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Case Report

Feline Ear Canal Tumors: Managing Squamous Cell Carcinoma Through Surgical Intervention

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Abstract

Squamous cell carcinoma (SCC) is a malignant tumor that can affect the ear canal and pinna of cats, posing significant health risks. This study presents a case of a domestic shorthair cat named Tompel diagnosed with SCC in the ear canal. The cat exhibited clinical signs such as persistent ear scratching, head shaking, ear discharge, dehydration, and nasal discharge. Diagnostic procedures, including cytology and a complete blood count, confirmed SCC. The primary treatment approach was Total Ear Canal Ablation (TECA), which involved the complete removal of the affected ear canal and part of the pinna. Postoperative care included antibiotics, anti-inflammatory medications, and topical treatment. The surgical intervention proved to be the most effective method for managing SCC in this case, leading to successful wound healing and an improved prognosis. This report highlights the importance of early diagnosis and aggressive surgical management for better outcomes in feline SCC cases.

Keywords: Ear canal, Carcinoma, Squamous cell, Tumor

INTRODUCTION

A tumor is an abnormal growth or mass formation of tissue. However, not all tumors present as masses; for example, tumors occurring in hematopoietic cells and carcinoma in situ (Bhadauria *et al*. 2012). Tumors of the ear canal in cats are relatively rare, accounting for only about 1-2% of all tumors (London *et al*., 1996), but they can pose serious health risks. These tumors can be benign or malignant, with the most common malignant tumor being ceruminous gland adenocarcinoma. These tumors can develop in the external ear canal of both dogs and cats. Since these glands line the ear canal, tumors frequently arise, especially in older cats. In cases we have encountered, persistent otitis, frequent head shaking, and ear discharge are common symptoms. Due to these clinical signs, veterinarians often misdiagnose the condition as chronic ear infection. The likelihood of tumors also increases in cats with a history of chronic otitis.

Ear canal tumors in cats can originate from various tissues, including epithelial, glandular, and connective tissues. While some benign tumors, such as papillomas and adenomas, can be found, malignant tumors—particularly adenocarcinomas—are more frequently diagnosed. Generally, surgery is considered the primary treatment option for feline auricular SCC that has not metastasized extensively, as it offers the best chance for local control (Hauck 2013). However, there are only a few reports evaluating surgical outcomes in cats with SCC.

CASE DESCRIPTION

A case was reported in a domestic shorthair cat named Tompel, which presented with an abnormal mass in the ear canal. The cat frequently scratched the affected ear, had not eaten for several days, and persistently shook its head. Before being brought to the veterinary clinic, the cat's ear had been discharging a significant amount of fluid. The cat also showed signs of dehydration, sneezing, and nasal discharge. The SCC was located from the pinna to the external ear canal and extended to the middle ear. The SCC was unilateral, affecting only one ear.

In (Figure 1), the pinna and ear canal appear reddened, and the shape of the ear is abnormal. The affected area feels hard, moist, and warm to the touch.

In Tompel's case, a complete blood test was performed because we decided to proceed with surgical removal of the ear canal using the TECA procedure (Table 1).

CYTOLOGICAL OBSERVATION OF SCC IN THE EAR CANAL

Before surgery, cytology was performed to confirm that the ear abnormality was caused by squamous cell carcinoma rather than chronic external otitis or general inflammation. The findings revealed squamous cells surrounded by inflammatory cells, confirming the presence of SCC. The results are shown in (Figure 2), clearly displaying nuclei, cytoplasm, and irregular granular chromatin.

Atypical squamous epithelial cells appeared in sheets, with oval to angular shapes, an increased nucleus-to-cytoplasm ratio, and moderate anisocytosis and anisokaryosis.

SURGERY

The primary treatment for this case was surgical intervention, which is the most common approach for feline auricular tumors, especially SCC. Despite its malignancy, aggressive surgical management can significantly improve survival time (McGrath *et al*. 2022).

Studies evaluating survival time in cats and dogs with ceruminous gland adenocarcinoma indicate that aggressive surgical management increases survival significantly compared to conservative excision (Marino *et al*. 1993).

In Tompel's case, we performed TECA, removing the entire ear canal and even part of the pinna. Anesthesia was induced using atropine (0.025 mg/kg BW), premedicated with xylazine (2 mg/kg BW), and followed by intra-

Table 1. Complete blood test results for Tompel.

Item	Result	Unit	Description
WBC	38.0	10^9/L	High
Lymph#	7.2	10^9/L	High
Mid#	4.0	10^9/L	High
Gran#	26.8	10^9/L	High
Lymph%	19.0	%	Normal
Mid%	10.4	%	High
Gran%	70.6	%	Normal
RBC	6.93	10^12/L	Normal
HGB	90	g/L	Low
HCT	28.7	%	Normal
MCV	41.5	fL	Normal
MCH	12.9	pg	Low
MCHC	313	g/L	Normal
RDW CV	17.5	%	Normal
RDW SD	23.0	fL	Normal
PLT	515	10^9/L	High
MPV	10.0	fL	Normal
PDW	10.1		High
PCT	0.515	%	High
P-LCC	338	10^9/L	Normal
P-LCR	65.7	%	Normal
EOS	2.5	%	Normal

Figure 1. Tompel's ear affected by SCC.

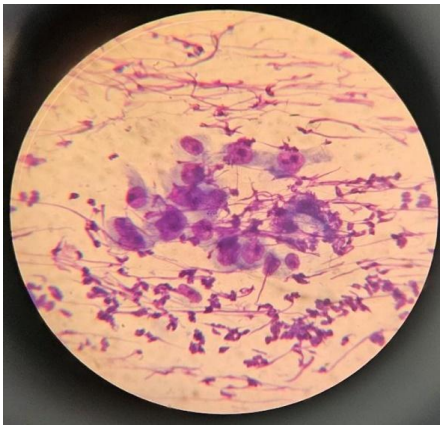

Figure 2. Cytology of the ear stained with Diff Quik, 100x magnification Carcinoma (Diff Quik, 100x magnification).

Figure 3. Postoperative TECA with sutures.

muscular administration ketamine HCl 10% (10 mg/kg BW).

Once anesthetized, surgery commenced. An incision was made around the pinna while the cat was positioned in lateral recumbency. Dissection proceeded through the subcutaneous tissue to expose the ear canal. The canal was excised completely, following the contour down to the tympanic bulla. After removal, the wound was sutured using 3/0 polyglactin acid suture with a cutting needle. Before suturing, a Penrose drain was placed to remove accumulated exudate in the canal (Figure 3).

DISCUSSION

Ear canal tumors in cats are rare but can develop from various structures, including squamous epithelium, leading to SCC. This case highlights SCC in the ear canal and pinna, showing that it is locally aggressive and carries a poor prognosis (Alysha *et al*. 2022).

Reports indicate that 25% of malignant auricular tumors in cats involve the tympanic bulla. Thus, CT scans or skull radiographs are recommended as part of the diagnostic process. Recent findings confirm that SCC is the most commonly diagnosed malignant tumor in the feline middle ear (Alysha *et al*. 2022).

Postoperatively, Tompel was treated with Cefadroxil (30 mg/kg BW), meloxicam (0.12 mg/kg BW), and Neomycin sulfate ointment mixed with placental extract and protein peptides. These medications were administered for seven days. Afterward, the surgical site had healed well without signs of infection.

CONCLUSION

For SCC cases affecting the pinna and ear canal in cats, surgical intervention is the best option, combined with appropriate medication to alleviate pain and promote healing.

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