Thyroid Carcinoma: Ultrasound, CT, or MRI?

Ultrasound (US), CT, MRI, and physical examination findings were compared for evaluation of canine thyroid carcinoma. There were 3 objectives: 1) identify CT and MRI features in canine thyroid carcinoma; 2) compare the sensitivities of US, CT, and MRI in diagnosing thyroid carcinoma; and 3) compare physical examination and radiologic findings in the evaluation of regional lymphadenopathy and local invasion of the thyroid mass. Diagnosis was ultimately confirmed with histology.

Characteristics of the masses examined included origin, size, degree of vascularization, capsule disruption, local tissue invasion, and lymphadenopathy. With MRI, thyroid carcinomas appeared hyperintense compared with surrounding muscle; on CT, thyroid carcinomas showed a lower attenuation value than did normal thyroid tissue; mineralization and fluid pockets within masses were common as well. The most common presenting clinical signs were respiratory and included coughing, dyspnea, gagging, and stertor/stridor.

MRI had the highest sensitivity (93%) and CT the highest specificity (100%) in diagnosing thyroid carcinoma. In this study, MRI was preferred for diagnosing and staging thyroid carcinoma. US had the lowest sensitivity and specificity but was useful as an initial screening tool. Palpation was not accurate in determining local tissue invasion.

Commentary

Masses in the neck of dogs may arise from multiple tissues (eg, mandibular/retropharyngeal lymph nodes, salivary glands, thyroid/parathyroid glands, esophagus, trachea, hyoid apparatus). Not all cervical masses are caused by neoplasia; for example, cervical masses may represent abscesses or hematomas. Although this study focused on a specific tumor type (thyroid carcinoma), it demonstrated the difficulty of identifying the exact organ of origin and local extension of large cervical masses, particularly with US. Accurate identification and mass histopathology significantly impact surgical or medical options and prognosis. When presented with a cervical mass, referral should be considered for cross-sectional imaging (eg, CT, MRI) or consultation with a diagnostic imaging specialist.—*Ajay Sharma, BVSc, MVSc, DVM, DACVR*

Source

Comparison between clinical, ultrasound, CT, MRI, and pathology findings in dogs presented for suspected thyroid carcinoma. Taeymans O, Penninck DG, Peters RM. *VET RADIOL ULTRASOUND* 54:61-70, 2013.

Hairballs Again? Consider This

This clinical review examined chronic hairball production in cats as a possible sign of underlying disease and offers prevention and treatment options. Hairball formation is caused by excessive hair ingestion and/or improper upper GI mobility secondary to illnesses such as dietary intolerance or inflammatory bowel disease. Domestic cats normally spend ~25% of their waking hours grooming; this may be increased by the presence of fleas or other ectoparasites, pruritic skin diseases, and behavioral overgrooming. Controlling underlying skin and GI diseases is crucial to preventing hairball formation.

Hairballs not expelled by vomiting may cause significant illness, including partial or complete intestinal obstruction, esophageal obstruction, esophagitis, and upper respiratory inflammation (from vomition into the nasopharynx). As cats have fewer interdigestive GI contractions, it is best to feed smaller, more frequent meals to increase gastric emptying time. Canned food and round (not triangular) dry food clear quickly, helping hairballs exit the stomach. Commercial hairball control diets may help. Other preventive measures include shaving fur, gastric lubricants, and medical management using prokinetic agents (eg, metoclopramide, cisapride, ranitidine).

Commentary

Frequent hairball elimination indicates excessive fur ingestion or underlying GI disease. Once excessive fur ingestion from ectoparasite infestation, pruritic skin disease, or overgrooming from pain or anxiety is ruled out, treatment of underlying GI disease may be necessary. The paucity of well designed studies regarding hairball vomiting makes objective recommendations difficult. Dietary manipulation, gastric lubricants, and clipping long-haired cats are recommended before considering long-term medication. Of note, the included poll of cat owners suggested that long-haired cats vomit hairballs roughly twice as often as short-haired cats.—*Glenn Allen Olah, DVM, PhD, DABVP (Feline)*

Source

Hairballs in cats: A normal nuisance or a sign that something is wrong? Cannon M. *J FELINE MED SURG* 15:21-29, 2013.