very rare in birds (2). Reece reported 383 cases of naturally occurring neoplasms that were identified in 69 avian species, of which 13 were classified as chondroma, and there were no chondrosarcoma cases reported among them (3). Chondrosarcomas are very rare in comparison to chondromas (4). It is reported that a variety of tumors, such as myxosarcoma, histiocytic sarcoma, osteosarcoma, and chondrosarcoma, are induced by the various strains of avian leucosis/sarcoma virus (ALSV) in poultry (5). There are only 4 published reports of chondrosarcoma in wild birds (6–8). No record could be found of chondrosarcoma in a pheasant. Only a case of chondroma, on the beak of a pheasant, was reported from Bursa, Turkey (9). The aim of this study is to present clinical and histological features of chondrosarcoma detected in the gizzard of a 3-year-old male pheasant.

2. Case history

The pheasant was submitted to the department of surgery of our faculty with the complaint of dysorexia and lethargy that had been present approximately for 2 months. Radiography revealed a tumoral mass in the gizzard (Figure 1). A celiotomy was performed on the median

site of the abdominal cavity to remove the tumoral mass in the gizzard. The total removal of the mass could not be done as it was firmly attached to the wall of the gizzard and had expanded to the abdomen. Only a part of the tumor, with dimensions of 3 × 2 × 1.5 cm, was removed. Samples taken were initially fixed in 10% neutral buffered formalin, routinely processed, and then stained with hematoxylin and eosin. Some sections were treated with Masson trichrome stain and they were all examined by light microscopy.

3. Results and discussion

The tumoral mass was firm and its cut surface was whitish in color with some nodular structures. The histological examination revealed that it was composed of variously sized lobules of neoplastic cartilage that had arisen from the tunica muscularis of the gizzard and invaded the tunica mucosa. Those lobules consisted of atypical chondrocyte-like cells and a light basophilic matrix, divided by fibrous connective tissue (Figure 2). Vacuolar degeneration, nuclear pleomorphism, and hyperchromasia in most of the nuclei were remarkable (Figure 3). In the sections of tumor stained with Masson trichrome stain, the areas that surrounded the chondrocytes were stained blue (Figure 4). There was extensive mononuclear infiltration in the tunica mucosa of the gizzard.

Chondrosarcoma is the second most common primary tumor of bone in humans and dogs, and it accounts for approximately 5% to 10% of all canine primary bone tumors

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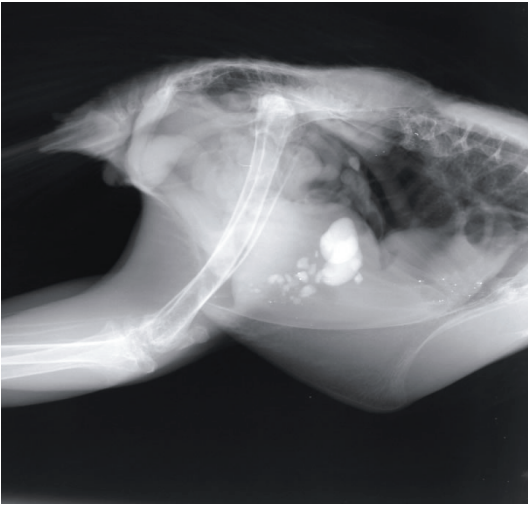


Figure 1. Radiography of the tumoral mass in the gizzard.

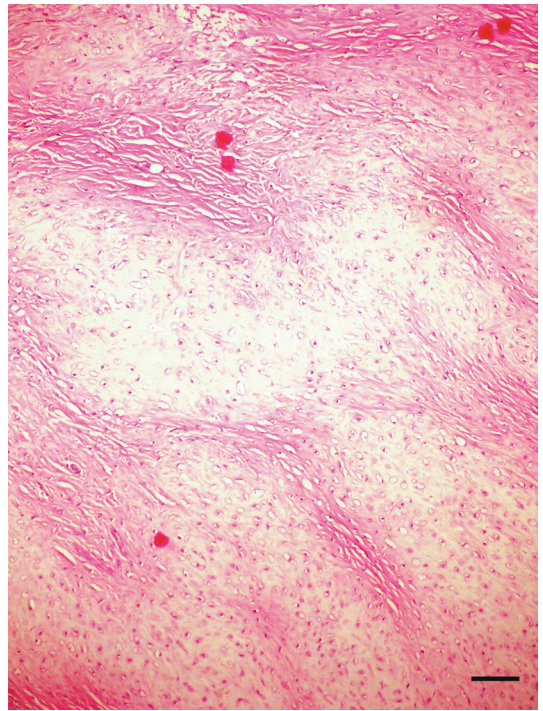


Figure 2. Lobules of neoplastic cartilage (hematoxylin and eosin, bar = 10 μ m).

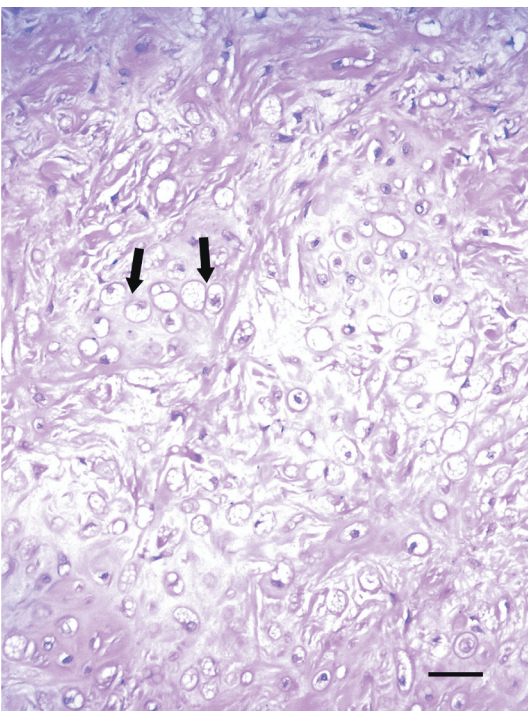


Figure 3. Vacuolar degeneration, nuclear pleomorphism, and hyperchromasia (black arrows) (hematoxylin and eosin, bar = 50 μ m).

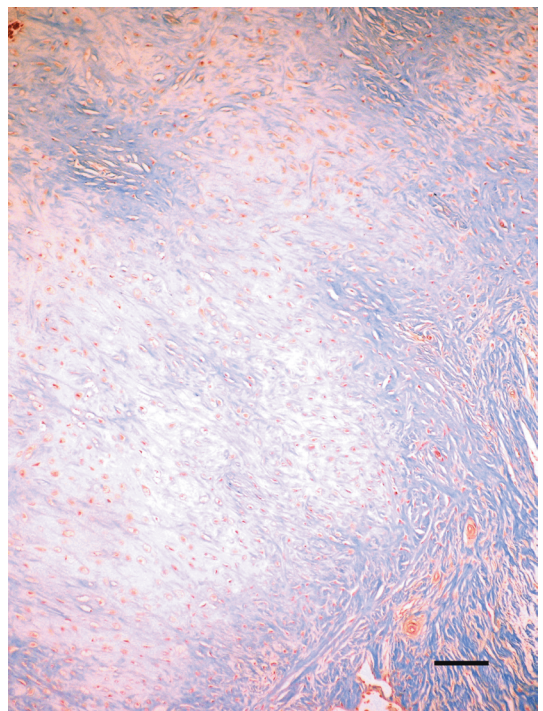


Figure 4. Connective tissue stained blue (Masson trichrome stain, bar = 10 μ m).

(10). However, published reports of chondrosarcoma in birds are very rare (6–8). Although chondrosarcomas most commonly arise from either the cartilaginous structures or bones derived from chondroid precursors, chondrosarcomas may also arise in those areas where cartilage is not normally found. The chondrosarcomas developing in soft tissue presumably arise from cartilaginous differentiation of primitive mesenchymal cells (11). In companion animals the mesenchymal component of mammary gland tumors is known to differentiate into cartilaginous or osteoid tissue, as well (12). In the present report, the neoplasm was thought to have arisen from the metaplasia of the mesenchymal cells in the tunica mucosa of the gizzard, as it did not have any connections with bone or cartilage. Likewise, Kubo reported a neoplasm in a Great Egret that was located on the right carpal joint and mentioned that it had no connections with bones, articular cartilages, or tendons; thus, it was thought to have originated in an articular capsule or soft tissue around the joint (8).

Mitotic figures are seldom present in well-differentiated chondrosarcomas (1). Although no mitotic figures were found in the histological evaluation, the prominent atypia and nuclear pleomorphism of the chondrocytes that were located in a mucinous matrix led us to classify the tumor as chondrosarcoma. It has been suggested that some oncogenic viruses, such as ALSV, may cause neoplasia in poultry (5). Viral inclusion bodies were not found in the neoplasm of this pheasant, but this does not rule out potential viral infection as no virological or serological examination was performed in this case. The pheasant died on the first day following the operation and a necropsy was declined by the owner. Therefore, no further suggestions could be made about the etiology or the putative occurrence of any metastatic lesion. To our knowledge, this is the first reported case of chondrosarcoma in a pheasant and, due to the rareness of reported chondrosarcoma cases in avian species, it is considered to be a valuable contribution to veterinary literature.

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