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Vet Record Case Reports

Presumptive coccygeal discospondylitis in a cat

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Keywords:	feline, diskospondylitis, caudal vertebral, tail discospondylitis
Topics:	Neurology, Diagnostics, Infectious diseases
Abstract:	



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TITLE OF CASE Do not include the words "Case report"

Presumptive coccygeal discospondylitis in a cat

DESCRIPTION Up to 250 words summarising the importance of the image(s)

An eight-year-old male neutered indoor/outdoor domestic short-haired cat was presented with a one-month-onset of chronic progressive low tail carriage and tail pain. Radiographs of the tail taken by the referring veterinarian (RV) revealed questionably narrowed intervertebral disc spaces from Cd2 to Cd7. Conservative treatment with meloxicam and gabapentin was started without clinical improvement.

On admission, general physical and orthopaedic examinations revealed pain on palpation of the tail base; but were otherwise unremarkable. Neurological examination revealed tail paresis with proximal movement and marked pain on palpation of the proximal third of the tail. Neuroanatomical localization was compatible with sacral and caudal spinal cord segments, spinal nerve roots or spinal nerves. Haematology was unremarkable, whilst serum biochemistry revealed mild total hyperproteinaemia (88 g/L, reference intervals: 60 - 85 g/L) with moderate hyperglobulinaemia (60 g/L, reference intervals: 27 - 45 g/L), suggestive of inflammation. Serology (ELISA) for FIV and FeLV was negative. Radiography of the lower vertebral column and tail revealed progression of the lesions previously noted by the RV, affecting Cd2-3, Cd3-4 and Cd4-5 intervertebral disc spaces (Figure 1). These changes were suggestive of discospondylitis, although other differential diagnoses such as neoplasia, although less likely to unlikely, could not be completely excluded. Radiographically-guided fine needle aspirates of Cd2 to Cd4 intervertebral spaces were performed under general anaesthesia. Cytology revealed damaged neutrophils and lymphoid cells, with presence of

extracellular bacterial rods, potentially as a result of environmental contamination; these results were considered non-diagnostic. Bacterial culture from the intervertebral space aspirates and urine were negative. An empirical six-week course of antibiotics (clindamycin 12.5 mg/kg PO q24h, cefalexin 20mg/kg PO q12h) were prescribed based on the suspicion of discospondylitis; and gabapentin and meloxicam were continued for three weeks. Strict cage rest was advised. The cat showed marked improvement within three weeks of initiating treatment, with the tail returning to its normal position and function. Clinical recheck and follow up imaging was not performed due to financial constraints, although the owner confirmed clinical improvement via video communication. Based on the clinical response to antibiotic treatment, a presumptive diagnosis of discospondylitis was made. Discospondylitis is a rare disease of cats, commonly seen in male cats, mainly at the lumbar spine.¹ Coccygeal discospondylitis has not been reported in cats; it has been described in horses,² whilst only traumatic coccygeal vertebral osteomyelitis has been reported in a cat.³ Fluoroscopically guided percutaneous disc aspiration has been described in dogs with discospondylitis and it appeared to be a valuable technique to obtain culture and sensitivity data in 75% of canine cases with radiographic signs of discospondylitis.⁴ To the authors' knowledge, this is the first report of presumptive coccygeal discospondylitis in a cat. LEARNING POINTS/TAKE HOME MESSAGE 2 to 3 bullet points - this is a required field Coccygeal discospondylitis is uncommon and it should be considered in the differential diagnoses of tail paresis/paralysis. Plain radiography should be considered as an initial diagnostic investigation in these • cases. Radiographically guided percutaneous disc aspiration should be considered in low budget cases of presumptive coccygeal discospondylitis, especially in cats with negative urine and blood culture. **REFERENCES** Vancouver style (max 3) 1. Gomes SA, Behr S, Garosi LS, et al. Imaging features of discospondylitis in cats. J Fel Med Surg 2020; 22: 631-640. 2. Oosterlinck M, Pille F, Gasthuys F, et al. Infectious coccygeal discospondylitis in an adult trotter horse. Vlaams Diergeneeskundig Tijdschrift 2008; 77: 264-268. 3. Katica M, Stanic Z, Shafie M, et al. An uncommon case: feline tail post-traumatic osteomyelitis. Journal of Istanbul Veterinary Sciences 2018; 2: 72-77. 4. Fischer A, Mahaffey MB, Oliver JE. Fluoroscopically guided percutaneous disc aspiration in 10 dogs with dyskospondylitis. J Vet Intern Med 1997; 11: 284-287. FIGURE/VIDEO CAPTIONS figures should NOT be embedded in this document Figure 1 A: Lateral plain radiograph of the sacrum to the eighth coccygeal vertebra reveal (i) narrowed intervertebral spaces and irregular endplates at the articulations of Cd2-3, Cd3-4, Cd5-6, Cd6-7 (green arrowheads) - irregular endplates are accompanied by mild osteolytic changes especially noted at Cd5-6 and Cd6-7, (ii) soft tissue thickening, likely oedema, ventral to Cd4-5 (yellow arrows), (iii) a very slight step in the ventral vertebral canal at the articulation of S3-Cd1 and mild subluxation, and (iv) irregular surface and shape of the haemal arches of Cd3, Cd4, Cd5 (yellow arrowhead) most likely secondary to new bone formation. B: ventrodorsal radiograph demonstrating narrowed intervertebral spaces and irregular endplates (yellow arrowheads). C: magnified lateral radiograph showing endplate lysis at Cd6/7; D) Normal Cd7-8 intervertebral space. E: Ventrodorsal radiograph of normal coccygeal intervertebral spaces. F: Lateral radiograph of the coccygeal vertebra showing placement of a needle into the Cd2/3 intervertebral disc space under radiographic guidance for sampling of the suspected lesion. IMAGE QUIZ Optional (but highly encouraged) – please provide 1 or 2 sentences to describe one of the images in your article. The "Image quiz" will be published in association with your article if accepted – for a sample format visit http://casereports.bmj.com/site/image-quiz. Don't forget to indicate which image the quiz relates to

Figure 1C shows changes consistent with discospondylitis at the Cd6/7 space.

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MULTIPLE CHOICE QUESTION provide one multiple choice question based on the description above (may be "what's the likely diagnosis?")

What radiographic changes are highly suggestive of discospondylitis?

POSSIBLE ANSWERS TO MULTIPLE CHOICE QUESTION Max 6

- a) Lytic change affecting the middle of a vertebral body
- b) Lysis of the vertebral end-plates either side of a disc space
- c) Smooth, well-defined new bone formation ventral to the disc space
- d) Increased mineral opacity of the intervertebral disc
- e) Rounded well-marginated lytic lesions affecting multiple vertebral bodies and dorsal spinous processes

CORRECT ANSWER *With a brief explanation (the answer will also be linked to the published case)*

b) Lysis of the vertebral end-plates either side of a disc space. Infection of the intervertebral disc will commonly result in lysis of the adjacent vertebral end-plates (although this may not be seen very early in the disease process).

Discospondylitis usually affects both adjacent vertebrae, so a lytic change affecting the middle of a vertebral body would be less consistent with this disease (this change would be more consistent with spondylitis/osteomyelitis or vertebral neoplasia), and lytic lesions affecting the vertebral bodies and/or dorsal spinous process would not be indicative – in this case the major differentials would include disseminated neoplasia such as multiple myeloma or less likely multifocal osteomyelitis.

Smooth well-defined new bone ventral to the disc space (spondylosis) may be seen with more chronic (or previous) discospondylitis, but is commonly seen with other diseases (e.g. chronic disc disease) or as an incidental ageing change and would not on its own be suggestive of discospondylitis. Similarly mineralisation of the intervertebral disc itself would also be more consistent with chronic degenerative changes.

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Figure 1 A: Lateral plain radiograph of the sacrum to the eighth coccygeal vertebra reveal (i) narrowed intervertebral spaces and irregular endplates at the articulations of Cd2-3, Cd3-4, Cd5-6, Cd6-7 (green arrowheads) - irregular endplates are accompanied by mild osteolytic changes especially noted at Cd5-6 and Cd6-7, (ii) soft tissue thickening, likely oedema, ventral to Cd4-5 (yellow arrows), (iii) a very slight step in the ventral vertebral canal at the articulation of S3-Cd1 and mild subluxation, and (iv) irregular surface and shape of the haemal arches of Cd3, Cd4, Cd5 (yellow arrowhead) most likely secondary to new bone formation. B: ventrodorsal radiograph demonstrating narrowed intervertebral spaces and irregular endplates (yellow arrowheads). C: magnified lateral radiograph showing endplate lysis at Cd6/7; D) Normal Cd7-8 intervertebral space. E: Ventrodorsal radiograph of normal coccygeal intervertebral spaces. F: Lateral radiograph of the coccygeal vertebra showing placement of a needle into the Cd2/3 intervertebral disc space under radiographic guidance for sampling of the suspected lesion.

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Presumptive coccygeal discospondylitis in a cat

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з	results were considered non-diagnostic Bacterial culture from the intervertebral space
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14	horses, ² whilst only traumatic coccygeal vertebral osteomyelitis has been reported in a cat. ³
15	Fluoroscopically guided percutaneous disc aspiration has been described in dogs with
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29	1 Gomes SA Behr S Garosi I S et al Imaging features of discospondylitis in cats 1 Fel Med
30	$S_{\mu ra}$ 2020: 22: 631-640
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43	noted at Cd5-6 and Cd6-7, (ii) soft tissue thickening, likely oedema, opacity bulge-ventral to Cd4
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Figure 1C shows changes consistent with discospondylitis at the Cd6/7 space.

MULTIPLE CHOICE QUESTION provide one multiple choice question based on the description above (may be "what's the likely diagnosis?")

What radiographic changes are highly suggestive of discospondylitis? POSSIBLE ANSWERS TO MULTIPLE CHOICE QUESTION *Max* 6

- a) Lytic change affecting <u>the middle a single of a</u> vertebral body
- b) Lysis of the vertebral end-plates either side of a disc space
- c) Smooth, well-defined new bone formation ventral to the disc space
- d) Increased mineral opacity (mineralisation) of the intervertebral disc
- e) <u>Rounded well-marginated Lytic-lytic</u> lesions affecting multiple vertebral bodies and dorsal spinous processes

CORRECT ANSWER *With a brief explanation (the answer will also be linked to the published case)*

b) Lysis of the vertebral end-plates either side of a disc space. Infection of the intervertebral disc will commonly result in lysis of the adjacent vertebral end-plates (although this may not be seen very early in the disease process).

Discospondylitis usually affects both adjacent vertebrae, so <u>a</u> lytic change affecting <u>the middle of</u> a <u>single</u>-vertebral body would be less consistent with this disease (this change would be more consistent with spondylitis/osteomyelitis or vertebral neoplasia), and lytic lesions affecting the vertebral bodies and/or dorsal spinous process would <u>also be less typicalnot be indicative</u> – in this case the major differentials would include disseminated neoplasia such as multiple myeloma<u>or less</u> <u>likely multifocal osteomyelitis</u>.

Smooth well-defined new bone ventral to the disc space (spondylosis) may be seen with more chronic (or previous) discospondylitis, but is commonly seen with other diseases (e.g. chronic disc disease) or as an incidental ageing change and would not on its own be suggestive of discospondylitis. Similarly mineralisation of the intervertebral disc itself would also be more consistent with chronic degenerative changes.

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