What Is Your Diagnosis?

**History**

An 8-year-old spayed female Himalayan cat was evaluated because of a 3- to 4-month history of multiple, loud, dry coughing or retching episodes daily. Corticosteroids and antimicrobials were prescribed by the referring veterinarian multiple times without a change in clinical signs. The frequency and severity of signs increased. The cat maintained normal eating and drinking habits during this time.

On physical examination, the cat was bright, alert, and responsive. Auscultation of the thorax revealed mildly increased bronchovesicular sounds bilaterally. The remaining physical examination findings were unremarkable. No abnormalities were seen during an oral examination of the sedated cat. Results of a CBC, serum biochemical analysis, and urinalysis were unremarkable. Thoracic radiographs were obtained, and initially, no abnormalities were noted (Figure 1).

Determine whether additional imaging studies are required, or make your diagnosis from Figure 1—then turn the page →

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Diagnostic Imaging Findings and Interpretation

On further review of the lateral radiograph of the thorax, an approximately 10-mm-diameter round, smoothly marginated, soft tissue opacity is evident on the edge of the film (Figure 2). This prompted acquisition of an additional lateral radiograph of the neck centered on the soft tissue opacity (Figure 3). This image localized the lesion to the intrapharyngeal opening located at the caudal margin of the soft palate, outlined by gas in the cranio cervical portion of the trachea. There was also a small volume of gas in the esophagus. Computed tomography (CT) was used to further characterize the lesion and determine treatment options (Figure 4). A right-sided, lobulated, $10 \times 10.5 \times 4.5$-mm soft tissue–attenuating mass was attached to the caudal tip of the soft palate. The imaging procedure was repeated immediately following IV injection of iopromide (880 mg/kg [400 mg/lb]). Mild contrast enhancement occurred in the peripheral margins of the mass (85 Hounsfield units), but the center of the lobules remained unenhanced (62 Hounsfield units). There was no evidence of regional lymphadenopathy. The mass was not evident during intubation or extubation of the trachea. On the basis of radiographic and CT findings, differential diagnoses consisted of abscess, cyst, granuloma, or soft palate neoplasia. The slight marginal contrast enhancement of the thick-walled lobules with less dense centers suggested that the lobules may have necrotic or fluid-filled centers. Comments

Endoscopic examination confirmed the CT findings in the soft palate. The lesion was approached surgically by pulling the soft palate rostrally with stay sutures. Each lobule was opened with a 2-mm incision. A thick, yellow pus-like material extruded from the incisions. The incisions were left open to drain. The yellow material and a small amount of adjacent soft palate tissue were submitted for bacteriologic culture and histologic and cytologic examination. Histologic evaluation confirmed myonecrosis of the soft palate with occasional areas of myoregeneration and perivascular neutrophilic inflammation. No microorganisms were detected, and the necrotic debris contained no foreign material or neoplastic cells. Results of aerobic and anaerobic bacteriologic cultures were negative. The diagnosis was necrosis of unknown origin with possible localized vasculitis. Focal muscle necrosis with partial regeneration and concurrent vasculitis may be caused by localized trauma or pressure necrosis, an infarction, moderate to severe inflammatory response to bacteria, or inoculation with a toxin or foreign material. The severity of the necrosis and the potential for regeneration is determined on the basis of the inciting cause. In the cat of the present report, no definitive cause of the
muscle necrosis was determined. Sterile myonecrosis of the soft palate has not been described in the literature. The possibility that a foreign body was the inciting cause but later migrated into the oropharyngeal cavity cannot be excluded. The progressive dry, non-productive, chronic coughing or retching was consistent with an upper airway irritant. However, this cat did not have typical upper airway disease signs such as sneezing, nasal discharge, respiratory difficulties, stridor or stertorous breathing, or decreased appetite.

Based on the worsening cough and initial physical examination findings, the differential diagnoses included an upper airway irritant, such as a pharyngeal polyp without nasal or bullae involvement, or a lower bronchiole irritant, such as asthma. Thoracic radiography revealed no abnormalities within the thoracic cavity, and the area of concern was clearly not a polyp. Contrast-enhanced CT defined the mass as lobulated with thick-walled margins and centers with reduced density and lack of enhancement, suggesting fluid within the lobules. Histologic evaluation of the mass further ruled out neoplasia, granuloma, polyp, or cyst.

In this case, there was myofibril necrosis with associated vasculitis. There were neutrophils but no lymphocytes, plasma cells, or monocytes. No reports of soft palate myonecrosis occurring independent of neoplasm or pharyngeal polyp were found in the literature.

The cat was discharged from the hospital 2 days after the surgical procedure. The cat was eating and drinking normally at follow-up examination and remained healthy and cough free for at least 12 months.