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Presumptive Border Collie collapse in a dog: serial clinical observation and successful management

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Abstract

A 6-month-old female Border Collie presented with a history of collapse after strenuous exercise. The dog was normal between episodes but experienced loss of focus and ataxia after exercise. This is particularly noticeable under hot weather conditions. No remarkable findings were observed in the diagnostic tests. Based on these results, the patient was tentatively diagnosed with Border Collie collapse (BCC). After exercise restriction, the dog had no episode of collapse and remained clinically well with no signs until the follow-up period of 8 months was complete. To our knowledge, this is the first case report of BCC in South Korea.

Keywords: ataxia; Border Collie collapse; dogs; episodic collapse; exercise-induced collapse

Border Collie collapse (BCC) is an episodic nervous system disorder triggered by strenuous exercise in Border Collies and related breeds [1]. BCC-affected dogs are normal at rest and with mild exercise but occasionally show abnormal gait following prolonged excessive exercise [2]. The most common factors associated with an episode in affected dogs are high temperature and excessive activity, including repetitive plays such as retrieval of balls or toys and herding stock [2].

It is common for symmetrical ataxia to affect all four limbs; the hindlimbs are more affected than the forelimbs [1,2]. Collapse episodes include abnormal mentation or loss of focus, disorientation, ataxia such as crossing the legs, falling to the side, increased hindlimb extensor muscle tone, delayed protraction stage, and dragging limbs [1]. In severe cases, dogs can show a collapse episode with an inability to ambulate [2]. However, gait and mentation can return to normal, typically within 30 min of rest [1].

There is no specific test for BCC; however, a presumptive diagnosis can be achieved by excluding other diseases associated with collapse and exercise intolerance, such as hypoglycemia, cardiac arrhythmias, severe anemia, severe pulmonary disease, myopathies, and other neurological disorders such as dynamin 1-associated exercise-induced collapse (dEIC) [3-9].

Clinical or laboratory evaluation results of BCC-affected dogs do not show any abnormalities, and no dog has been reported to exhibit systemic signs or abnormal behavior just before an episode [2,3]. BCC-affected dogs can live normally if they limit trigger activities, especially in hot weather [10]. According to the survey results of a study, there were no deaths during the collapse [2].