What Is Your Diagnosis?

Figure 1—Transverse computed tomographic views at 2 levels through the rostral frontal sinus, orbits, and nasal cavities of an 8-year-old dog evaluated because of chemosis, mucohemorrhagic epistaxis, and dorsal displacement of the left globe. The view on the left is anatomically rostral to the view on the right. Scan settings, KVP 120 and MA 120; 2-s exposure with 2-mm slices; soft-tissue technique.

History

An 8-year-old 54-kg (119-lb) female Golden Retriever was examined because of unilateral chemosis and mucohemorrhagic epistaxis of 2 weeks’ duration. Oral administration of antimicrobials and corticosteroids did not alleviate clinical signs. A CBC, serum biochemical analyses, and radiography of the skull and thorax were performed. The dog was referred for further evaluation.

Physical evaluation revealed a prolapsed third eyelid and swelling of the soft tissue in the ventral portion of the left orbit, which resulted in dorsal displacement of the globe. The globe could not be retropulsed. Mild enlargement of the left submandibular lymph node and thick mucohemorrhagic discharge from the left nare were also detected.

Abnormal laboratory results included mild neutropenia and moderate lymphocytosis with a leukocyte count within reference range. Alkaline phosphatase, alanine transaminase, and aspartate transaminase activities were high. A faint unilateral soft-tissue opacity extending from the left nare to the rostral frontal sinus was evident on radiographs of the skull. Lesions were not identified on radiographs of the thorax. A computed tomographic scan of the area from the rostral portion of the nares to the caudal aspect of the frontal sinuses was obtained (representative views, Fig 1), and fine-needle aspiration of the left submandibular lymph node and ventral portion of the orbital swelling was performed.

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

Computed tomographic diagnosis—A homogeneous soft-tissue mass with accompanying lysis of bone can be seen extending from the rostral portion of the left nasal cavity into the caudal portion of the rostral frontal sinus. A large soft-tissue mass is also evident in the ventral portion of the left orbit (Fig 2).

Comments

Differential diagnoses for unilateral nasal discharge include trauma, foreign body, and neoplasia. Allergic, fungal, and bacterial rhinitis were also considered, but these conditions usually cause bilateral nasal discharge. Most nasal tumors are adenocarcinomas. Fibrosarcomas, osteosarcomas, and chondrosarcomas develop but are less common. Differential diagnoses for exophthalmia, prolapse of the third eyelid, and dorsal deviation of the globe include abscess, foreign body, granuloma, cellulitis, and neoplasia. Orbital tumors can have connective tissue, bone, epithelial, and hemolymphatic origins. The differential diagnosis most consistent with this dog’s clinical signs was neoplasia.

A soft-tissue opacity was evident in the left nasal cavity and rostral frontal sinus on radiographs. The extent of the opacity and its relationship to the left eye could not be determined by means of plain radiography; therefore, computed tomography was used to evaluate destruction of the nasal septum, surrounding bone, and the extent of the lesions. Computed tomography is the preferred diagnostic imaging method for evaluating the nose, sinuses, and periorbital area. Computed tomography provided confirmation of a unilateral soft-tissue opacity extending from the nare into the rostral frontal sinus with bony lysis and extension into the ventral portion of the orbit. In this case, computed tomography was superior to radiography, because it provided increased contrast resolution, better tissue visualization, and minimal superimposition of underlying structures. Orbital ultrasonography could have been performed to evaluate the extent of the retrobulbar lesion; however, orbital ultrasonography would not have defined the relationship of the retrobulbar mass to the nasal cavity. Fine-needle aspiration of the left submandibular lymph node revealed a normal population of small lymphocytes, and aspiration of the mass in the ventral portion of the orbit revealed a population of large lymphoblasts consistent with lymphoblastic lymphosarcoma. The owners elected to have the dog euthanized prior to its recovery from anesthesia on the basis of a preliminary diagnosis of lymphoblastic lymphosarcoma and extensive destruction of the nasal cavity. Additional computed tomographic contrast studies and tissue biopsy of the nasal mass were not performed, and necropsy was not permitted.

On the basis of the history of unilateral nasal discharge developing prior to observation of ocular abnormalities, the apparent invasiveness of the nasal tumor seen on the computed tomographic scan, and knowledge of the biologic behavior of nasal tumors (usually more aggressive and invasive than tumors of the orbit), it was hypothesized that the tumor originated in the nasal cavity and eroded through bone into the ventral portion of the orbit. It is possible, but not likely, that the nasal tumor was not lymphosarcoma.


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