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Joseph Smith
UTK; ISU, jsmit604@utk.edu


Caroline Griffin
UTK, cbenham@vols.utk.edu

Phil Jones
UTK, pjones56@utk.edu

Brenda Mulherin
ISU, bmulher@iastate.edu

Silke Hecht
UTK, shecht@utk.edu

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IMAGES IN...

Food/farmed animals

Severe mandibular osteomyelitis and exfoliation of a mandibular canine tooth in a vietnamese potbellied pig

 Joe Smith^{1,2}  | Caroline Griffin² | Phil Jones² | Brenda L. Mulherin³  | Silke Hecht⁴
¹Biomedical Sciences, Iowa State University, Ames, Iowa, USA²Large Animal Clinical Sciences, University of Tennessee, Knoxville, Tennessee, USA³Veterinary Clinical Sciences, Iowa State University, Ames, Iowa, USA⁴Small Animal Clinical Sciences, University of Tennessee, Knoxville, Tennessee, USA**Correspondence**
 Joe Smith, Biomedical Sciences, Iowa State University, Ames, IA, USA.
 Email: animal197@gmail.com

A 10-year-old male castrated Vietnamese potbellied pig presented for evaluation of a dermal mass present on the left cervico-mandibular region. The patient had a mass removed 6 years earlier from the same region, which was diagnosed as squamous cell carcinoma on histopathology. On physical examination, all vital parameters including heart rate, respiratory rate, and temperature were within normal reference ranges, and the owner reported a normal appetite with no recent history of weight loss.

Upon intubation for the dermal mass removal, a large heterogeneous mass of material was observed in the rostral aspect of the left mandible (Figure 1). Once removed, the mass appeared to be grossly composed of foodstuffs, hair, and a firm, mineralized segment of unknown material (Figure 2a). Within the contents of this debris, the left mandibular canine tooth (304) or tusk was identified. For the size of the mass of material, there was minimal inflammation associated with the gingiva and the mucosa (Figure 2b). There did not appear to be any evidence of displacement of the remaining teeth in the area. The periodontal attachment appeared to be normal in the remaining teeth.

DIAGNOSTIC IMAGING FINDINGS

Computed tomography (CT) of the head was performed with the patient anaesthetized as previously described¹ and positioned in sternal recumbency. Findings included severe, multifocal, chronic periodontal disease. The left mandibular canine tooth (304) or tusk was absent, and there was a large bony defect associated with the left mandibular body along the alveolar margin. The bony defect continued to affect the buccal aspect of the mandibular body (Figure 3). There was also extensive periapical lysis and evidence of external tooth resorption of the right mandibular canine tooth (404). The



FIGURE 1 Clinical image of the oral heterogeneous mass of material found within the rostral left mandible of a miniature companion pig

radiographic dental abnormalities were consistent with severe diffuse mandibular osteomyelitis characterized by multifocal moth-eaten bone lysis and irregular periosteal new bone formation, and multiple draining tracts from the right ventral mandible. Additional radiographic findings included absence of all premolar and molar teeth except the right first maxillary premolar (105), multifocal periapical lysis of the remaining teeth, bilateral medial retropharyngeal lymphadenopathy, and evidence of bilateral otitis externa and right otitis media.

DISCUSSION

Miniature companion pigs (MCPs) are increasing in popularity as companion animal pets in North America.² While data for exact numbers are limited, MCPs first appeared in the

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United States in the 1980s, with a dramatic increase in popularity over the past 17 years.³ With the increase in numbers, preventive care strategies are essential to improve animal health and welfare. Commonly reported dental pathologies in MCPs include missing teeth, (most commonly the first mandibular premolar), periodontal disease, and tooth resorption.⁴ Early diagnosis of dental disease and mandibular osteomyelitis is important for companion animal pigs, considering their potentially long life span. Extraction of an infected tusk can be quite challenging. In cases of severe infection and disease, the integrity of the mandible can be affected to the point where it can be unstable after the extraction.⁵ Osteomyelitis can be managed with long-term antimicrobial therapy, including oral, injectable, and regional infusion of antibiotic-impregnated compounds, depending on lesion location.⁶ Removal of the infected nidus, in many cases the tooth, is critical for a positive long-term outcome. A complete oral assessment with inclusion of dental radiographs in MCPs should be considered for proper preventative dental care.⁴ As evidenced by our case, CT is also beneficial for a thorough oral evaluation and dental assessment.

LEARNING POINTS/TAKE-HOME MESSAGE

- Preventative care of miniature companion pigs should include regular oral examinations and incorporate routine tusk maintenance.
- Severe dental disease can lead to significant sequelae, including osteomyelitis leading to loss of mandibular structural integrity.
- Diagnostic imaging is a useful tool for assessment of dental disease in miniature companion pigs.

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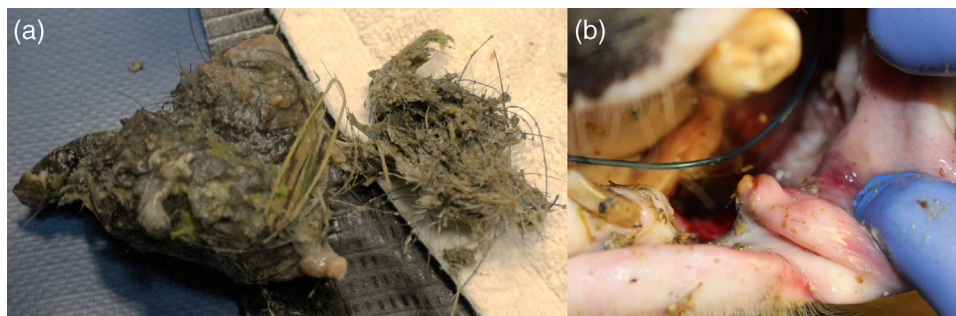


FIGURE 2 (a) Clinical image of the oral heterogeneous mass of material. Note the hair and foodstuff present within the mass as well as the mineralized segment thought to be composed of necrotic bone. (b) Clinical image of the oral cavity of a miniature companion pig following removal of the necrotic bone segment, which exfoliated with the heterogeneous debris. Note the lack of gross soft tissue inflammation

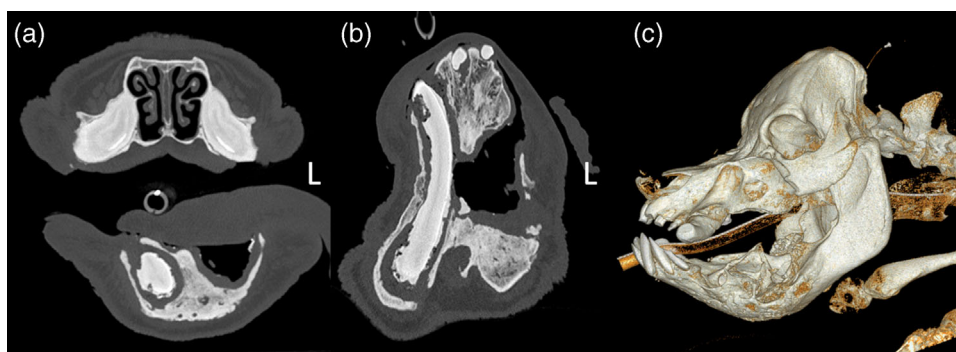


FIGURE 3 Transverse (a), dorsal oblique reconstructed (b) and 3D volume rendered (c) CT images. The left mandibular canine tooth (304) (tusk) is absent, and there is a large irregularly marginated bony defect associated with the left mandibular body along its length. There is also extensive periapical lysis and erosive lesions of the right mandibular canine tooth (404). Multifocal moth-eaten bone lysis and irregular periosteal new bone of the mandible are consistent with diffuse osteomyelitis. Additional findings include absence of multiple other teeth (primarily molars) and multifocal periapical lysis of the remaining teeth

CONFLICT OF INTEREST

The authors declare no conflict of interest.

ETHICS STATEMENT

This case represents a retrospective clinical case report and not a prospective study that requires institutional approval.

ORCID

Joe Smith  <https://orcid.org/0000-0002-4288-2262>

Brenda L. Mulherin  <https://orcid.org/0000-0002-7860-7465>

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