A case of Osteochondroma in a cat’s ear

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ABSTRACT

In this case report, we aimed to share the clinical and histopathological examination and treatment process of a 6-month-old hybrid cat brought with the complaint of swelling in the medial part of the right auricle. In clinical examination, it was determined that the mass had a hard and irregular surface structure. As a result of the clinical examination, it was decided to completely extirpate the mass and send it to the pathology department. The mass was widely separated from the surrounding tissues and extirpated with the help of cautery. Microscopic examination of the mass revealed that there were chondrocytes among the dense bone cell accumulations and that they formed islands in some areas. As a result of histopathological examinations, it was determined that the suspicious mass was osteochondroma. During the postoperative examinations, it was determined that there was no recurrence or complication in the patient. As a result, it was concluded that this presentation will contribute to the literature since osteochondroma masses are rare in the ear region.

Keywords: Auricle; cat; histopathology; osteochondroma (Source: NLM).

RESUMEN

En este informe de caso, nuestro objetivo era compartir el examen clínico e histopatológico y el proceso de tratamiento de un gato híbrido de 6 meses de edad que presentó hinchazón en la parte medial de la aurícula derecha. En el examen clínico se determinó que la masa tenía una estructura superficial dura e irregular. Como resultado del examen clínico se decidió extirpar completamente la masa y enviarla al servicio de patología. La masa se separó ampliamente de los tejidos circundantes y se extirpó con ayuda de cautero. El examen microscópico de la masa reveló que había condrocitos entre las densas acumulaciones de células óseas y que formaban islas en algunas zonas. Como resultado de los exámenes histopatológicos se determinó que la masa sospechosa era osteocondroma. Durante los exámenes postoperatorios se determinó que no hubo recurrencia ni complicación en el paciente. Como resultado, se concluyó que esta presentación contribuirá a la literatura ya que las masas de osteocondroma son raras en la región del oído.

Palabras clave: Gato; histopatología; oreja; Osteocondroma (Fuente: NLM).
INTRODUCTION

Osteochondroma is a benign tumor mass originating from the outer surface of bone tissue and covered with cartilage tissue (1,2). Since osteochondroma usually develops multicentrically, it is also called multiple cartilage exostosis (1,2,3). Osteochondroma, which is more common in dogs than in cats, was examined etiologically and was associated with genetics in dogs and feline leukemia virus (FeLV) in cats (1,4,5). While osteochondroma often occurs in dogs at a young age and becomes stable in adulthood, in cats it can often appear in adulthood and grow continuously (1,4,5). The most common age range in which it is detected in cats is 24-48 months (1).

Osteochondroma cases are clinically seen as multicentric swellings mostly found on the ribs, vertebrae and scapula (3). Radiographically, multicentric, sessile, and trabecular radiopaque masses originating from bone surfaces can be detected. These masses may differentiate over time and acquire malignant character. Histopathologically, osteochondromas differ from other bone pathologies in that the bone tissue at the base of the mass is covered by cartilage tissue (6,7,8). Continuous growth of the lesions in cats and the possibility of the masses gaining a malignant character (osteosarcoma, chondrosarcoma) in the future indicate that the prognosis is poor. Surgical extirpation of the lesions is quite difficult due to the adjacent tissues. (6,7).

In this case report, the clinical and histopathological findings and treatment process of the cat, which was determined to have osteochondroma in the medial part of the right auricle, were shared. With this case report, we aimed to share a rarely encountered tumor mass in the ears of pets and to contribute to the literature.

Presentation of the clinical case

In this case report, the clinical and histopathological examination and treatment process of a 6-month-old mixed breed cat brought with the complaint of swelling in the medial part of the right auricle were discussed. During the clinical examination, it was determined that there was an abnormal mass measuring 2x1 cm on the medial surface of the right auricle (Figure 1a). It was determined that the mass had started to grow recently, but it did not cause any negative effects on the cat. During the general examination of the cat, it was determined that its vital functions were normal. Considering that the mass might be a neoplastic formation forming on the auricle skin, it was decided to remove it completely.

Figure 1. Mass detected medial to the cat's right auricle (A) (red arrow), postoperative view (B)

After disinfection of the operation area, xylazine hydrochloride at a dose of 2 mg/kg was administered intramuscularly to the patient and sedation was provided. After 15 minutes, anesthesia was achieved by intramuscular administration of ketamine hydrochloride at a dose of 10 mg/kg. When the mass in the medial right auricle of the anesthetized patient was checked, it was determined that it was connected to the auricle skin with a thin stem. The mass was completely extirpated from the base using electrocautery (Figure 1b). In the postoperative period, 60 mg/kg oxytetracycline (Vitaform powder, 55 mg/g oxytetracycline, Deva İlaç, Turkey) was administered orally for 5 days. Again, for pain management in the postoperative period, 0.2 mg/kg meloxicam (Bavet Meloxicam, 5mg/ml, Bavet, Turkey) was administered subcutaneously for 5 days. The extirpated mass was sent to Fırat University Department of Pathology for histopathological examination. In the examination performed 3 months later, it was determined that the patient’s general condition was good and the mass did not recur.

The biopsy sample, fixed in 10 percent formalin solution, was placed in standard tissue tracking cassettes and passed through alcohol, xylene and paraffin series in an automatic tissue tracking device. Paraffin blocking was performed on a tissue blocking device, and 3-5 micron thick sections were taken from the obtained
paraffin blocks onto slides using a rotary microtome. The prepared sections were stained with the Hematoxylin-Eosin (H&E) method in an automatic tissue staining machine. The prepared preparations were examined under a light microscope. Histopathological examination revealed many spindle-shaped, slightly anaplastic and well-differentiated cells in the biopsy tissue. It was noted that these cells were sometimes organized as bone trabeculae, but were mostly randomly distributed (Figure 2A). It was observed that the chondrocytes were dispersed among the dense bone cell accumulations and formed islands in some areas (Figures 2B and 2D). Among the histological features of the tumor, numerous irregular undifferentiated hyaline cartilage islands surrounded by chondrocytes, adipocytes, osteocytes and bone trabeculae resulting from endochondral ossification were noted. While mitotic figures were observed sporadically, especially in chondrocyte cells (Figure 2C), the stromal tissue had a loose myxoid character. This mass, consisting of proliferative bone and hyalinized cartilage-like tissue, was diagnosed as osteochondroma in the light of histopathological findings.

**DISCUSSION AND CONCLUSION**

Osteochondromas are benign neoplastic formations that are less common in cats than in dogs, originating from the surface of the bone tissue and covered with cartilage. Osteochondroma, which usually occurs at a young age in dogs, becomes stable in adulthood. In cats, unlike dogs, osteochondromas, which mostly appear in adulthood (mostly 24-48 months of age), tend to grow continuously (1,2,4,5). In this case report, a case of osteochondroma detected on the medial surface of the right auricle of a 6-month-old, mixed breed cat was discussed. In this case report, although the young age of the cat with osteochondroma is a finding contrary to the literatures, the mass’s tendency to constantly grow is similar to the literatures.

Osteochondroma mostly appears as multicentric swellings on the ribs, vertebrae and scapula. It may cause clinical symptoms of varying severity in patients depending on the location of the mass (1,3). Levitin et al (1) reported that a 2.5-year-old cat, in which they detected osteochondroma around the lumbar vertebrae and long bones, had pain and lameness in its hind legs. Reis et al (2) reported that the cat, in which they detected osteochondroma in the right anterior humerus region, had atrophy in the muscles of the right front leg. In this case report, unlike the places mentioned in the literature, the osteochondroma mass was found in the medial part of the auricle and no clinical symptoms were detected.

Osteochondroma is etiologically associated with genetics in dogs and viral infections (especially feline leukemia virus, FeLV) in cats (8). Although FeLV findings were found in some studies (2) in which osteochondroma was detected and reported in cats, in some studies (1) no FeLV findings were found in serological tests. In this case report, no evidence of FeLV was found in the cat with osteochondroma.

Histopathologically, osteochondromas differ from other bone pathologies because cartilage tissue covers the bone tissue at the base of the mass (1,6,7). Levitin et al (1) reported in their study that osteochondroma masses have different histopathological appearances. They reported that the masses obtained from some areas were connected to the periosteum of the pre-existing
bone, while the masses obtained from some areas were not connected to the periosteum of the pre-existing bone. It has also been reported that in both lesions, the cartilage tissue is ossified and consists of a large number of chondroblasts and a small number of chondrocytes. In the study conducted by Reis et al (2), histopathologically, the presence of cartilage tissue formed by endochondral ossification and chondrocytes mixed into the tumor mass was reported in the osteochondroma mass. In this case report, in the histopathological examination of the suspicious mass, many irregular undifferentiated hyaline cartilage islands surrounded by chondrocytes, adipocytes, osteocytes and bone trabeculae resulting from endochondral ossification were detected.

It is very important to apply treatment due to the continuous growth of the masses in osteochondroma cases in cats and the possibility of the masses gaining a malignant character (osteosarcoma, chondrosarcoma) in the future. The location of the lesions, especially their connection with neighboring tissues, determines the success of the surgical operation (1,6,7). In the study conducted by Levitin et al. (1), they reported that they euthanized the cat due to the poor general condition of the cat in which they detected osteochondroma. In this case report, it was determined that the osteochondroma mass was attached to the auricle skin. The mass was removed in its entirety because the adjacent tissues were not vital organs and their connection with the neighboring tissues was weak. As a result, although osteochondroma cases, which are rarely encountered in cats, are mostly associated with viral infections, it was determined that neither FeLV nor any other viral disease could be detected in some of the patients.

As a result, it was concluded that although osteochondroma cases, which are rarely encountered in cats, are mostly associated with viral infections, especially FeLV, sometimes osteochondroma cases can occur in patients without a viral infection. It was determined that osteochondroma, which mostly occurs in ribs, vertebrae and long bones, can also be encountered in different tissues such as the auricle.

Conflicts of interest

The authors have no conflict of interest to declare in regard to this publication.

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REFERENCES


