Partner Veterinary
EMERGENCY & SPECIALTY CENTER

Immune-Mediated Diseases of the Brain and Spinal Cord:

Steroid-Responsive Meningitis-Arteritis (SRMA)

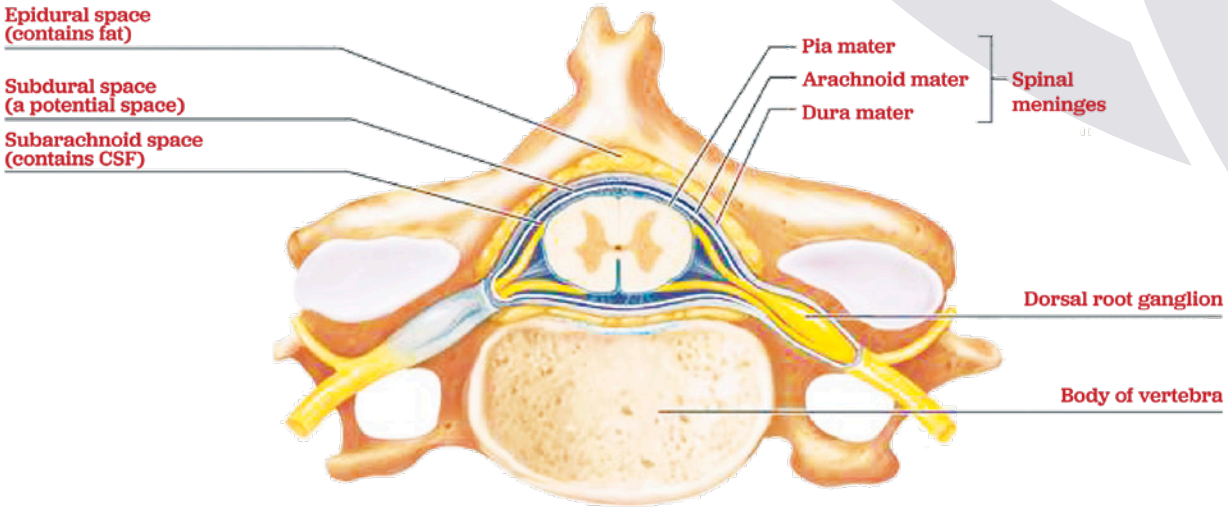
What is SRMA?

Steroid-Responsive Meningitis-Arteritis (SRMA) is a disease of a malfunctioning immune system, which results in inflammation within the meninges and the blood vessels (arteries) of the spinal cord. The meninges are the thin layers of tissue that surround the spinal cord. Inflammation within the lining of the spinal cord (the meninges) is called *meningitis*. Inflammation within the arteries of the spinal cord is called *arteritis*.

The immune system should normally function to help protect the body from things like infections, but in dogs with SRMA, the immune system starts to attack the normal lining of the spinal cord (the meninges).

What Clinical Signs Occur with SRMA?

Dogs with SRMA can have a range of clinical signs. These signs can include severe neck pain, lethargy, fever, and difficulty walking. Some dogs will also develop swollen and painful joints.



(a) Cross section of spinal cord and vertebra

Which Dogs are Prone to Developing SRMA?

SRMA occurs most commonly in young dogs (2 years of age or less), but some dogs develop signs when they are older. Certain dog breeds tend to develop SRMA more than others, including Boxers, Beagles, Weimaraners, Pointer breeds, Bernese Mountain Dogs, and Nova Scotia Duck Tolling Retrievers.

What Causes SRMA?

The underlying cause of SRMA is unknown, but it is likely an immune-mediated or autoimmune disease. There also seems to be a genetic predisposition for the development of SRMA, since there are common breeds affected. SRMA is not caused by an infection.

How is SRMA Diagnosed?

An MRI is recommended to look for evidence of inflamed meninges or to rule-out other causes of your dog's clinical signs.

In most cases, a spinal tap to collect spinal fluid will be recommended to confirm the presence of inflammation. The spinal fluid is sent to a laboratory for analysis. Most animals with SRMA have an increased white blood cell count and protein level in their spinal fluid. Rarely, some dogs with SRMA will have a normal spinal fluid analysis; this tends to happen in animals who are already receiving a steroid. It is also helpful to have a Clinical Pathologist review slides of the spinal fluid to help identify which type of white blood cells are increased. The types of white blood cells that are increased can help us decide whether your dog has SRMA or an infection.

If your dog has swollen or painful joints, then a joint tap may also be performed to evaluate the type of inflammation within the joint fluid.

How is SRMA Treated?

Since SRMA is a disorder of the immune system, it is treated by using medications to help suppress the abnormal response of the immune system. Decreasing the abnormal immune response will help to decrease the inflammation within the meninges.

The abnormal immune response is usually treated with steroids (Prednisone or Prednisolone). If your dog's case is severe or does not respond well to treatment with steroids alone, then we may have to use other additional medications (Azathioprine) to suppress the immune system.

Prednisone or Prednisolone is a steroid that helps suppress the immune system. Side effects with this medication include an increased appetite, increased thirst, increased urination, and increased panting. Sometimes Prednisone can cause gastrointestinal ulcerations or bleeding. Prednisone is initially given at high doses and then slowly tapered over at least 6 months. This tapering of Prednisone is usually done very slowly to help prevent a recurrence of the disease.

What is the Prognosis for SRMA?

The prognosis for a full recovery is good with appropriate treatment. In one study, 100% of dogs treated for SRMA achieved complete resolution of their clinical signs. However, relapse rates as high as 48% have been reported in a recent study. Most of these dogs responded well to adjunct therapy to suppress the immune system. Dogs who are weaned off of their medications too quickly are at a higher risk for recurrence of SRMA; this is why treatment is for at least six months. Overall, the majority of dogs will make a complete recovery and go on to have a great quality of life.

References

1. Tipold A, Schatzberg SJ. An update on steroid responsive meningitisarteritis. JSAP 2010; 51, 150-154.
2. Webb AA, Taylor SM, Muir GD. Steroid-responsive meningitis-arteritis in dogs with noninfectious, nonerosive, idiopathic, immune-mediated polyarthritis. JVIM 2002; 16, 269-273.
3. Lowrie M, Penderis J, McLaughlin M. Steroid responsive meningitis-arteritis: A prospective study of potential disease markers, Prednisolone treatment, and long-term outcome in 20 dogs (2006-2008). JVIM 2009; 23, 862-870.
4. Giraud L, Girod M, Cauzinille L. Combination of Prednisolone and Azathioprine for Steroid-Responsive Meningitis-Arteritis Treatment in Dogs. JAAHA 2021; 57(1), 1-7.