BULETIN VETERINER UDAYANA

pISSN 2085-2495

eISSN 2477-2712

Received: 3 November 2025; Accepted: 1 December 2025; Published: 6 December 2025

SURGICAL MANAGEMENT OF AURAL HEMATOMA IN A GERIATRIC CAT: A CASE REPORT

Penanganan Bedah Aural Hematoma pada Kucing Lanjut Usia: Sebuah Laporan Kasus

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How to cite: Rizal MF, Sudarsyah HL, Lau H, Yunani R, Melvern R, Sunartoputri GMM, Maharani F, Alya I. 2025. Surgical management of aural hematoma in a geriatric cat: A case report. *Bul. Vet. Udayana.* 17(6): 1860-1866. DOI: https://doi.org/10.24843/bulvet.2025.v17.i06.p09

Abstract

Aural hematoma is a common auricular condition in small animals, particularly cats and dogs, often associated with trauma or otitis externa. Geriatric cases present added clinical complexity challenges due to concurrent systemic conditions and anesthetic risks. A 13-year-old sterilized male domestic cat with gray hair color, named Ali, was brought by its owner to the veterinary clinic (Urban Animal Pet Care Clinic, Bandung, Indonesia) with right auricular swelling and erythema and left auricular abscess rupture. Clinical evaluation revealed an aural hematoma of the right pinna and a ruptured abscess on the left. Hematological and biochemical analysis indicated leukocytosis, elevated BUN and creatinine, and hyperglobulinemia, suggesting chronic inflammation and mild renal impairment. Management included surgical correction of the aural hematoma using the button suture technique and debridement with drainage of the contralateral auricular abscess. Anesthetic dosing was adjusted considering the patient's geriatric status; the standard Zoletil dose of 0.1 mg/kg BW IM was reduced to 0.05 mg/kg BW IM to minimize cardiovascular depression and other potential anesthetic complications. Perioperative fluid therapy was also carefully tailored to the patient's systemic condition. Sutures and bandaging were removed on postoperative day 10 with satisfactory healing and no recurrence. Postoperative management carried out with ciprofloxacin as antimicrobial agent,

dipyrone as analgesic and anti-inflammatory, and *Channa striata* extract aided recovery. The button suture technique represents an effective and minimally deforming surgical approach for aural hematoma in geriatric cats, especially when combined with tailored anesthetic management and postoperative management. This case emphasizes the importance of individualized treatment strategies in elderly feline patients with concurrent systemic conditions. It is important to install a collar from the beginning of the therapy process for the patient. This aims to help accelerate the healing process.

Keywords: Aural hematoma**,** button suture technique, feline surgery**,** geriatric cat

Abstrak

Aural hematoma adalah sebuah kondisi aurikula yang umum terjadi pada hewan kecil, terutama kucing dan anjing, sering kali berkaitan dengan trauma atau otitis eksterna. Kasus hewan usia lanjut memberikan tantangan penanganan klinis yang kompleks dengan kondisi sistemik dan risiko anestesi. Seekor kucing domestik jantan dengan rambut berwarna abu yang sudah dikebiri berusia 13 tahun dibawa oleh pemiliknya ke klinik dokter hewan (Urban Animal Pet Care Clinic, Bandung, Indonesia) dengan pembengkakan dan eritema pada aurikula kanan serta ruptur abses pada aurikula kiri. Evaluasi klinis menunjukan adanya aural hematoma pada pinna bagian kanan dan ruptur abses pada bagian kiri. Analisis hematologi dan biokimia menunjukan adanya leukositosis, peningkatan BUN dan kreatinin, dan hiperglobulinemia, yang menunjukan peradangan kronis dan gangguan ginjal ringan. Penanganan meliputi koreksi bedah aural hematoma dengan menggunakan teknik *button suture* serta *debridement* dengan drainase pada abses aurikula di kontralateral. Dosis anestesi disesuaikan dengan status geriatri pasien, di mana dosis Zoletil yang lazimnya digunakan (0,1 mg/kg BB) IM dikurangi menjadi 0,05 mg/kg BB IM untuk mengurangi risiko depresi kardiovaskular dan komplikasi anestesi lainnya. Terapi cairan perioperatif juga diatur secara hati-hati sesuai kondisi pasien. Jahitan dan perban dilepaskan pada hari ke-10 pasca operasi dengan penyembuhan yang memuaskan dan tanpa kekambuhan. Terapi pasca operasi diberikan menggunakan *ciprofloxacin* sebagai agen antimikroba, *dipyrone* sebagai analgesik dan antiradang, dan ekstrak *Channa striata* untuk membantu proses pemulihan. Penjahitan teknik *button suture* terbukti efektif dan minim deformasi untuk pembedahan pada aural hematoma pada kucing lanjut usia, terutama saat dikombinasikan dengan manajemen anestesi yang telah disesuaikan serta manajemen pascaoperasi. Kasus ini menekankan pentingnya strategi penanganan yang terindividualisasi pada pasien kucing dengan tambahan kondisi sistemik. Penting untuk memasang *collar* sejak awal proses terapi bagi pasien. Hal ini bertujuan untuk membantu mempercepat proses penyembuhan.

Kata kunci: Aural hematoma, kucing lanjut usia, pembedahan kucing, teknik *button suture*

INTRODUCTION

Aural hematoma is characterized by the accumulation of blood between the perichondrial layer and the pinna cartilage, or occasionally within the cartilage itself. The bleeding is thought to originate from branches of the major auricular artery and vein located within, beneath, or between the cartilage layers (MacPhail, 2016). This condition has been reported in several mammalian species, including rabbits (Parihar et al., 2021), goats (Katsoulos & Dedousi, 2021), horses (Boorman et al., 2021), and most commonly, dogs and cats (Xie et al., 2025).

In cats, aural hematoma frequently develops secondary to self-inflicted trauma such as vigorous head shaking or scratching, often driven by otitis externa or ectoparasitic infestations (Niranjana et al., 2017; Hohman et al., 2024). The hemorrhage separates the auricular cartilage from the perichondrium, initiating localized inflammation and fibroblast proliferation. Without

timely intervention, healing may result in fibrosis, auricular contracture, and permanent auricular deformity or usually called as cauliflower ear, which adversely impacts animal welfare and owner compliance.

Therapeutic strategies vary and include conservative needle aspiration alone, aspiration with intralesional corticosteroids, and surgical drainage via straight or S-shaped incisions with suturing (MacPhail, 2016). The choice of therapeutic modality must account for patient-specific considerations. In geriatric cats, underlying comorbidities such as chronic kidney disease or systemic inflammation often complicate anesthesia, wound healing, and postoperative outcomes. Careful diagnostic workup, tailored anesthetic protocols, and minimally invasive yet effective surgical methods are therefore crucial for optimal recovery.

Although aural hematoma is a relatively common condition in small animal practice, feline-specific reports remain limited, particularly regarding comparative outcomes and long-term cosmetic implications of different treatment approaches. This case report presents the clinical course, diagnostic evaluation, and surgical management of aural hematoma in a geriatric domestic cat, with particular attention to tailoring therapeutic choices and postoperative care to current best practices and emerging advances in veterinary medicine. The novelty of this report lies in emphasizing the clinical considerations unique to elderly feline patients, particularly the integration of the button suture technique with adjusted anesthetic and supportive therapy, thereby providing insights into safe and effective management strategies in this high-risk population.

MATERIALS AND METHODS

Signalment and Anamnesis

A 13-year-old sterilized male domestic cat with gray hair color, named Ali, was brought by its owner to the veterinary clinic (Urban Animal Pet Care Clinic, Bandung, Indonesia). According to the owner, Ali developed progressive swelling of the right pinna over several days, accompanied by redness and occasional signs of discomfort. The left pinna had previously shown signs of infection and subsequently ruptured, discharging purulent material. The owner reported a mild decrease in appetite but no known history of trauma.

Clinical Examination

Ali was presented with lesions affecting both pinna. On clinical examination, the left pinna exhibited an abscess with rupture, while the right pinna showed marked swelling and erythema. Palpation of the right pinna revealed localized warmth and fluctuant fluid accumulation, suggestive of an underlying hematoma.

The cat's body weight was 4.0 kg, with a rectal temperature of 39.0 °C. Respiratory rate, pulse rate, and heart rate were within normal limits. Otoscopic and microscopic examination of ear cerumen revealed no evidence of *Otodectes cynotis* infestation.

Hematological and Serum Biochemical Analyses

Hematological and biochemical examinations were performed to evaluate the patient's systemic condition prior to surgical intervention. A total of 3 mL of blood was collected from the patient for hematological evaluation. Hematological assessment was conducted using an IDEXX hematology analyzer, which provided complete blood count (CBC) values, including red blood cell indices, white blood cell differential, and platelet count to detect inflammation or infection. Serum biochemical analysis was performed using a Vetcheck 50 biochemistry analyzer, measuring renal parameters (BUN and creatinine), liver enzymes (ALT and AST), glucose levels, total protein, albumin, globulin, and electrolyte balance.

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https://doi.org/10.24843/bulvet.2025.v17.i06.p09

RESULT AND DISCUSSION

Result

Given the patient's advanced age, complete hematological and serum biochemical analyses were performed to evaluate systemic health status prior to surgical intervention (Table 1 and Table 2). The primary differential diagnoses considered included cystic lesion, pinna abscess, and neoplasia. The final diagnosis was aural hematoma of the right pinna with rupture abscess of the left pinna. The prognosis was assessed as favorable (*fausta*).

Surgical Intervention Techniques

The aural hematoma was corrected using the button suture technique, while the contralateral auricular abscess was managed through debridement and drainage. Both procedures were performed to restore ear structure and support proper healing.

Treatment

Treatment involved surgical correction of the right-sided aural hematoma using the button suture technique, and debridement of the ruptured abscess on the left pinna followed by wound closure and placement of drainage.

Discussion

Clinical assessment revealed significant enlargement and erythema of the right ear pinna, consistent with the clinical features of aural hematoma (Valle et al., 2023). Diagnosis was established based on clinical examination findings in conjunction with the patient's medical history. Microscopic examination of ear cerumen revealed no *Otodectes cynotis* infestation. This is notable, as previous reports indicate that 50–76% of feline aural hematoma cases are associated with *O. cynotis* infestation, with the remainder commonly attributed to other causes such as otitis externa or self-inflicted trauma from scratching (Hewitt & Bajwa, 2020).

Hematological analysis revealed marked leukocytosis, supporting the presence of systemic inflammation, likely secondary to the ruptured abscess of the left pinna. Serum biochemical evaluation showed elevated blood urea nitrogen (BUN) at 69.8 mg/dL and creatinine at 2.66 mg/dL, indicating azotemia and suggesting mild to moderate renal function compromise. Azotemia is frequently observed in geriatric cats and necessitates careful perioperative management to preserve renal perfusion. Hyperglycemia (172 mg/dL) was also observed, likely stress-induced rather than diabetic in origin, warranting intra- and postoperative monitoring.

The total protein level exceeded 10 g/dL, with globulin at 7 g/dL and an albumin–globulin ratio of 0.43, indicating a chronic inflammatory state. This profile is consistent with prolonged infection and immune activation, most likely triggered by the chronicity of the left auricular abscess. Liver enzyme activity and electrolyte levels remained within normal ranges, suggesting preserved hepatic function. Given the patient's renal compromise, anesthesia was induced and maintained using Zoletil administered intramuscularly (IM) at a reduced dose of 0.05 mL/kg body weight (BW), which is half of the standard recommended dose of 0.1 mL/kg BW. The IM route was chosen to provide a slower and more controlled onset of anesthesia and to avoid the rapid cardiovascular fluctuations that may occur with intravenous (IV) administration, particularly in geriatric cats with impaired renal function. Zoletil served as the sole anesthetic agent throughout the procedure, with small supplemental IM doses administered as needed to maintain an adequate anesthetic plane. Perioperative fluid therapy using Ringer lactate was provided to support renal perfusion, stabilize hemodynamics, and minimize anesthetic-related risks (Langston & Gordon, 2021).

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The right-sided aural hematoma was managed surgically via an incision made on the concave surface of the pinna to evacuate the accumulated fluid. Button sutures, adapted to the auricular anatomy, were placed circumferentially around the incision site using simple interrupted 3/0 silk sutures, followed by application of an ear bandage to prevent recurrence (Figure 1A). Both sutures and the bandage were removed on postoperative day 10. Alternative surgical approaches, such as mattress sutures or drainage tubes, have been described but are often associated with higher risks of recurrence, infection, or auricular deformity (MacPhail, 2016; Xie et al., 2025). In contrast, the button suture technique offers the advantages of minimizing auricular distortion, reducing complication rates, and maintaining ease of application (Diana & Adinata, 2025). The ruptured abscess on the left pinna was managed through saline wound irrigation, surgical debridement, and disinfection with 10% povidone–iodine (Figure 1B). The wound was then closed using a simple interrupted suture pattern with 3/0 silk, and a drain was placed to facilitate exudate removal (Figure 1C). Sutures were removed on postoperative day 10, coinciding with the right ear procedure.

Postoperative therapy included the administration of ciprofloxacin (10 mg/kg BW PO, twice daily) for antimicrobial coverage appropriate for geriatric patients, dipyrone (20 mg/kg BW PO, twice daily) for analgesia, and supplementation with *Channa striata* extract, which has been reported to promote wound healing through its bioactive protein and amino acid content. This case highlights the added complexity of treating geriatric patients with concurrent renal compromise. Adjustments in anesthetic protocol and perioperative fluid management were crucial in reducing risk, emphasizing the importance of individualized planning. At follow-up, the cat achieved complete recovery with no recurrence or ear deformity, reinforcing the clinical relevance of combining tailored perioperative care with a minimally deforming surgical technique.

CONCLUSION AND SUGGESTION

Conclusion

The successful management of aural hematoma in this geriatric cat demonstrates that the button suture technique is a safe and effective surgical approach that minimizes recurrence and preserves auricular conformation. Careful perioperative planning, including reduced anesthetic dosing and renal-protective fluid therapy, was critical in addressing the additional risks posed by age-related renal compromise. This case emphasizes the importance of individualized therapeutic strategies for elderly feline patients, integrating appropriate surgical technique with tailored supportive care to achieve optimal clinical and cosmetic outcomes.

Suggestion

It is important to install a collar from the beginning of the therapy process for the patient. This aims to help accelerate the healing process.

ACKNOWLEDGEMENTS

The author would like to thank all parties who assisted in the completion and writing of this article.

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Tables

Table 1. Hematological examination

Parameter	Results	References	Information
WBC (K/µL)	29.91 K/µL	2.87 – 17.02	Elevated
NEU (K/µL)	* 20.87 K/µL	2.30 – 10.29	Elevated
LYM (K/µL	* 6.66 K/µL	0.92 – 6.88	Normal
MONO (K/µL)	* 1.19 K/µL	0.05 – 0.67	Elevated
EOS (K/µL)	0.74 K/µL	0.17 – 1.57	Normal
BASO (K/µL)	*0.45 K/µL	0.01 – 0.26	Elevated
RBC (M/µL)	7.26 M/µL	6.54 – 12.20	Normal
HGB (g/dL)	10.0 g/dL	9.8 – 16.2	Normal
HCT (%)	33.7 %	30.3 – 52.3	Normal
MCV (fL)	46.4 fL	35.9 – 53.1	Normal
MCH (pg)	13.8 pg	11.8 – 17.3	Normal
MCHC (g/dL)	29.7 g/dL	28.1 – 35.8	Normal
RDW (%)	24.3 %	15.0 – 27.0	Normal
PLT (K/µL)	180 K/µL	151 - 600	Normal
MPV (fL)	17.1 fL	11.4 – 21.6	Normal
PCT (%)	0.31 %	0.17 - 0,86	Normal

Abbreviations: WBC=White blood cells; NEU= Neutrophils; LYM= Lymphocytes; MONO= Monocytes; EOS= Eosinophils; BASO= Basophils; NEU (K/µL)= Neutrophil count; LYM (K/µL)= Lymphocyte count; MONO (K/µL)= Monocyte count; EOS (K/µL)= Eosinophil

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https://doi.org/10.24843/bulvet.2025.v17.i06.p09

count; BASO (K/µL)= Basophil count; RBC= Red blood cells; HGB= Hemoglobin; HCT= Hematocrit; MCV= Mean corpuscular volume; MCH= Mean corpuscular hemoglobin; MCHC= Mean corpuscular hemoglobin concentration; RDW= Red cell distribution width; PLT= Platelets; MPV= Mean platelet volume; PCT= Plateletcrit.

Table 2. Biochemical examination

Parameter	Results	References	Information
ALB (g/dL)	3.0 g/dL	2.2 – 4.5	Normal
TP (g/dL)	>10 g/dL	5.4 – 8.9	Elevated
GLO (g/dL)	7.0 g/dL	1.5 – 5.7	Elevated
A/G	0.4		
Ca (mg/dL)	8.4 mg/dL	7.8 – 11.8	Normal
GLU (mg/dL)	172 mg/dL	74 – 159	Elevated
BUN (mg/dL)	69.8 mg/dL	10 – 43	Elevated
P (mg/dL)	7.07 mg/dL	3.1 – 8.5	Normal
AMY (U/L)	1358 U/L	400 – 3500	Normal
CHOL (mg/dL)	187 mg/dL	65 – 225	Normal
ALT (U/L)	60 U/L	8.2 – 123	Normal
TBIL (mg/dL)	0.41 mg/dL	0.1 – 0.9	Normal
ALP (U/L)	21 U/L	10 – 90	Normal
CRE (mg/dL)	2.66 mg/dL	0.3 – 2.5	Elevated
BUN/CRE	26		
CK(U/L)	269 U/L	50 - 450	Normal

Abbreviations: ALB= Albumin; TP= Total protein; GLO= Globulin; A/G= Albumin-to-globulin ratio; Ca= Calcium; GLU= Glucose; BUN= Blood urea nitrogen; P= Phosphorus; AMY= Amylase; CHOL= Cholesterol; ALT= Alanine aminotransferase; TBIL= Total bilirubin; ALP= Alkaline phosphatase; CRE= Creatinine; BUN/CRE= Blood urea nitrogen to creatinine ratio; CK= Creatine kinase.

Figure

Figure 1. Surgical management of aural hematoma and auricular abscess in a geriatric cat. (A) Right ear after incision and evacuation of hematoma, stabilized with button sutures placed in a simple interrupted pattern. (B) Left ear showing ruptured auricular abscess following debridement and irrigation. (C) Left ear after wound closure with simple interrupted sutures and placement of a drain.

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