Steroid-responsive meningitis-arteritis

- Prevalence of Proteinuria in Dogs With Immune-Mediated Disease
- Clinical Features, MRI Findings, Treatment, and Outcomes in Dogs with Haemorrhagic Myelopathy Secondary to Steroid-Responsive Meningitis-Arteritis: Nine Cases (2017-2024)
- Lack of serologic evidence of orthoflavivirus infection in dogs with meningoencephalitis of unknown origin and steroid-responsive meningitis-arteritis in the Netherlands
- Association between steroid-responsive meningitis-arteritis and gastrointestinal signs in dogs: a case-control study
- Central nervous system vascular complications associated with the acute form of steroid-responsive meningitis-arteritis
- Epistaxis and Intradural-Extramedullary Haemorrhage in a Dog With Steroid Responsive Meningitis-Arteritis
- Spinal shock in a dog with steroid-responsive meningitis-arteritis extending to the brainstem
- Signalment, clinical characteristics and outcomes of an Australian population of dogs with steroid responsive meningitis-arteritis (SRMA) - 124 cases (2013-2023)

Steroid-responsive meningitis-arteritis (SRMA) is an immune-mediated inflammatory disease that primarily affects dogs, although it's rare in humans. It involves inflammation of the **meninges** (the membranes covering the brain and spinal cord) and the **arteries**, particularly in the spinal cord and brain. SRMA is characterized by a strong response to corticosteroid treatment, which helps reduce the inflammation.

Key Features of SRMA: 1. **Cause**: The exact cause is unknown, but it is believed to be immune-mediated, where the body’s immune system mistakenly attacks its own tissues.

2. **Symptoms**:

1. **Fever**
2. **Neck pain** and stiffness (due to meningitis)
3. **Lethargy**
4. **Loss of appetite**
5. Neurological signs (in severe cases)

3. **Diagnosis**:

1. **Cerebrospinal Fluid (CSF) Analysis**: In SRMA, the CSF often shows high levels of white blood cells (pleocytosis) and increased protein levels, indicating inflammation.
2. **MRI or CT Scans**: These may be used to rule out other causes of meningitis or central nervous system disease.
3. **Blood Tests**: Elevated white blood cell counts and inflammatory markers (like C-reactive protein) may be present.

4. **Treatment**:

1. **Corticosteroids**: SRMA responds well to corticosteroids, such as prednisone, which rapidly reduce inflammation and improve symptoms.
2. **Long-term Therapy**: In many cases, dogs require long-term steroid therapy with gradual tapering of the dose to avoid relapse. Some may need additional immunosuppressive drugs if steroids alone are not effective.

5. **Prognosis**:

1. **Good Response**: Most dogs respond well to steroid treatment, but relapses can occur if the therapy is discontinued too quickly.
2. **Chronic Disease**: In some cases, SRMA may become a chronic, recurring condition requiring long-term management.

In veterinary medicine, SRMA is most commonly seen in young, large-breed dogs, such as Beagles, Boxers, and Bernese Mountain Dogs. In humans, conditions with similar immune-mediated responses to steroids, like vasculitis or autoimmune meningitis, may present similarly but are diagnosed and treated with specific clinical protocols.

Jones et al. describe the MRI findings in a UK referral population of dogs with steroid-responsive meningitis-arteritis and to determine if they were associated with any specific clinical features or outcomes.

They performed a multi-centre retrospective case series of dogs diagnosed with steroid-responsive meningitis-arteritis in the UK that underwent MRI. Blinded consensus review of the MRI studies was performed and the findings described. The presence or absence of specific MRI abnormalities were analysed for significant associations with presenting signs, results of investigations or case outcomes.

Fifty-three dogs were included. The most common MRI findings were paravertebral muscle changes (30/53; 56.6%), meningeal contrast enhancement (13/41; 31.7%) and spinal cord parenchymal T2-W hyperintensity (15/53; 28.3%). Haemorrhage was observed in five of 53 (9.4%) cases - three intradural-extramedullary, one intramedullary and one extradural. Following binary logistic regressions, T2-W spinal cord parenchymal hyperintensity had a significant positive association with paresis/paralysis (odds ratio 14.86, 95% confidence interval 1.42 to 154.99) as did haemorrhage (odds ratio 16.12, confidence interval 2.05 to 126.73). Fifty-two (98.1%) dogs survived to discharge. Relapse occurred in nine of 29 (31.0%) dogs with sufficient follow-up, and no MRI finding had a significant relationship with its occurrence.

Clinical significance: Magnetic resonance imaging findings for steroid-responsive meningitis-arteritis can be severe and extensive, as can the clinical presentation. The presence of paresis/paralysis should raise concern for haemorrhage, though most dogs still have a good prognosis [1)]

1)
Jones BA, Agthe P, Scarpante E, Crawford A, Black V, Espadas I, Formoso S, Fraser AR. Magnetic resonance imaging findings in dogs with steroid-responsive meningitis-arteritis in the UK and their clinical significance: 53 cases (2013-2021). J Small Anim Pract. 2024 Sep 4. doi: 10.1111/jsap.13775. Epub ahead of print. PMID: 39228252.