Diagnostic Exercise

From The Davis-Thompson Foundation*

Case #: 66 Month: March Year: 2016

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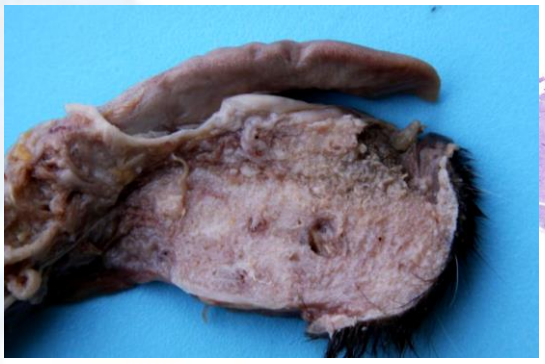
Clinical History: A 12-year-old, male domestic short hair cat was presented for assessment of a mandibular mass. The mass had increased in size over a period of two months from 1-2 cm to approximately 6-7 cm. As per the owner, the patient had not been coughing, sneezing, vomiting, or having diarrhea. Likewise, the appetite was reported as normal, but the owner reported difficulty feeding the cat due to the mandibular mass interfering with normal prehension. Due to the advanced age and likely poor prognosis, the animal was euthanized and submitted to necropsy. Fine needle aspirate was not diagnostic. The cytology slide had few spindle cells insufficient for the diagnosis. Radiographs revealed a mass in the lower left jaw with severe bone destruction and evidence of osteolysis.

Necropsy Findings: The necropsy revealed a unilateral left rostral mandibular mass. The mass was hard, distorting and replacing the mandible bone. A 1 cm ulcer was found at the level of the incisors. The left incisors, canine tooth and first premolar were missing. There were no other relevant findings.

Gross images:



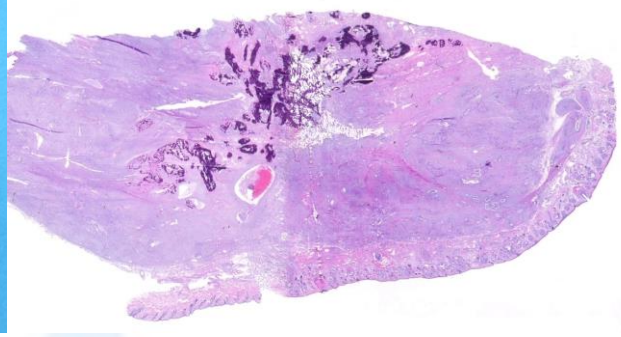


Figure 1 (left) - Cross section of the mandible with skin (bottom right) and tongue (top) around the mass. **Figure 2 (right) -** Subgross appearance of the mandibular mass.

Differential diagnosis(es): Squamous cell carcinoma, fibrosarcoma, odontogenic tumor (ameloblastoma), amyloid producing odontogenic tumor, and osteosarcoma.

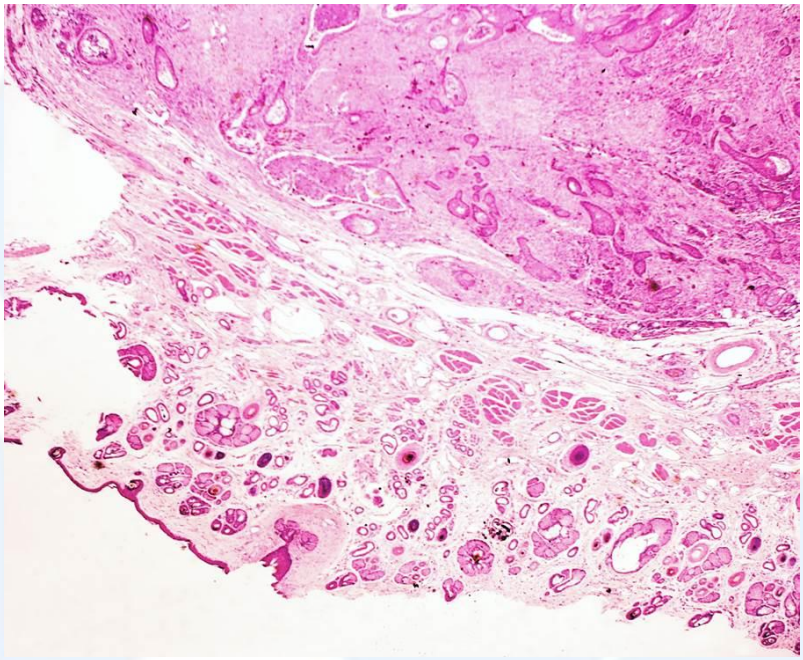


Figure 3 – A 4x3 cm diameter non-encapsulated mandibular mass covered by intact skin expanded and effaced the left lower jaw. Hematoxylin and eosin (H&E) stain, 2X.

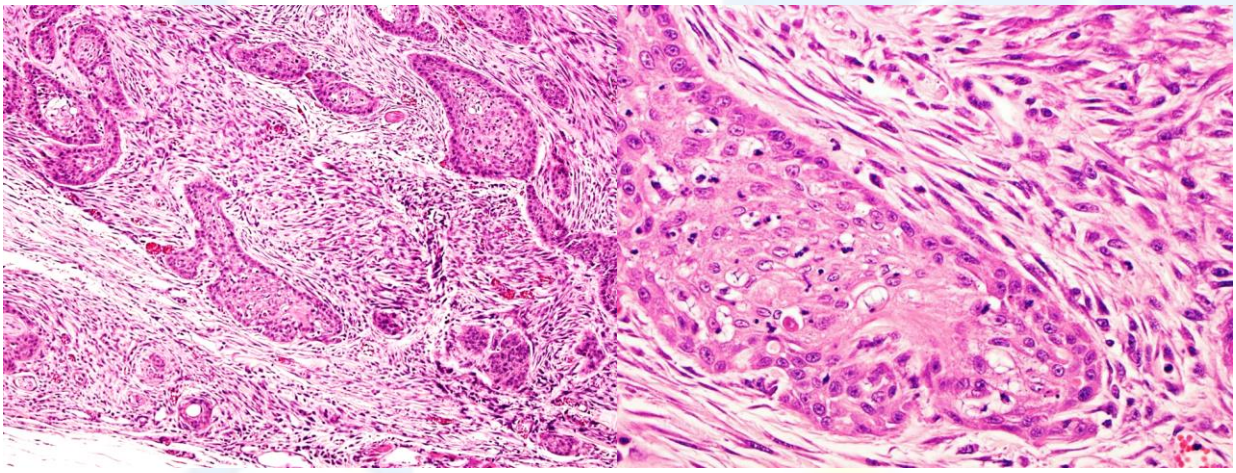


Figure 4 (left) and 5 (right) – The mass was comprised of epithelial islands of neoplastic stratified epithelium surrounded by abundant elongated tightly packed cells. H&E stain, 10X (left) and 40 X (right) magnifications.

Microscopic findings: The mandibular mass was composed of variably sized islands and cords of concentrically arranged neoplastic stratified epithelial cells with variable degrees of squamous differentiation and occasional keratin pearls. The neoplastic cells were large and polygonal with abundant pale to brightly eosinophilic homogenous cytoplasm, a round vesicular nucleus and a single prominent nucleolus. The neoplastic cells had moderate loss of polarity and increased

mitotic rate. Tumor cells were surrounded by loosely arranged spindle shaped cells embedded in prominent stroma that occasional differentiated into homogenous eosinophilic slender trabeculae (interpreted as osteoid). Mixed among neoplastic cells, stroma and pre-existent bone spicules there were small areas of osteoclastic resorption of the adjacent bone, characterized by occasional osteoclast lining of the bone spicules. A Congo Red stain was negative.

Morphological diagnosis: Lower jaw: Squamous cell carcinoma with desmoplasia and osteolysis.

Discussion: Oral neoplasia in cats is relatively common, comprising 10 % of all tumors. Squamous cell carcinomas (SCC) are the most common oral neoplasms in cats, with fibrosarcomas being the second most common. The most common site for oral SCC is sublingual; however, the rostral mandibular/gingival location with extensive bone lysis seems to be particularly frequent. Tonsilar SCC has also been reported in dogs and cats. Parathyroid hormone related proiein (PTHrP) expression in osteolytic invasive oral SCC has been described in cats.

References:

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*The Diagnostic Exercises are an initiative of the **Latin Comparative Pathology Group (LCPG)**, the Latin American subdivision of The Davis-Thompson Foundation. These exercises are contributed by members and non-members from any country of residence. - Consider submitting an exercise! - A final document containing this material with answers and a brief discussion will be posted on the CL Davis website (http://www.cldavis.org/diag_exercise.html).

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