ProtonVet
VETERINARY RADIOLOGY

MAGNETIC RESONANCE IMAGING REPORT

REFERRAL CENTER

Referring hospital: [redacted]
Referring veterinary:
E-mail: [redacted]
Tel: [redacted]

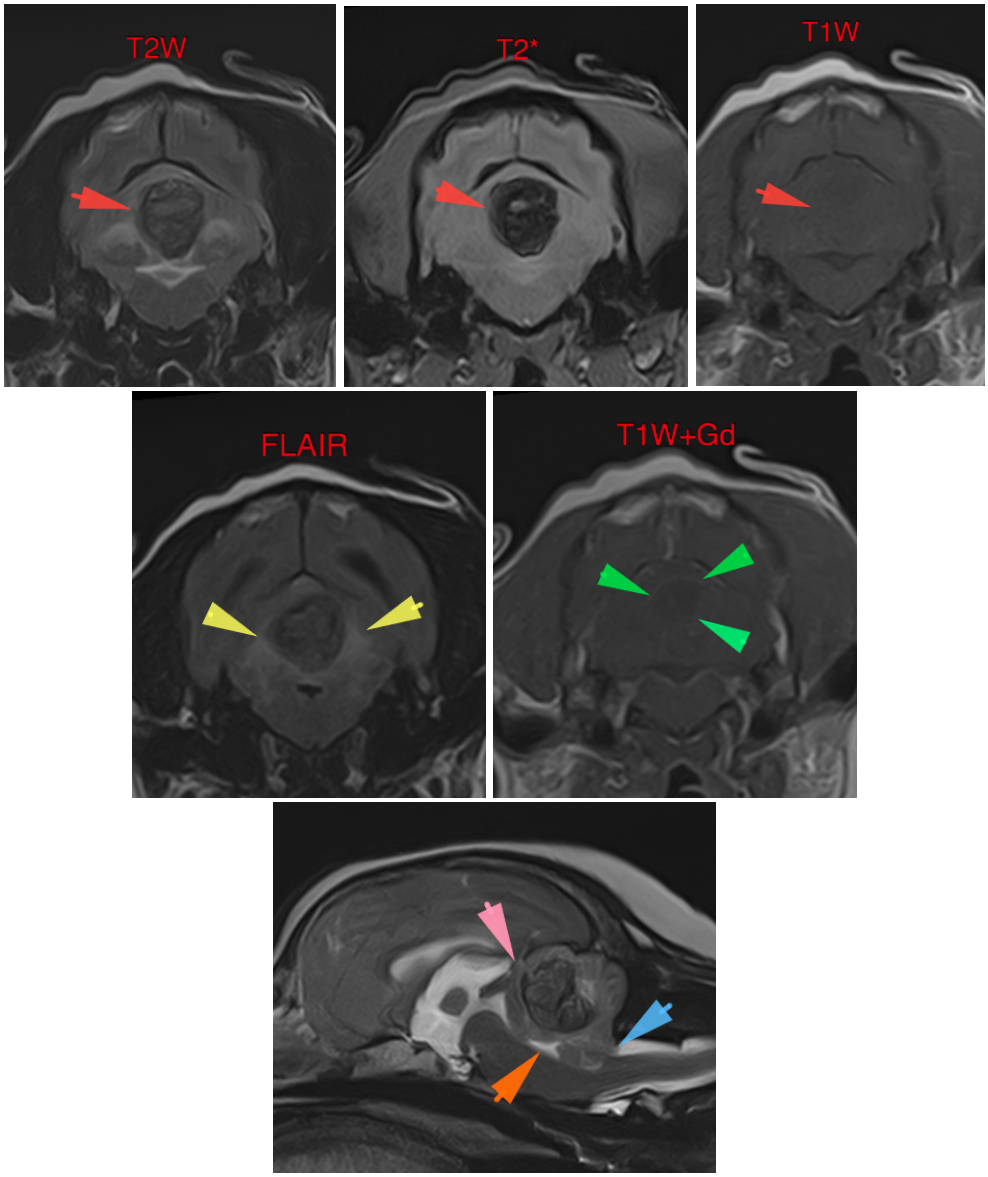
PATIENT INFORMATION

Owner: [redacted] Patient's name: [redacted]
Species: Canine Breed: Maltese Sex: Female Age: 15y 8m
History: 15 days ago, has an undefined attack. 0,7 mg/kg of cortisone administered, with improvement up until 3 days ago when she starts to worsen again: circling to the left, non-ambulatory tetraparesis and slight left head tilt.
Ddx: neoplasia, vascular or inflammatory.
Region: head

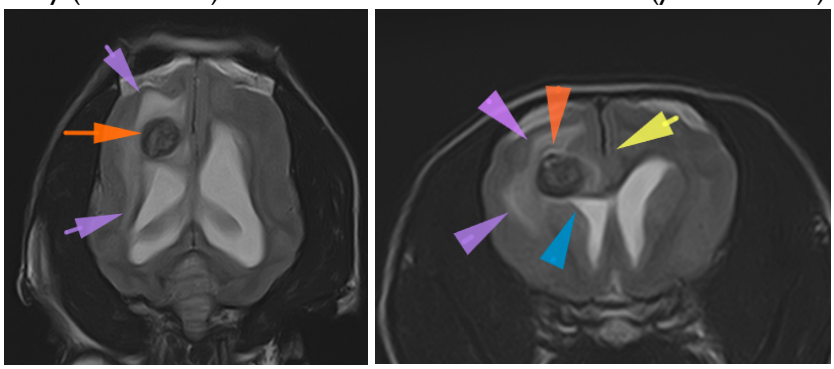
REPORT

Technical comments: MRI of the head. Sequencies: sag (T2W); tra (T2W, FLAIR, T2*, T1W, T1W+Gd, DWI, ADCmap); cor (T2W, T1W+Gd).

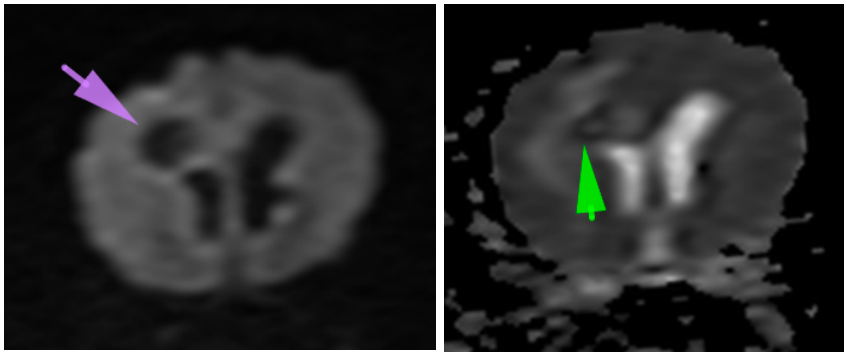
Description:
There are multiple, variable in size, intra-axial lesions, all showing similar characteristics. These lesions have a round shape, irregular and well-defined margins, mixed intensity in T2W, signal void in T2*, hypo/isointense in T1W, and with a very mild peripheral enhancement in the post-contrast sequence (green arrows).
The biggest one (1,3 cm RCd x 1,2 cm DV x 1,1 cm LM) is located in the rostral portion of the cerebellum (red arrows) and, in addition to the previously described characteristics, this lesion is surrounded by a diffuse hyperintense area in T2W and FLAIR, consistent with perilesional oedema. This causes a marked mass effect, displacing the rostral portion of the cerebellum rostrally (pink arrow) and the caudal portion of the cerebellum slightly caudally, that protrudes minimally through the foramen magnum (blue arrow) (without herniation). The 4th ventricle is also ventrally displaced and slightly compressed (orange arrow).



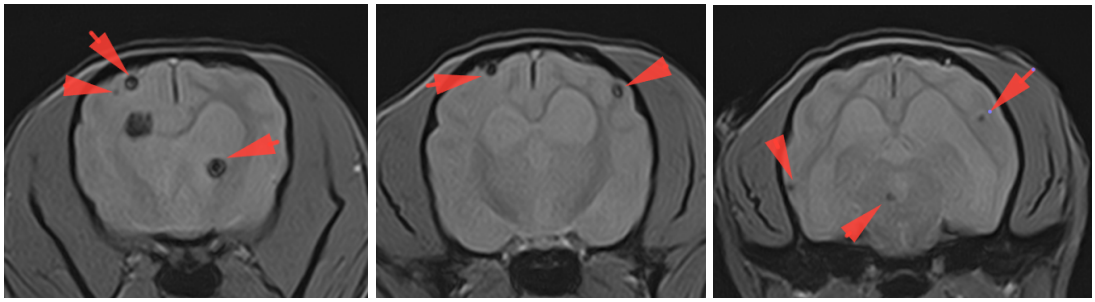
There is another lesion, of considerable size (7,2 mm RCd x 5,9 mm DV x 7 mm LM), located in the right frontoparietal region, dorsal to the rostral portion of the right lateral ventricle (orange arrow), surrounded by a large area of perilesional oedema that extends along the internal capsule (purple arrows). This causes a mild mass effect, displacing the right lateral ventricle ventrally (blue arrow) and a midline shift towards the left (yellow arrow).



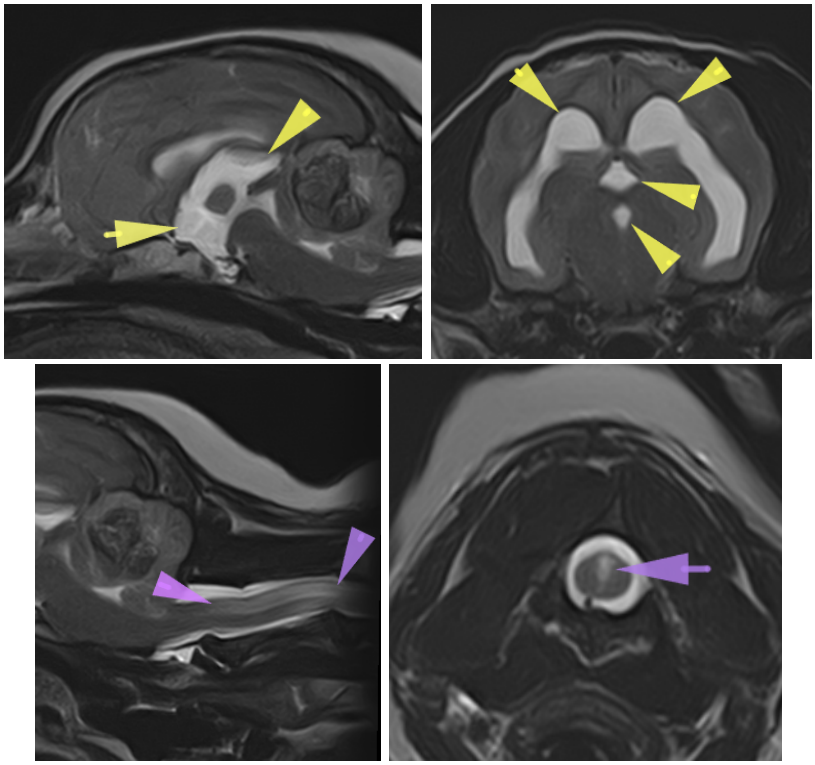
Both of the lesions previously described have a hypointense core and a hyperintense halo in DWI (purple arrow), with a hyperintense core and hypointense periphery in ADCmap (green arrow) that, taking into account all the above, are most likely consistent with chronic hemorrhages.



Moreover, there are other smaller (1 to 4 mm) similar lesions distributed along both cerebral hemispheres (red arrows).



The ventricular system is moderately and symmetrically distended, showing a normal intensity (yellow arrows). In the portion of the cervical spinal cord included, there is a very mild distention of the central canal (syringohydromyelia) (purple arrows).



Conclusions:

- Multiple intraaxial lesions, variable in size (the biggest ones are located in the cerebellum and right frontoparietal region; smaller ones affect both cerebral hemispheres and brain stem). The lesions, taking into account their characteristics, are consistent with haemorrhagic lesions (chronic haemorrhages, most likely, based on the characteristics). The biggest ones also show an associated vasogenic perilesional oedema. The smaller lesions are, most likely, consistent with microbleedings. Differentials include: neoplastic disease (metastasis: hemangiosarcoma or others) or multiple haemorrhagic cerebrovascular infarcts secondary to coagulopathy (secondary to parasitic disease: *Angiostrongilus*, for example, or other causes of coagulopathies). The microbleedings are, most likely, part of the same process, but they could also be secondary to hypertension or amyloid angiopathy, less likely.
- Mild ventriculomegaly and obstructive syringohydromyelia, most likely secondary to the mass effect caused by the lesion in the cerebellum.
- Mild protrusion of the caudal portion of the cerebellum through the foramen magnum, without cerebellar herniation.

Comments: Correlation of the imaging findings with possible systemic alterations is recommended, in order to rule out coagulopathies or other potential causes (e.g. *Angiostrongilus*). In addition, evaluation of the thoracic and abdominal cavity is also recommended, in order to confirm or rule out the presence of neoplastic disease in other organs.

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