



## UPSTATE VETERINARY SPECIALTIES PLLC

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## AA LUXATION

Atlantoaxial luxation, also known as AA luxation, is a spinal disorder where there is excessive movement or instability between the first two bones in the neck. This is often the result of an abnormally-formed AA joint where the atlas and axis bones do not fit together properly. This instability allows abnormal bending between the two bones which causes compression of the spinal cord and leads to neurologic signs.



There are two causes for the instability: trauma and congenital abnormalities. Certain birth defects can predispose to this instability such as a missing or malformed dens or lack of normal attachments between the two vertebrae.

Toy breeds including Yorkshire terrier, Toy poodles, Pekingese, Pomeranians, and Chihuahuas are most commonly affected by AA luxation. However large breed dogs and even cats can also be affected but less commonly. Dogs with congenital abnormalities usually start showing signs at less than 1 year of age.

## SYMPTOMS

Instability in the AA joint can cause pressure on the spinal cord of the neck, resulting in neck pain. This can manifest as a low head carriage/holding head low, muscle spasms or twitching around the neck, pain when the area is touched, or inability to move the head side-to-side or up- and-down (including unable to eat or drink from food bowls on ground). The most common sign in AA luxation is neck pain. Neurologic symptoms such as weakness or wobbliness in all four legs, inability to stand, inability to move the legs, and even difficulty breathing may also be present. In severe cases dogs may lose their ability to breathe due to paralysis of the diaphragm which can be fatal. Some may exhibit intermittent collapse.



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## TREATMENT OPTIONS

Radiographs may show misalignment between the bones but is not always enough to diagnose AA luxation, so different imaging tools are used, such as an MRI or CT.

Conservative therapy may be used if signs are very mild. A neck brace/splint would be placed and strict confinement to a kennel for 6-8 weeks is required. Pain medication and sedatives help keep the patient comfortable and quiet; sometimes a steroid might be added as well to decrease any spinal cord swelling. The risks of conservative therapy can include progression of disease, particularly when the brace is removed and activity resumed.

Surgery is recommended in cases of long-standing neurologic signs or if non-responsive to conservative therapy. The goal of surgery is to relieve pressure on the spinal cord and permanently stabilize the AA joint. The surgeon will use screws and bone cement to permanently attach the atlas and axis together. After surgery the recovery phase will involve a neck brace/splint and radiographs will be performed at different stages to ensure healing. Surgery has an approximately 80-90% success rate while non-surgical management has a roughly 50% success rate. Recurrence of joint instability is about 40%.

