



# MRI Reporting Service

Report number: 121249

Report date: 6/6/2012

Referring Veterinarian:

Referring Practice:

---

Owner:	Patient:	Patient ID:	
Species: Canine	Breed: Dashhund	Sex: F	Age: 5

---

**Clinical History:** Owner reports, was out Sunday P.M. -came home to find acute onset of pelvic limb paresis. O does not perceive any significant deterioration by consult in PVC.

**Exam** -:hr140bpm-sinus rhythm, no pulse defs, rr 24 breaths/min, mms pink but sl tacky, crt 2 secs. NAD cvs and lung-field ausc, NAD adbo palp.

**Neuro** -:non ambulatory, hemiplegia, cut trunci cut off around 12/3. Pain on palpation over same region, absent conscious PC, deep pain neg, Thoracic limbs wnl. W/drawals reduced bilaterally, patella reflex intact L pelvic limb, but reduced on R. Lesion localisation T3-L3.

**Number of series (including scouts): 8**

**Study dated:** 4/6/2012

**Study received:** 6/6/2012

**Details of study and technical comments:**

MRI examination of the thoracolumbar spine

- Dorsal T2W, 3D FIESTA
- Sagittal T1W, T2W, GRE T2\* from T3 to L6
- Transverse T2W, T1W, GRE T2\* from mid T13 to mid L1.

All vertebral numbering is based on the position of the last set of ribs (assumed to be T13) and not on the sacrum (not included in the FOV). Patient positioning is good. The transverse and dorsal images are of excellent quality, and the sagittal images are also good, though slightly lower in resolution. Sat bands have been used over the abdomen for the sagittal plane series. There is marked ghosting/motion artefact over the spinal cord in the sagittal and transverse GRE images.

This is probably due to the phase encoding direction being dorsal to ventral rather than cranial to caudal (for the sagittal images) or right to left (for the transverse images), but I cannot completely verify this from the images. The GRE series are also low in SNR- I would suggest running these as 3mm slices next time or increasing the NEX/NSA (dependant on your time limitations etc.). We often would use 2.5 or 3mm transverse images in a dog of this size.

The 3D FIESTA series is excellent and this is probably the best series for your really thin slices.

### **Diagnostic interpretation:**

There are varying degrees of dehydration of all of the included disc nuclei from T3 to L6. The most marked changes are from T10/11 to T13/L1 where all of nuclei show degeneration and there is accompanying protrusion of the dorsal annulus at each site.

A large disc extrusion is present throughout T13. The origin of the extruded material is difficult to elucidate and may either be from T12/13 or from T13/L1- typically the material moves cranially hence T13/L1 would be more likely, but in this case there is more extruded material at the level of T12/13. The specific changes are as follows:

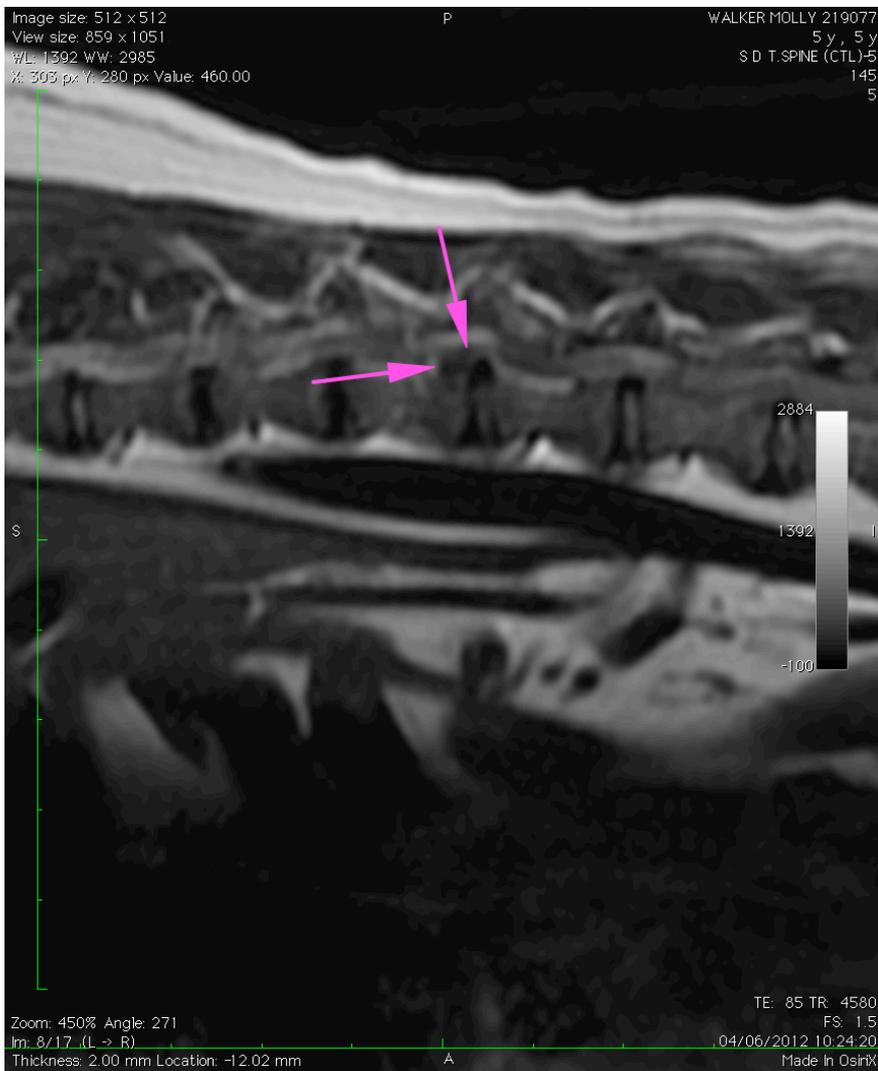
T12/13: Focal ventral midline accumulation of low signal extruded material resulting in 10-20% cord compression. No loss of dorsal epidural fat signal. Small additional focus of material on the left ventrolateral aspect of the cord just cranial to the disc space (seen best on the parasagittal images- Fig. 1).

Throughout T13: Large focus of right sided extruded disc material in the epidural space, filling the entire height of the vertebral canal and resulting in 50% cord compression. The epidural fat/subarachnoid CSF signal is obliterated completely throughout T13. The material is slightly hypointense to the cord on both T1W and T2W series.

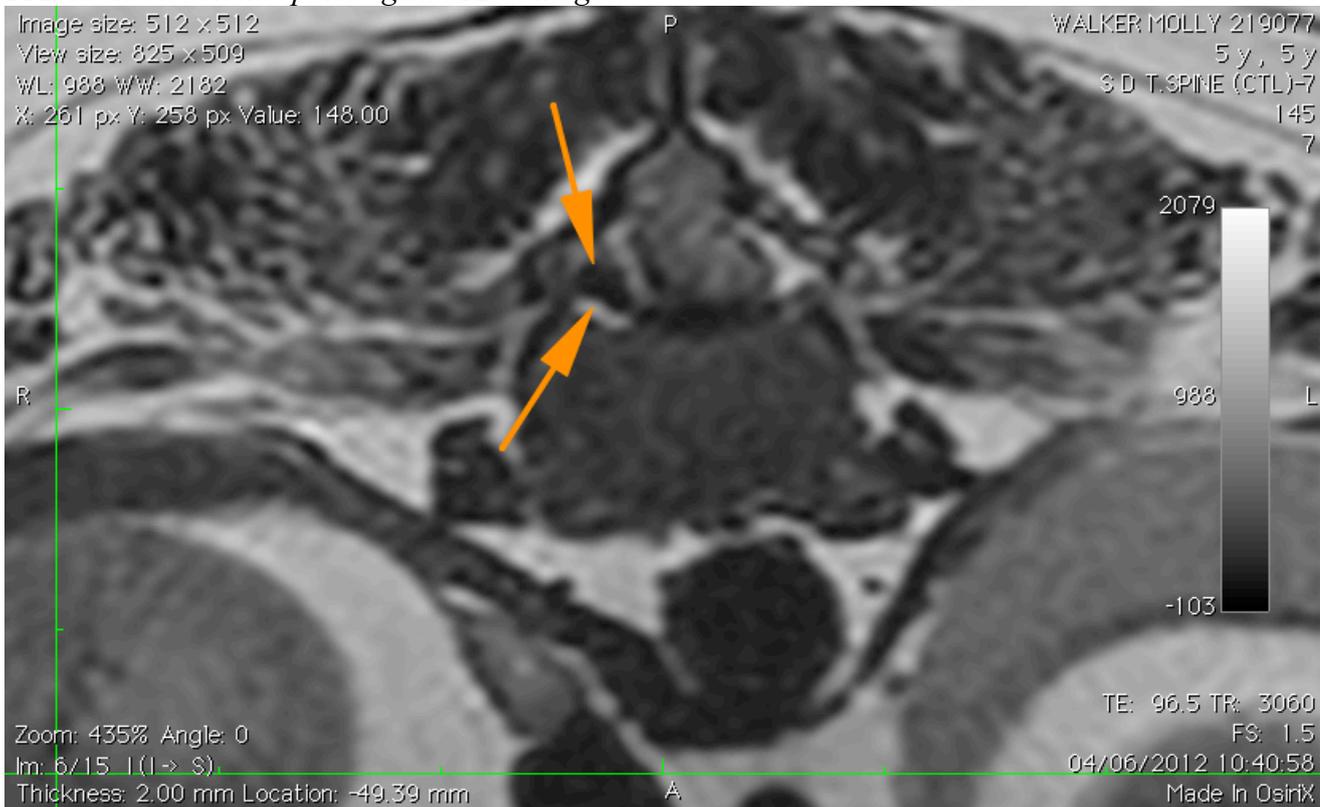
T13/L1: Mild focal ventral midline disc extrusion resulting in flattening of the ventral aspect of the cord and mild (10-20%) cord compression. A small amount of extruded material approaches, but does not enter the cranial aspect of the right T13/L1 intervertebral foramen (Fig 2). The latter appears to have originated from T13/L1 rather than the more cranial disc space.

There is a diffuse increase in T2W cord signal from cranial L1 to caudal L2, the changes appear to involve mainly gray matter though there is some more lateral extension. This is best seen on the dorsal images. Mild swelling accompanies this change and there is also mild central canal dilation cranial and caudal to the T12-L2 region. There is no overt evidence of decreased signal within the cord to indicate haemorrhage on the GRE series (though assessment is somewhat limited by the artefacts present.)

The included portion of the thorax and abdomen is normal.



*Figure 1: There is a small additional focus of material on the left ventrolateral aspect of the cord within caudal T12- seen best on this parasagittal T2W image.*



*Figure 2: A small amount of extruded material approaches the cranial aspect of the right IVF at T13/L1.*

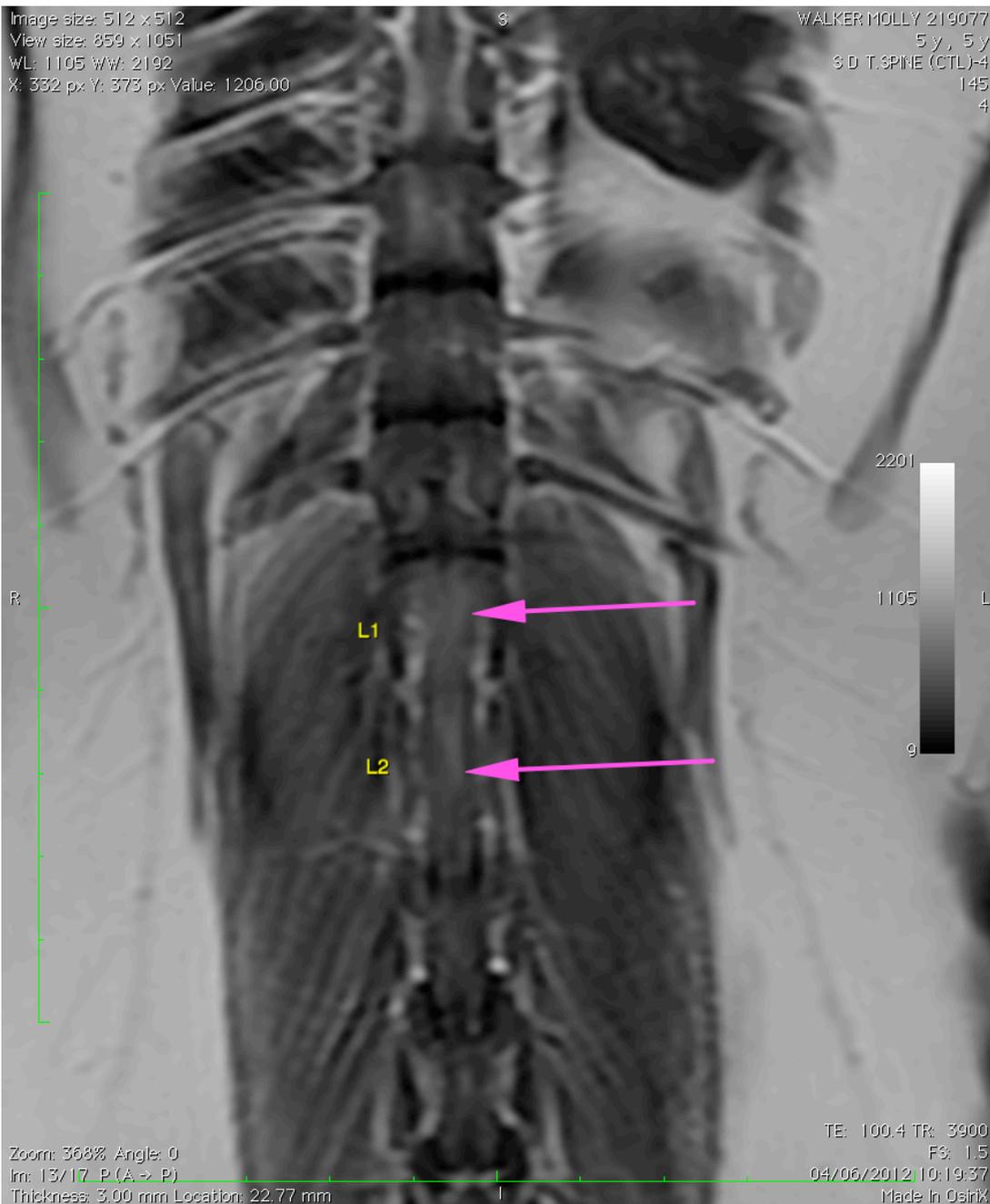


Figure 3: The region of increased cord signal is shown between the two pink arrows.

### Conclusions:

1. **Disc extrusion and severe cord compression throughout T13, right sided. The origin of the material is thought to be T12/13, though it is difficult to be certain.**
2. Tiny left ventrolateral focus of disc material at caudal T12.
3. Disc extrusion, mild cord compression at T13/L1 and focus of material approaching the right intervertebral foramen at T13/L1. The lateralized material may be resulting in compression of the right sided T13/L1 nerve root.
4. Increased T2W cord signal and mild swelling from L1- L2. This is concerning for myelomalacia or oedema.

**Additional comments:**

The appearance of the cord within L1- L2 is concerning for spinal cord oedema or malacia. There is no evidence of decreased signal within the cord on the GRE images to suggest haemorrhagic malacia (Platt et al 2006, Veterinary Radiology and Ultrasound). Given the severe presenting signs in this patient and the MRI changes described here, unfortunately the prognosis is guarded. A repeat MRI may be helpful in assessing whether the cord changes are improving or progressing and worsening with time.

**Reporting radiologist:**

RCVS and European Specialist in Veterinary Diagnostic Imaging

If you have any queries regarding this report then please contact the reporting radiologist on the above email address or contact [info@vetctspecialists.com](mailto:info@vetctspecialists.com)