

**ACVR CR/MRI society – Case of the Month
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This month's case was provided by:

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- Signalment:
9-year-old male castrated Terrier

- History:
The patient presented with an ambulatory hindlimb paraparesis, worse on the left. Pain with palpation was noted between L3-L7. A rescue group brought the patient in after he was found on a road and therefore a time-line for the presenting complaint was not established.

- Study performed:
 - MRI of the thoracolumbar spine.
 - HASTE (single-shot turbo spin echo) sagittal
 - T2W sagittal and transverse
 - T2W FS dorsal
 - STIR sagittal
 - T2W FLAIR transverse
 - T1W (pre-contrast) sagittal and transverse, T1W (post-contrast) transverse

- Findings:
 - Centered at the left articular process joint of L2-L3 and coursing ventrally into the vertebral canal, there is a well demarcated, homogenous T1W hypointense/T2W hyperintense structure. The mass effect caused by this structure is causing marked compression and rightward deviation of the spinal cord.
 - The structure completely suppresses on the FLAIR sequence and is markedly hyperintense on the HASTE sequence, indicating a fluid composition. In the T1W post-contrast sequence, an inconsistent peripheral enhancement is present, most noticeable at the caudal extent of the structure.
 - Also located at L2-L3 intervertebral disc space, there is a mild, centrally located disc protrusion and partial desiccation of the *in situ* disc.

- Conclusions:
 1. Extra-dural, cyst-like mass causing marked spinal cord compression, L2-L3. The most likely differential is a synovial cyst based on the relatively mild, peripheral contrast enhancement, predominant fluid composition and lack of osteolysis. Neoplasia (synovial cell sarcoma, histiocytic sarcoma, synovial myxoma/myxosarcoma, fibrosarcoma, and chondrosarcoma) was considered unlikely.
 2. Intervertebral disc protrusion at L2-L3, considered incidental.

- Outcome/ Follow-up:

Euthanasia was elected based on the imaging findings and financial constraints. A necropsy and histopathology were performed.

A synovial myxoma was diagnosed.

- Comments:

Synovial myxoma is an uncommon, benign tumor in dogs. Based on a report of 39 cases, large breed, middle aged dogs are most frequently affected (1). The stifle is the most common site of occurrence, followed by the digits, tarsus, elbow and carpus (1).

Reports of this disease involving the vertebral articular process joints are rare (1–4). MRI findings in these cases have all described a T2W hyperintense/T1W hypointense lobulated mass centered at an articular process joint, either in the cervical or lumbar spine. Extension into the vertebral canal was noted in all cases, as presumably MRI was indicated secondary to the presence of neurologic symptoms. Contrast enhancement ranged from mild to strong and homogenous, whereas in the present case, an inconsistent peripheral contrast enhancement was seen. No osteolysis was noted in any of the described imaging reports involving the vertebral articular process joints. However, bony invasion at other anatomical sites has previously been reported with this disease (1).

- References:
 1. Craig LE, Krimer PM, Cooley AJ. Canine synovial myxoma: 39 cases. *Vet Pathol.* 2010;
 2. Neary CP, Bush WW, Tiches DM, Durham AC, Gavin PR. Synovial myxoma in the vertebral column of a dog: MRI description and surgical removal. *J Am Anim Hosp Assoc.* 2014;
 3. Blair WH, Levine JM, Kerwin SC, Spaulding KA, Young BD, Pool RR. Imaging diagnosis-synovial myxoma of lumbar vertebrae articular process joint. *Vet Radiol Ultrasound.* 2011;
 4. Arendse A. Case Report: Vertebral Synovial Myxoma [Internet]. Available from: <https://hopevs.com/blog/case-report-vertebral-synovial-myxoma/>