Three-dimensional estimation of brain ventricular system volume in brachycephalic dogs with and without Chiari-like malformation and syringomyelia

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OBJECTIVES

To ascertain if dogs with Chiari-like malformation (CM) and syringomyelia (SM) are more likely to have dilation of the lateral, third and fourth ventricles and whether these measurements could enhance CMSM screening.

METHODS

Case control study that obtained quantitative volume measurements of lateral, third (including cavum velum interpositum and quadrigeminal cistern) and fourth

(including mesencephalic aqueduct) ventricles using Cavalieri's principle of stereology from T2-weighted sagittal brain magnetic resonance imaging (MRI).

The sample was composed of a Chihuahua group; five with CMSM and five normal and a mixed brachycephalic toy breed group; eight with CMSM and eight normal breed matched. Cavalier King Charles Spaniels (CKCS) were not included in the cohort.

Data analysis included descriptive statistics, Two-sample T-Tests and Mood Median Tests.

RESULTS

Stereology measurements showed no significant difference in the lateral, third or fourth ventricle volume between Chihuahuas and mixed brachycephalic breeds with and without CMSM.

STATEMENT (CONCLUSIONS)

A novel stereology based methodology has successfully quantified ventricular volumes and may be applicable for future studies in diseases that affect brain and ventricular volume.

Currently a recommendation cannot be made that the Kennel Club British Veterinary Association CMSM Health Scheme should include assessment of ventricular size.

Continued research with increased sample sizes to reduce biological variability and inclusion of CKCS would further confirm whether assessment of ventricular size could provide added benefit. Additional screening methods for CMSM are required to improve the health and welfare of predisposed breeds.

A glomus cell tumour on the head of a cat

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OBJECTIVES

Glomus cell tumours are rare in animals and there is only one previous case report in a cat. They are most commonly located on the distal extremities of the limbs.

Here we describe a skin neoplasm with histopathological and immunohistochemical characteristics of a glomus cell tumour in a unique location.

METHODS

A solitary mass, approximately 8 mm in diameter, was found on the left temporal region of a 7-year-old neutered female cat. A wedge biopsy taken prior to the referral was inconclusive: a carcinoma was considered more likely than a sarcoma based on histopathology.

After referral, additional staging, including a fine needle aspirate of the mandibular lymph node and inflated thoracic radiographs, was performed before fully excising the mass. Histopathology and immunohistochemistry were performed.

RESULTS

Clinical staging was unremarkable. On histopathology, the neoplasm comprised of aggregates of uniform round