Atlantoaxial instability

Atlantoaxial subluxation or luxation repair | Dogs

The joint linking the first two neck bones can be dangerously unstable. Surgery aims to protect the spinal cord by holding those bones securely in a safer position.

About the procedure

What is the atlantoaxial joint?

The first neck bone (atlas) supports the head. The second (axis) has a small bony peg, called the dens, which helps the joint stay aligned. If the peg or its supporting ligaments are abnormal, broken or damaged, the bones can shift and injure the spinal cord. Small dogs may be born predisposed, but trauma can affect other dogs too.

What signs might I notice?

Neck pain, reluctance to move the head, a wobbly gait or weakness in all four legs may occur. Signs can worsen suddenly after even a minor accident. Severe cord compression high in the neck can interfere with breathing. Keep the neck supported in a comfortable neutral position during transport and seek urgent veterinary advice.

How is it diagnosed and repaired?

The vet assesses the nervous system and uses imaging, often CT for bone detail and MRI for the spinal cord, when indicated. Positioning must be cautious. During surgery the bones are realigned as safely as possible and held together, commonly with screws or pins and sometimes bone cement or another implant system. Bone grafting may encourage permanent fusion. A different fixation approach may be chosen for individual anatomy.

Is surgery always needed?

Some dogs with mild or stable signs, or unsuitable for surgery, can be managed with strict rest and sometimes a carefully monitored brace. This may not prevent further movement and a brace can cause skin damage. Surgical stabilisation is often advised for clinically significant instability. Severe cases may need referral and intensive nursing.

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Recovery, risks and home care

Recovery and home care

Expected outcome

Dogs with mild nerve damage may recover very well, but severe or longstanding injury can leave permanent weakness. Stabilisation aims to reduce the risk of further injury, not reverse every existing change.

More common or important ongoing problems

Persistent pain or weakness, temporary neurological deterioration, wound problems and implant-related discomfort can occur. A brace, if used, may cause rubbing, pressure sores or eye irritation.

Less common but potentially serious complications

The repair may loosen, break, migrate or fail to maintain alignment. Implants can injure the cord, nearby nerves or vessels. Infection, poor fusion, swallowing problems and respiratory or cardiovascular arrest are serious risks. Sudden paralysis or death is possible despite treatment.

Home nursing and activity

Keep your dog strictly confined in a padded, non-slip space. Cage rest is essential following this surgery. Use a harness and handle gently without bending or twisting the neck. Avoid play, jumping and stairs. Do not apply or change a brace yourself unless the vet has trained you. Monitor breathing, swallowing, wound appearance and limb movement.

Follow-up and recovery

An early wound and neurological check is usually required. Repeat imaging may be scheduled around 4–8 weeks and later to check alignment and fusion. Restriction often lasts at least 6–8 weeks and sometimes much longer. Exercise increases only with approval.

When to contact the practice

Any sudden weakness, marked neck pain, choking, breathing difficulty or collapse requires emergency assessment. A slipping brace, sore skin or new swelling around the repair needs prompt advice.

Questions to ask your vet

What is causing the instability? How will the bones be fixed? Is overnight or intensive monitoring available?

Discussing risks and complications

As with any surgical procedure, complications can occur. Your surgeon will discuss the possible complications, individual risks and expected outcome for your pet during the pre-operative consultation.

General anaesthesia can cause serious complications, including death. Your veterinary team will explain individual risks and alternatives.

Important information

Follow the personalised discharge plan; this sheet is not a consent form. Contact your own practice or its out-of-hours service for urgent care.