

SPINAL INFECTION IN TWO RACING GREYHOUNDS

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Summary

One greyhound in race training had repeated episodes of fever and pain, which improved after antibiotic treatment. The greyhound developed hind limb paralysis following anaesthesia. At post mortem a grass seed awn was found in the fifth lumbar intervertebral disc. A second greyhound had repeated episodes of spinal pain. A lytic lesion was seen in L1. This greyhound made a complete recovery following six weeks of oral cephalixin.

Case Report 1

A two year old female greyhound in race training was presented for poor performance. A blood test showed leucocytosis ($11.2 \times 10^9/L$), neutrophilia ($7.5 \times 10^9/L$), lymphocytosis ($2.7 \times 10^9/L$) and mild anaemia ($6.8 \times 10^{12}/L$). The greyhound was treated with oral potentiated sulphonamides (Tribrissen®).

Four weeks later the greyhound was presented with back pain. Blood tests showed similar results as previous and oral chloramphenicol (ChlorB®) was prescribed. Three weeks later the greyhound had severe generalized back pain, fever ($40.5^\circ C$) and inappetance. A blood culture was taken but no growth was isolated. Intravenous fluids (Compound Sodium Lactate®) and intravenous antibiotics; enrofloxacin (Baytril®) and amoxicillin (Amoxil®); were started. The greyhound responded well - by the next day she was much less painful and eating. She was discharged with oral Baytril® for seven days.

Two weeks later the fever and back pain recurred. Spinal radiographs were taken. Mild narrowing of the L3-4 and L4-5 disc spaces was seen. The L4-5 disc space showed mild lysis of the vertebral end plates. The radiographic signs were not considered severe enough to explain the repeated bouts of fever. Chest taps were performed, which were negative. Urinalysis was normal. An exploratory laparotomy was performed to look for a focus of infection. Anaesthesia was induced with diazepam/ketamine and maintained with isoflurane in oxygen. Abdominal exploration was unremarkable except for an area of inflamed tissue under the left ureter. On recovery from anaesthetic both hind limbs were paralysed. Deep pain reflex was present. Intravenous antibiotics were continued (amoxicillin and enrofloxacin) and dexamethasone was given. Forty eight hours later the greyhound had not improved and was euthanased. At post mortem a granulomatous tract was found ventral to the lumbar vertebrae with a grass seed awn embedded in the fifth lumbar disc. The spinal cord at L5 was reddened and soft.

Case report 2

A fifteen month old male greyhound being reared at home presented with fever, lethargy and inappetance. Haematology showed leucocytosis ($17.3 \times 10^9/L$), neutrophilia ($14.7 \times 10^9/L$) and lymphocytosis ($2.3 \times 10^9/L$). Biochemistry showed mild elevation in amylase (1007, (330-850)). Pancreatitis was diagnosed and the greyhound was treated with intravenous fluids (compound sodium lactate) and intravenous antibiotics (amoxicillin). Improvement was rapid and the greyhound was discharged with amoxicillin/clavulanic acid (Clavulox®) 750mg BID by mouth and a low fat diet recommended.

Three weeks later the greyhound presented with clinical signs of spinal pain, lethargy, inappetance and weight loss. No fever was present. An IFAT test for neosporosis was performed. The result was a titre of <1:16, i.e. negative. Spinal radiographs were taken and no abnormalities were seen. In the absence of a definitive diagnosis but suspecting an infectious cause, the greyhound was treated with oral chloramphenicol and tribissen. The low fat diet was discontinued.

A further three weeks later the greyhound again presented with spinal pain. Symptoms were more severe; the hound had difficulty getting up and was reluctant to walk. Spinal radiographs were repeated and a lytic area was seen on L1. Discospondylitis was diagnosed based on clinical signs and radiographic findings and the greyhound was treated with cephalexin orally. The initial dose was 1200mg BID, reducing to 600mg BID after seven days. For the first ten days he was given 50mg deracoxib (Deramaxx®) orally once a day. Clinical improvement was apparent after five days. Cephalexin was continued for six weeks. After six weeks the greyhound was running well and with no spinal pain.

Discussion

By definition, discospondylitis is an infection of the vertebral endplates and intervertebral discs. It is more common in older, large breed male dogs. The infection is spread via the bloodstream from potential sources such as the bladder, prostate, uterus, respiratory tract or open wound. Foreign bodies, e.g. grass seeds, can cause discospondylitis but are usually associated with draining tracts. The most common clinical presentation of discospondylitis is spinal pain, which can often be localized to a specific area. Systemic signs of fever, anorexia and lethargy may be seen in about a third of cases, and neurological signs in about half. Radiographic changes are diagnostic; end plate lysis, collapse of the disc space and proliferative bony change adjacent to the affected disc are seen. The infection may be confined to the vertebral body only. Unfortunately, radiographic changes may not be seen until some weeks after clinical signs have started. MRI scans may show tissue changes much earlier in the disease course.

Treatment of discospondylitis is by long term antibiotic administration. Treatment may be required for up to a year. Ideally, urine or blood cultures are performed to identify the causative organism and its antibiotic sensitivity. If these cultures are negative then material from the affected disc can be aspirated under fluoroscopic guidance. The most common organisms isolated are *Staphylococcus*, *Streptococcus*, *E.coli*, *Brucella* (exotic to Australia) and *Actinomyces* (if associated with grass seeds). Empirical treatment choices include penicillins, cephalosporins and possibly fluoroquinolones.

In hindsight, the diagnosis of Case 1 was obvious. The spinal pain was a clear indicator to the origin of the infection, and should have prompted spinal radiographs earlier. However, radiographs taken early on, as occurred in the second case, may not have shown any changes. The complete and rapid resolution of the pain when antibiotics were given, while in hindsight indicates spinal infection, at the time suggested that the spinal pain was secondary. The radiographic changes were mild, and were not considered significant until the dog developed paralysis. By then the spinal cord itself was damaged and the situation was no longer likely to resolve just with antibiotic therapy. However, it is doubtful this case would have resolved merely with antibiotics, given the presence of a foreign body. Spinal surgery to remove the grass seed would have been required for a successful outcome.

In case 2, the lessons learnt from case 1 were applied. Spinal radiographs were taken when spinal pain was evident. The radiographs were repeated when the spinal pain

persisted and an appropriately long course of antibiotics was given. So far, this case has had a successful outcome.

References

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