

Clinical presentation, cytological findings, and surgical outcome of a suspected benign epithelial neoplasm in a dog[†]

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ABSTRACT: Epithelial neoplasms are among the most frequently encountered tumors in dogs, particularly in the skin. The cellular origin and biological behavior of these tumors can be preliminarily assessed by cytological examination and supported by ancillary diagnostic tests, whereas histopathology remains the gold standard for definitive diagnosis. This case report describes a suspected epithelial neoplasm in a 7-year-old male mixed-breed dog named Zeus. Clinical evaluation and supporting diagnostic examinations were performed to characterize the lesion and establish a presumptive diagnosis. Complete blood count revealed leukocytosis, anemia, thrombocytopenia, and anisocytosis, while fine-needle aspiration biopsy of the mass demonstrated epithelial cell features. Collectively, these findings suggested a benign epithelial neoplasm. The case was managed by surgical excision of the mass followed by postoperative therapy.

Keywords:

epithelial neoplasia, cutaneous mass, fine-needle aspiration biopsy, paraneoplastic syndrome, canine

■ INTRODUCTION

Neoplasia is more common in dogs than in cats and is a leading cause of death in older dogs. Cutaneous and subcutaneous tumors are significant in veterinary diagnostics (Graf *et al.* 2018). Tumors are classified as epithelial, mesenchymal, and round cell neoplasms, which are influenced by intrinsic factors, such as breed, age, sex, pigmentation, and extrinsic factors, such as carcinogens, radiation, injury, and viral infection (Prasetyo *et al.* 2025).

A diagnostic evaluation begins with a clinical examination and fine-needle aspiration (FNA) for the preliminary assessment of cutaneous masses; however, classification and grading depend on histopathological confirmation (Ghisleni *et al.* 2006). This is vital for epithelial tumors with morphological heterogeneity and diagnostic complexity, such as uncommon canine cutaneous adnexal carcinomas that require advanced pathological characterization (Bozkurt *et al.* 2022). Despite these advances, integrative case-based reports linking patient history, clinical presentation, cytological findings, diagnosis, and therapeutic management of epithelial neoplasms are limited. This case study analyzes an epithelial tumor in a dog, focusing on case history, clinical findings, diagnostic approach, and treatment strategy.

■ CASE

Signalment: A 7-year-old intact male mixed-breed dog, a Golden Retriever–Husky cross named Zeus, with a black-and-white coat, was presented for evaluation. **History:** The dog presented with a ruptured tumor-like mass on the right forelimb (Figure 1A). **Physical Examination:** On presentation, the dog appeared weak and depressed. Body weight was 21 kg, and rectal temperature was 38.7 °C. The mucous membranes were pale, whereas heart rate and respiratory rate were within normal limits. **Ancillary Examinations:** Complete blood count revealed leukocytosis, anemia, thrombocytopenia, and anisocytosis. Fine-needle aspiration biopsy revealed epithelial cell findings. **Differential Diagnoses:** Epithelial neoplasia, including trichoblastoma, squamous cell carcinoma, and basal cell tumor. **Diagnosis:** Benign epithelial neoplasia. **Prognosis:** Fausta. **Treatment and Management:** Surgical excision of the tumor tissue was performed (Figure 1B–D).

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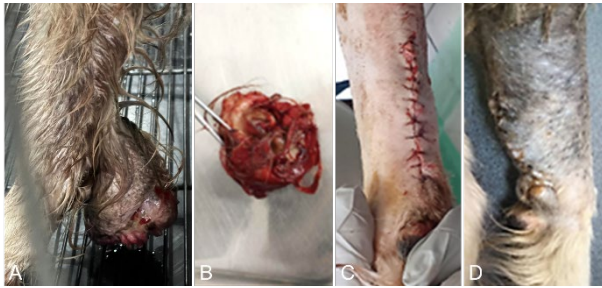


Figure 1. Clinical appearance of the metacarpal mass (A), excised tumor mass (B), immediate postoperative condition (C), and surgical site at 7 days postoperatively (D).

RESULTS AND DISCUSSION

A clinical examination revealed a solitary, firm, round mass, approximately 10 cm in diameter, on the medial aspect of the right metacarpal region. The lesion was ulcerated and ruptured, likely due to repeated licking and biting by the dog, resulting in active hemorrhage (Figure 1A). This presentation is consistent with the clinical relevance of cutaneous tumors in dogs, which are frequently encountered in veterinary practice (Graf *et al.* 2018).

Hematological evaluation revealed leukocytosis, anemia, thrombocytopenia, and anisocytosis (Table S1). These abnormalities are considered compatible with a paraneoplastic syndrome, which refers to systemic manifestations induced by neoplasia rather than by the direct local effect of the tumor or its metastasis (Vail *et al.* 2020). Hematological alterations, such as anemia, thrombocytopenia, and leukocytosis, have been reported as common paraneoplastic findings in dogs and cats (Couto & Nelson 2019).

Cytological examination demonstrated cohesive clusters of polygonal to cuboidal epithelial cells with relatively uniform round-to-oval nuclei, without features suggestive of round cell or mesenchymal tumors (Figure 2). These findings supported a diagnosis of benign epithelial neoplasia, as overt cytological criteria of malignancy were not observed (Barger 2012). Fine-needle aspiration is a useful preliminary diagnostic tool for cutaneous masses; however, histopathology remains essential for definitive tumor classification, particularly in epithelial neoplasms with overlapping morphological features (Vail *et al.* 2020, Bozkurt *et al.* 2022).

The mass was treated by surgical excision, which is considered the preferred approach for benign tumors when complete removal is achievable (Winaya *et al.* 2024). Because the patient showed anemia and thrombocytopenia, sedation with acepromazine (0.01–0.1 mg/kg) and local anesthesia with lidocaine HCl were selected to minimize anesthetic risk. This consideration was clinically relevant, as anesthesia may further reduce erythrocyte and hemoglobin levels and compromise oxygen delivery during the perioperative period (Utami *et al.* 2024). Postoperatively, the dog received intramuscular amoxicillin (20 mg/kg), followed by oral amoxicillin–clavulanic acid (12.5 mg/kg) for 7 days and meloxicam (0.05 mg/kg) for 4 days. By postoperative day 7, the wound had healed well, and no visible tumor regrowth was observed.

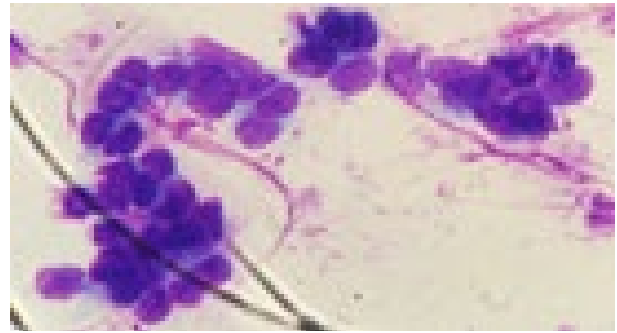


Figure 2. Cytological appearance of epithelial cells in cohesive clusters, with polygonal to cuboidal morphology and relatively uniform round-to-oval nuclei.

CONCLUSION

Zeus was diagnosed with a benign neoplasm in the right forelimb's metacarpal region. The diagnosis was based on anamnesis, physical examination, and diagnostics. Surgical excision and postoperative antibiotics and analgesics led to favorable outcomes, with satisfactory healing by day 7.

ASSOCIATED CONTENT

Supporting Information

†The hematological evaluation was submitted in PDF form as supporting information.

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