



PATIENT PRESENTING CLINICAL SIGNS

Bobo Zhu 1 year old Shih tzu presented for being acutely painful and non-ambulatory 12 hours before presentation. No reported history of trauma. Reportedly screams sometimes for no reason or in response to loud noises.

SPECIES Abnormal PE/Chem/CBC/UA Results: Mentation: Mentally inappropriate, responds mildly to loud auditory and noxious stimuli; Cranial nerve exam: Head turn to the left, absent menace OD and inconsistently absent menace OS, absent bilateral nasocortical reflex, absent gag reflex, incomplete palpebral fissure closure OU. Gait/posture: Non-ambulatory with a left lateralizing severe tetraparesis and severe proprioceptive ataxia in all 4 limbs. Postural reactions:

BREED Proprioceptive positioning and hopping were absent on the left side, and normal in left pelvic limb (unable to assess left thoracic limb due to catheter). Spinal reflexes: weak patellar reflex and markedly decreased withdrawal in all limbs. Sensory/nociception: Moderate hyperesthesia elicited with palpation along the cranial cervical vertebral column. CBC, Biochemistry - Unremarkable

SEX COMPUTED TOMOGRAPHY OF THE CERVICAL SPINE & MAGNETIC RESONANCE IMAGING OF THE SKULL

MN

A pre- and post-contrast CT study of the cervical spine in a bone and soft tissue reconstruction & T2 weighted, FLAIR, diffusion weighted, SWI, T1 pre- and post-gadolinium sequence in multiple imaging planes are provided for review.

AGE

1 Year

COMPUTED TOMOGRAPHIC FINDINGS

INTERPRETED BY

Sebastian Schaub, DVM
Dr. med. vet. DipECVDI

The odontoid peg is absent, but a small, isolated ossicle within the ventral aspect of the spinal canal dorsal to the ventral arch of C1, measuring up to 1.5 mm in size. At the cranial aspect of the vertebral body of C2 a small osseous spur is protruding mildly into the vertebral canal. Significant dorsal subluxation of the vertebral body of C2 is present with marked step formation between C1/C2. Dorsal kinking of the dural tube level C1/C2 is seen and the dural tube is distorted.

HOSPITAL NAME

Animal Health
Partners

Moderate atlanto-occipital overlapping is noted.

MAGNETIC RESONANCE IMAGING FINDINGS

REFERRING VET

Dr. Marchal

The lateral ventricles and third ventricle are moderately dilated. The volume of the brain parenchyma is moderately decreased – with loss of volume of the white matter. There is a normal signal intensity of the brain parenchyma. The corpus callosum is bulging dorsally and the fornix is displaced ventrally and presents a straightened conformation. The interthalamic adhesion presents a mild ovoid shape. No pathological distribution of the contrast media is appreciated. There is no evidence of abnormal meningeal enhancement.

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The rostral contour of the cerebellum presents a mild concave depression. The caudal contour of the cerebellum is depressed by the dorsal arch of C1. The cerebellum is protruding into the vertebral canal of C1.

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The spinal cord level C1/C2 is displaced dorsally and presents a focal susceptibility artefact in the left dorsal aspect of the spinal cord. There is a diffuse mild T2 hyperintensity visible level with C1/C2. Post contrast administration intramedullary mild contrast enhancement level C1/C2 is appreciated.



PATIENT The tympanic bullae are aerated, and the bony lining is thin.

Bobo Zhu The tonsils are prominent.

IMAGING DIAGNOSIS

SPECIES

Canine

BREED

Shih Tzu

- Dysplasia of the odontoid peg with secondary atlantoaxial instability
- Secondary segmental myelopathy C1/C2 with intramedullary hemorrhage, edema and mild contrast enhancement
- Atlantooccipital overlapping (basilar-invagination) with cerebellar herniation
- Hydrocephalus internus and supracollicular fluid accumulation
- Persistent ossiculum terminale
- Suspect reactive hyperplasia of the tonsils – due to the age of the patient.

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

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MN

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The main finding is the atlantoaxial instability due to dysplasia of the odontoid peg with compression of the spinal cord. Given the intramedullary hemorrhage and mild contrast enhancement in combination with the acute onset of clinical signs, traumatic insult with sudden impingement of the spinal cord is considered very likely here. Surgical reduction and stabilization of the atlantoaxial instability is the therapy of choice (e.g. fixateur interne) – the suspect preceding acute impact on spinal cord with hemorrhage is likely prolonging post-operative rehabilitation phase.

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There is evidence of accompanying congenital malformation of the atlanto-occipital junction and hydrocephalus internus. At this point, the clinical relevance of these findings is unclear.

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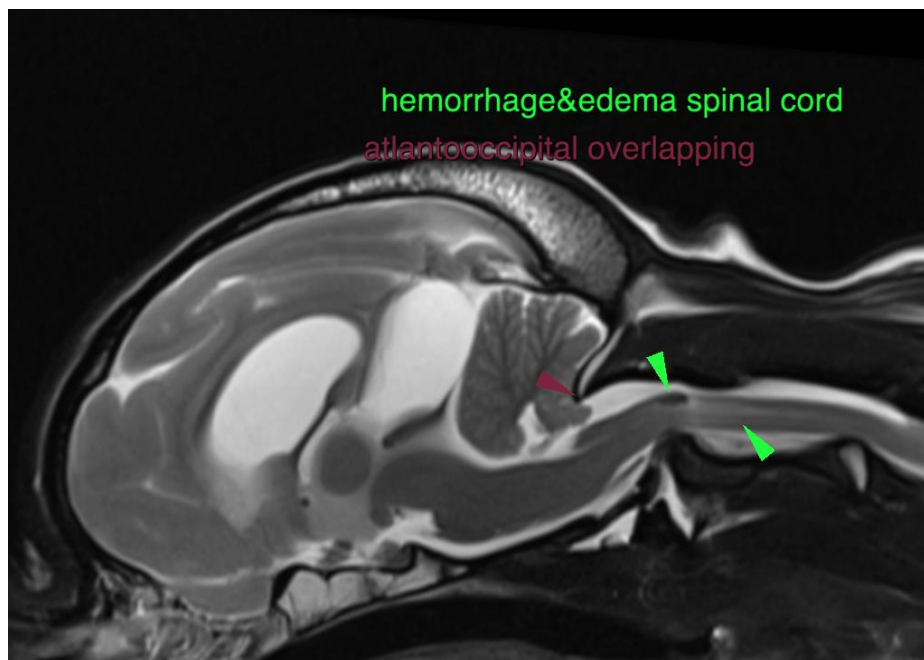
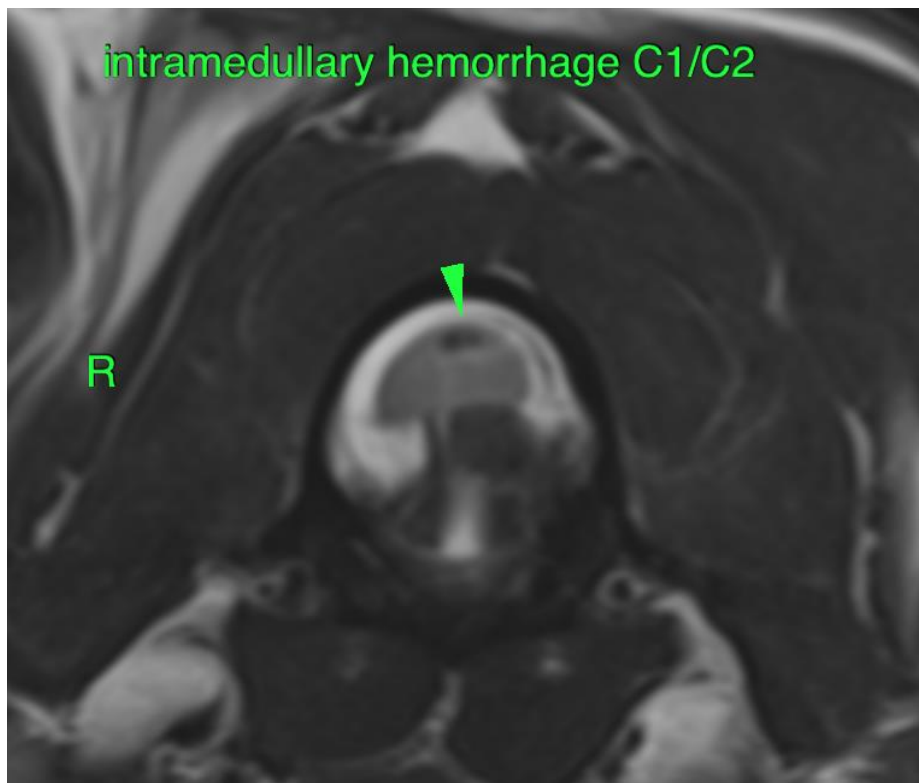
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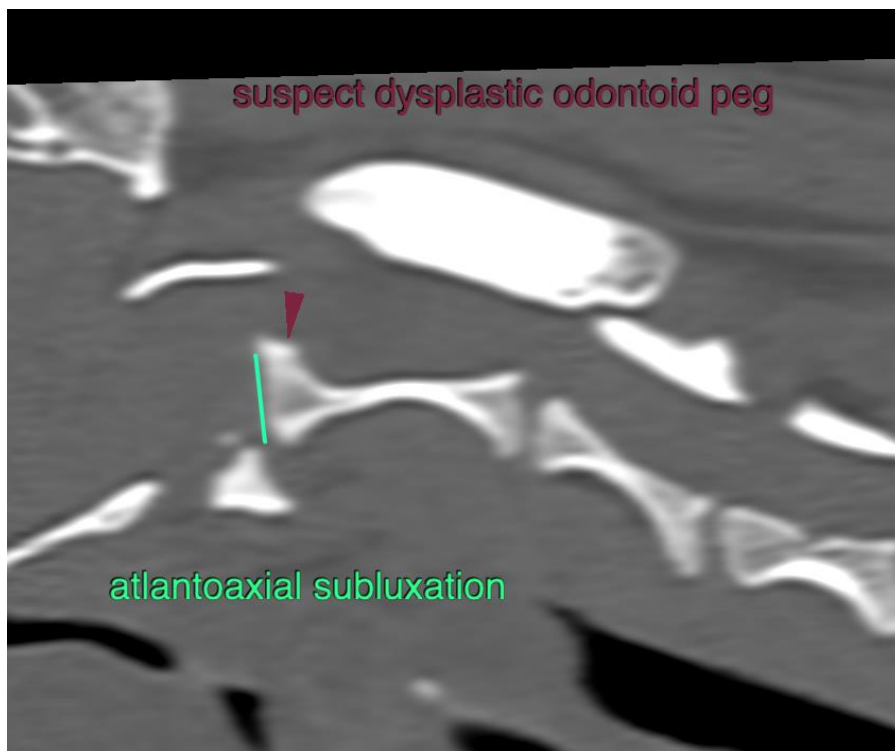
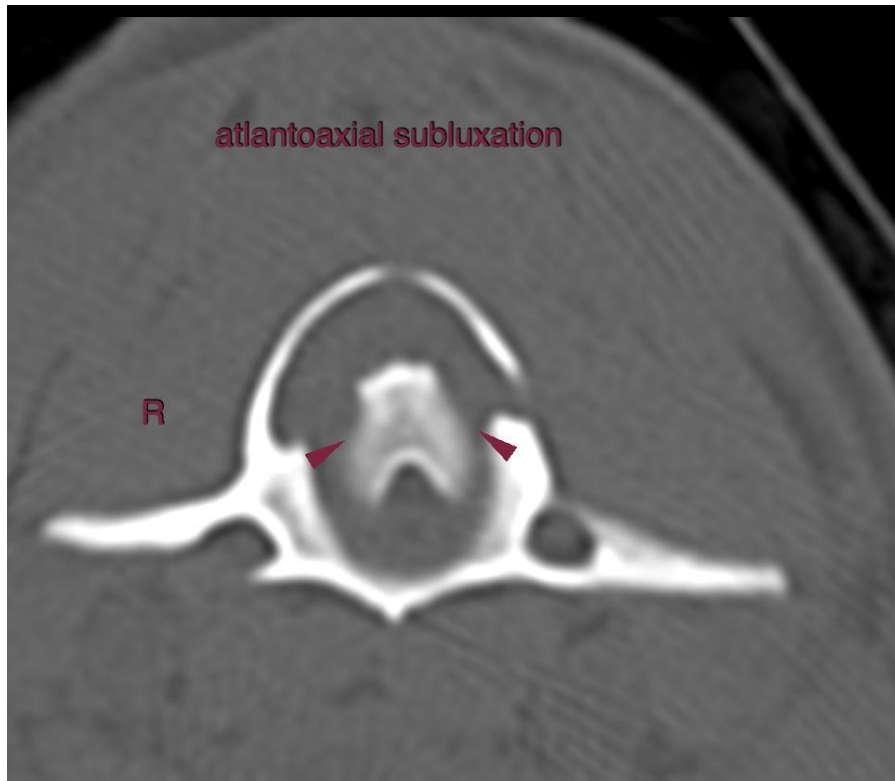
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The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

BREED

Shih Tzu

Thank you for this referral. If the clinical or image interpretation does not parallel your findings or if I can be of any further assistance please contact me.

Sebastian Schaub, Sebastian Schaub, DVM, Dr. med. vet. DipECVDI
sebast.schaub@gmail.com

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