Full Circle Forum

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Osteoma on the Forelimb of a Cat

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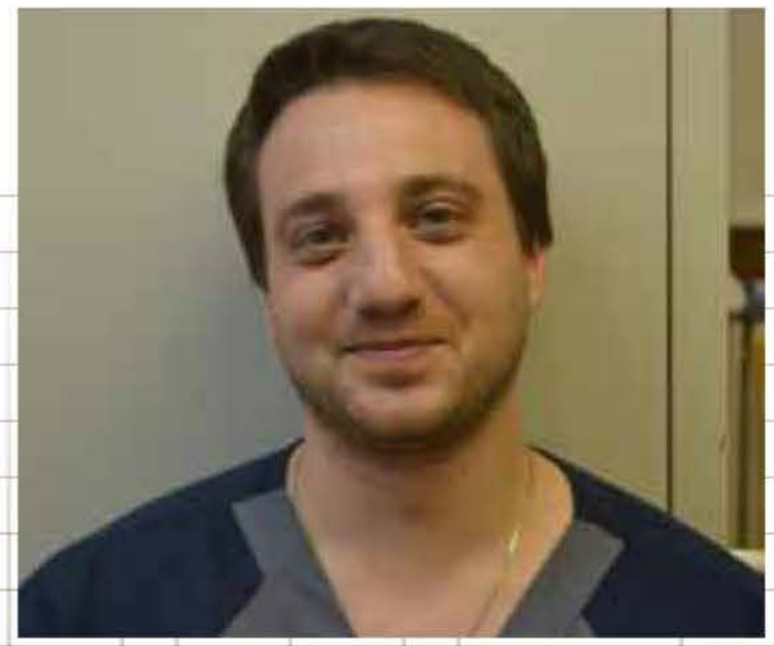
"Gordo" is a six-year-old male neutered domestic shorthair that was referred to the surgery service at Fifth Avenue Veterinary Specialists by Dr. Eric Dougherty of The Cat Practice in New York City. Gordo initially presented for right carpal swelling and right thoracic limb lameness that his owner first observed three days prior to examination.

On presentation, Gordo was bright and alert. Physical examination revealed a grade 1 lameness of the right thoracic limb. There was a firm, affixed 3 x 3 cm mass on the cranial aspect of the distal radial and carpal region. The mass was nonpainful on palpation, but there was mildly decreased range of motion of the right carpus. Gordo had a body condition score of 8/9. The remainder of the physical examination was unremarkable.

Bloodwork performed by Dr. Dougherty just prior to referral revealed: mild thrombocytopenia with evidence of platelet clumping at 132 $10^3/\mu L$ (reference range 200-500 $10^3/\mu L$), mild basophilia at 166 $10^9/L$ (reference range 0-150 $10^9/L$), mild hyperalbuminemia at 4.1 g/dL (reference range 2.5-3.9 g/dL), and mild hypertriglyceridemia at 204 mg/dL (reference



Dr. Dougherty of The Cat Practice, NYC

Figure 1

Figure 2

range 25-160 mg/dL). The remainder of his complete blood count and chemistry panel was unremarkable. FeLV and FIV retroviral testing was negative.

Orthogonal right carpal radiographs were completed under sedation at The Cat Practice (figs 1, 2). Surrounding the distal radius, a large, smoothly margined mineralized mass was detected. The mass protruded distally and was seen slightly overlaying the radiocarpal joint, however the carpal bones did not appear to be involved. No evidence of bone lysis was visible. Three view thoracic radiographs were completed at the time of consultation at FAVS prior to anesthesia and were unremarkable.

Incisional biopsy of the right carpal mass was completed. The outer surface of the mass appeared to have a smooth contour. A biopsy was obtained with use of a Jamshidi biopsy instrument and curette. Histopathology revealed branching and interconnecting osseous trabeculae that formed spaces containing fibrous tissue. Lacunae were irregularly clustered. Cells in lacunae and intertrabecular spaces had small nuclei with condensed chromatin and a low mitotic index. There were no significant inflammatory cell infiltrates. The mass was diagnosed as an osteoma.

One week after the incisional biopsy was completed, the owners elected a more definitive surgery. An excisional biopsy was performed by making a cranial approach over the distal right radius and carpus. The mass was elevated from its attachment of the distal radius and proximal aspect of the joint capsule with a Freer elevator. An osteotome and mallet were utilized to smooth the cranial surface of the distal radial cortex. Histopathology was submitted and reconfirmed the initial diagnosis of osteoma. A soft padded bandage was placed on the right thoracic limb.

Gordo recovered uneventfully from his surgery and was discharged with sublingual buprenorphine. Two weeks post-operatively, Gordo's sutures and bandage were removed. Gordo had subtle lameness and appeared more comfortable at home. Two months post-operatively, a follow up phone call was completed. The owner had not noted any recurrence of the carpal mass and he was ambulating normally at home.

Case Discussion

Differential diagnoses for an osseous mass involving the distal radius or carpal joint include: osteochondroma (either solitary or as part of multiple cartilaginous exostoses), synovial osteochondroma, osteoma, chondroma, chondrosarcoma, osteosarcoma, or metastatic neoplasia.

An osteoma is a benign bone tumor that is generally slow growing. Some believe that an osteoma is not a true neoplasm, but a developmental anomaly that occurs secondary to trauma or infection. It can occur in all domestic species, but tends to occur more frequently in horses and cattle. There are rare reports of osteomas in cats in the veterinary literature.

The largest case series reports 7 cats with osteomas in the oral and maxillofacial regions.[1] Two distinct patterns of osteoma were characterized on CT scan: compact (or cortical) and cancellous. Compact osteoma was well marginated and smooth, while cancellous osteoma was more irregular and expansile with some destruction of adjacent bone. Due to the small sample size of this study, no conclusion can be drawn as to the significance of this distinction.

The mandible was the most common location. Of the three biopsy samples that were cultured, only one grew *E. cloacae;* however this was believed to be a contaminant rather than a true infection. Only one cat underwent a debulking surgery of the mass and was reported to do well one year after surgery. Mandibulectomy or maxillectomy were pursued in three cats. Overall, the cats that underwent surgical intervention had follow up at 1 to 9 years after diagnosis and had a good quality of life and no signs of recurrence.[1]

There is one case report of extraskeletal osteoma in the cat.[2] The mass was within the subcutaneous tissue adjacent, but not attached to the olecranon. The mass was easily excised and no recurrence was noted 3.5 months post-operatively.

In Gordo's case, give the benign nature of the mass, an amputation was mentioned, but not recommended. CT scan would have been a helpful imaging to modality to characterize the extent of the mass and bony involvement.

At this time, Gordo is doing well with no observable lameness or recurrence two months post-operatively. While an osteoma is considered benign, early intervention is still recommended. Debulking surgery as opposed to aggressive resection can be a viable option to address osteomas. While there is no evidence in the literature that malignant transformation occurs, recurrence is possible.

References:

1 Fiani N, Arzi B, Johnson EG, Murphy B, Verstraete FJ. Osteoma of the oral and maxillofacial regions in cats: 7 cases (1999-2009). *J Am Vet Med Assoc* 2011;238(11):1470-1475.

2 Jabara AG, Paton JS. Extraskeletal osteoma in a cat. *Aust Vet J* 1984;61(12):405-407