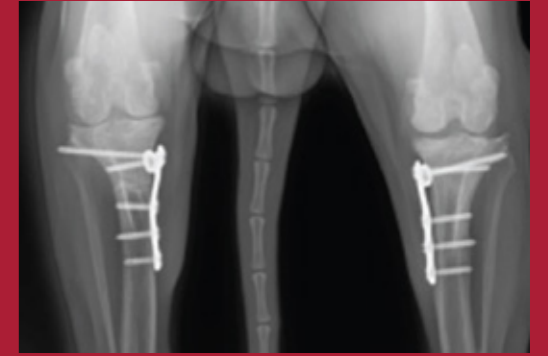


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Case Study Contest



**Effects of PCSO-524®
on Treatment of Cranial
Cruciate Ligament
Rupture in Dogs after
Tibial Plateau Leveling
Osteotomy (TPLO) and
Physical Rehabilitation**

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Abstract

Male Labrador Retriever dog aged 3 years was suffering from left hind limb pain. Hematological parameters were normal. Radiographic image showed swollen left stifle joint and mild osteoarthritis. Cranial cruciate ligament rupture was diagnosed. Firocoxib 5 mg/kg sid for 2 weeks and 2 capsules of ANTINOL® bid for 1 month were prescribed. Tibial Plateau Leveling Osteotomy (TPLO) was operated on the dog. Post operation care included Firocoxib 5 mg/kg sid for 2 weeks and 2 capsules of ANTINOL® bid in combination with physical rehabilitation using laser stimulation and later exercise therapy was added. Clinical signs were improved as indicated by lameness score, muscle mass and range of motion. Fivemonths after the operation, the dog expressed signs of right hind limb pain and radiographic image showed swollen right stifle joint and mild osteoarthritis of left stifle joint. Partial tear of cranial cruciate ligament was diagnosed. The dog was treated for thrombocytopenia until recovered before Tibial Plateau Leveling Osteotomy (TPLO) was operated on the right knee 3 months later. Radiographic examination post operation showed increased inflammation of both stifle joints. Surgical treatment was used in combination with medication which included NSAIDs during the first 2 weeks post operation, ANTINOL®, and physical rehabilitation in order to reduce pain and inflammation. The treatment gave satisfactory results. The dog was able to use its legs without lameness, muscle was stronger, stifle angle was better and general health was improved.

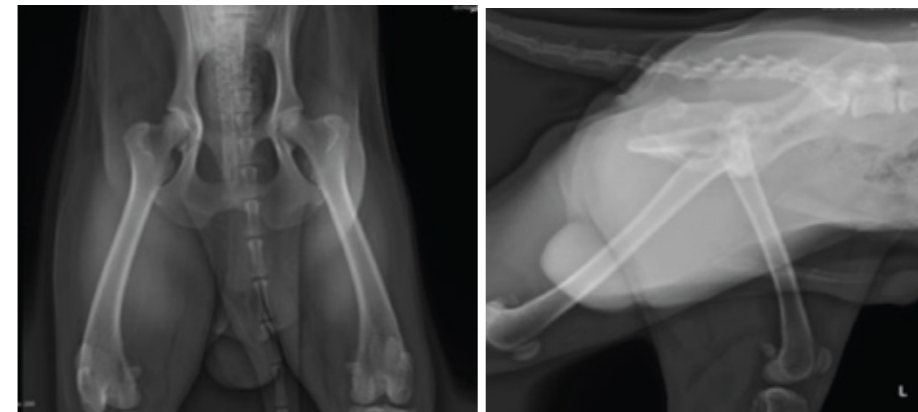
Keywords:

Cranial cruciate ligament rupture, ANTINOL®, postoperative management, Tibial Plateau Leveling Osteotomy (TPLO), rehabilitation

Case history

Male Labrador Retriever dog aged 3 years was suffered from left hind limb pain. The dog was unable to bear body weight on left hind limb and eventually stopped using left hind limb. No history of accident was known. Preliminary treatment of carprofen 2.2 mg/kg bid for 1 week did not improve clinical signs. Physical examination found lameness score of 4/5, swollen left knee that caused pain when extended or adducted, positive sit test, positive cranial drawer sign, positive tibial compression test. Hematological test results were normal. Radiographic image showed swollen left stifle joint and mild osteoarthritis.

Diagnosis plan and Results



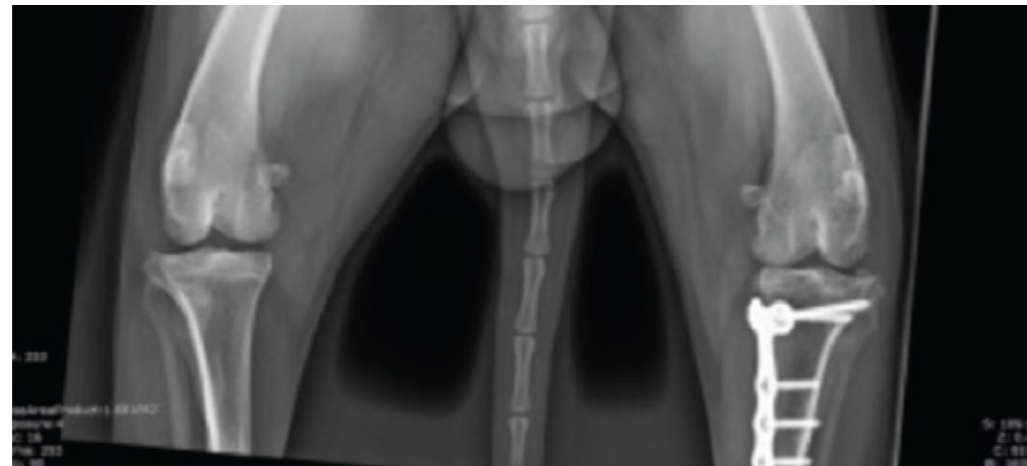
The dog was diagnosed with cranial cruciate ligament rupture. Firocoxib 5 mg/kg sid for 2 weeks and 2 capsules of ANTINOL® bid for 1 month were prescribed. Tibial Plateau Leveling Osteotomy (TPLO) was operated on the dog. Post operation care included Firocoxib 5 mg/kg sid for 2 weeks and 2 capsules of ANTINOL® bid in combination with physical rehabilitation using laser stimulation and later exercise therapy was added. The dog showed improvement of clinical signs after the treatment (Table 1).

Table 1. Lameness score, muscle mass and Range of motion of left stifle prior to and post operation

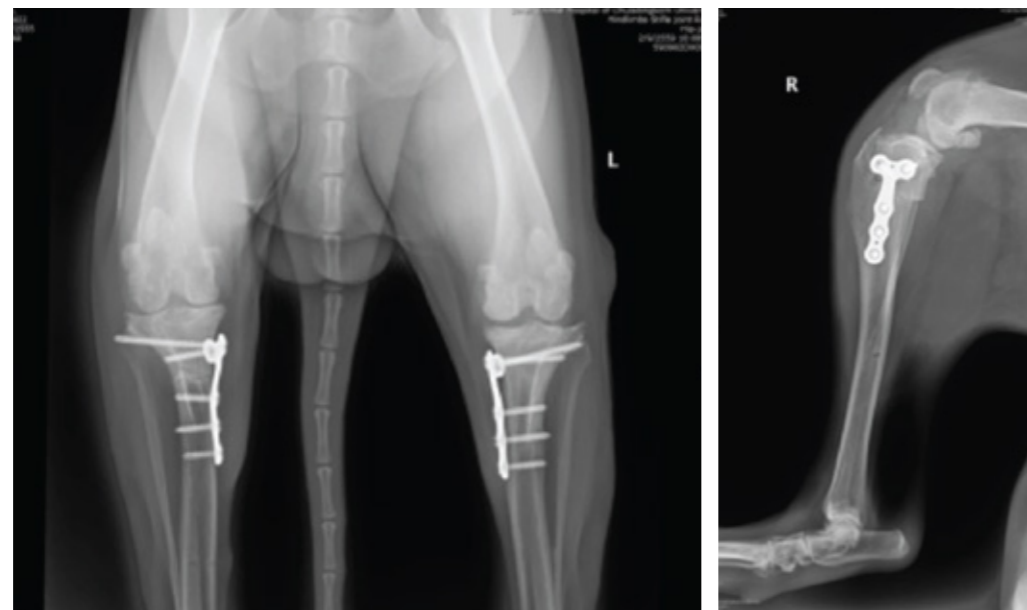
Left hind limb	Lameness score	Muscle mass	Range of motion of left stifle
Prior to operation	5/5	43.1 cm	Flex 67° Extend 135°
2 months post operation	2/5	43.8 cm	Flex 60° Extend 135°
4 months post operation	No lameness	44.6 cm	Flex 58° Extend 145°

Examination results and surgical treatment

Fivemonths after the operation, the dog expressed signs of right hind limb pain and was unable to bear weight. There was no accident history. Physical examination found lameness score of 3/5, pain of stifle joint when extended or adducted, positive sit test, positive cranial drawer sign, positive tibial compression test and thrombocytopenia. Radiographic image showed swollen right stifle joint and mild osteoarthritis of left stifle joint.



Partial tear of cranial cruciate ligament was diagnosed. The dog was treated for thrombocytopenia until recovered before Tibial Plateau Leveling Osteotomy (TPLO) was operated on the right stifle joint 3 months later. Radiographic examination post operation showed increased inflammation of both stifle joints.

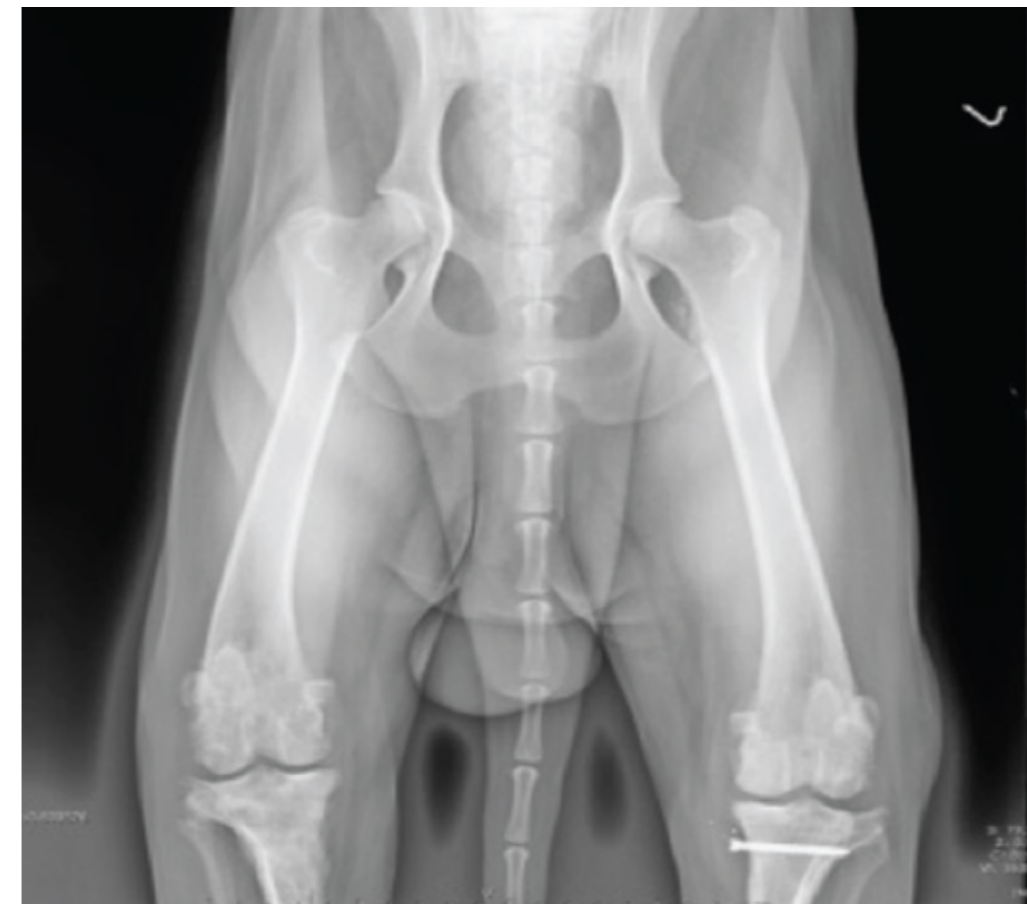


Post operation care included Firocoxib 5 mg/kg sid for 2 weeks and 2 capsules of ANTINOL® bid in combination with physical rehabilitation using laser stimulation and later exercise therapy was added. The dog showed improvement of clinical signs after the treatment (Table 2).

Table 2. Lameness score, muscle mass and Range of motion of right stifle prior to and post operation

Right hind limb	Lameness score	Muscle mass	Range of motion of left stifle
Prior to operation	5/5	40 cm.	Flex 70° Extend135°
2 months post operation	3/5	40.5 cm.	Flex 66° Extend135°
4 months post operation	2/5	40.8 cm.	Flex 62° Extend140°
8 months post operation	1/5	41.5 cm.	Flex 55° Extend145°
16 months post operation	No lameness	43.2 cm.	Flex 52° Extend150°

Radiographic image taken 15 months post operation showed osteoarthritis of both stifle joints



Discussions

Cranial cruciate ligament is the ligament that connects lateral femur with the intercondylar of tibia. Cranial cruciate ligament rupture is frequently caused by injury of the hind limbs. Etiology and pathogenesis of the rupture is not clear. Some studies suggested that important etiology is chronic degeneration of stifle joint (Vasseur et al., 1985; Hayashi et al., 2003a), for example, abnormal limb structure can cause degenerative joint disease and put too much pressure on cranial cruciate ligament leading to chronic degeneration and rupture of the ligament. The most common and widely accepted treatment is adjusting angle of tibia called Tibial Plateau Leveling Osteotomy (TPLO) in combination with medication and physical rehabilitation. Medical treatment included pain reliever and anti-inflammatory drugs, NSAIDS, and nutraceutical drug such as ANTINOL®. ANTINOL® is extract product from New Zealand Green-lipped mussel and consisting of 6 lipid ingredients, 10 marine ingredients, and over 90 essential fatty acids. It is effective for treatment of inflammation, pain of joints and other parts of the body without any adverse effects. For the most effective treatment outcome, physical rehabilitation is concurrently used with pain relief medication and nutraceutical such as ANTINOL® post operation. The objective of ANTINOL® use is to reduce inflammation that occurs after the operation, for example, soft tissue inflammation affected from the operation and inflammation of joint. Physical rehabilitation is used to shorten the process of inflammation, reduce pain, and help animals regain the leg movement and quality of life. The physical rehabilitation is categorized as 1) Use of tools and equipments to reduce joint pain and inflammation, for example, laser, ultrasound and electrical stimulation 2) Exercise to restore the leg ability to bear weight and to strengthen the muscle after the inflammation is reduced.

Conclusion

Cranial cruciate ligament rupture is mostly caused by chronic degeneration of stifle joint, for example, abnormal limb structure can cause degenerative joint disease and put too much pressure on cranial cruciate ligament leading to chronic degeneration and rupture of the ligament. The most common and widely accepted treatment is adjusting angle of tibia called Tibial Plateau Leveling Osteotomy (TPLO) in combination with medication and physical rehabilitation. Medical treatment includes pain reliever and anti-inflammatory drugs, NSAIDS, and nutraceutical drug such as ANTINOL®. ANTINOL® is used to reduce inflammation and pain of joint and other parts of the body. It is safe and can be used for long-term treatment without any adverse effects. Therefore appropriate for treatment of inflammation that occurs after the operation, for example, soft tissue inflammation affected from the operation and inflammation of joint. For the most effective treatment outcome, physical rehabilitation is concurrently used with pain relief medication and nutraceutical such as ANTINOL® post operation. Physical rehabilitation is used to shorten the process of inflammation, reduce pain, and help animals regain the leg movement and quality of life.

References

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