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# Rupture of the Gastrocnemius Muscle in a Cow

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Gastrocnemius muscle rupture is one of the most common causes of lameness in periparturient dairy cattle. It is occurring mainly due to overstretching of the muscle belly and may be partial or complete (Nuri *et al.* 2007). A cow with partial rupture of left gastrocnemius muscle subsequent to recumbency due to hypocalcemia is discussed.

## Case History and Observation

A 4-year-old crossbred dairy cow calved four days back was presented to Veterinary College and Research Institute teaching hospital, Namakkal with history of recumbency for the past two days. It was treated with calcium borogluconate and fluids by local veterinarian for two days. On clinical examination the animal was moderately bright on its sternal recumbency. On palpation of left hind limb showed moderate hard, painless swelling in the gastrocnemius muscle, relaxed gastrocnemius tendon during hock flexion and sluggish pedal reflex. With some assistance the animal was able to stand with dropped left hock (Fig. 1). Bone fracture and luxation were not present. Elevated temperature (39.2° C), pulse rate (78/min) and respiratory rate (37/min) were observed. Haematological parameters were within the normal range. Elevated serum creatinine phosphokinase (2375 IU/L), Aspartate aminotransferase (675 IU/L), serum globulin (5.2 g/dl) and decreased serum calcium (7.6 mg/dl) and serum albumin (1.4 mg/dl) were recorded. The total protein (6.6 g/dl), serum phosphorus (5.1 mg/dl) and magnesium (2.6 mg/dl) were within the reference value.

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## Treatment and Discussion

The cow was treated with streptopenicillin @ 10 mg/kg bid i/m, meloxicam @ 0.5mg/kg i/m for five days. The animal was able to stand and walk with dropped left hock. Gastrocnemius muscle rupture in cattle is mostly occurs in periparturient recumbent cows and less frequently in young bulls and fattening cattle (Wessels and Greenwood, 2007). The gastrocnemius muscle rupture may be partial or complete and unilateral or bilateral. In partial rupture, the animal attempts to bear weight on the affected limb with hock remains flexed, the point of hock drops and rests nearly on the ground. The bilateral complete rupture of gastrocnemius, both hocks touch the ground. The common site of rupture is at the junction of muscles and tendon approximately 8 to 12 em proximal to the hock and less commonly at the origin or insertion of the gastrocnemius muscle (Weaver, 1997). Mostly the gastrocnemius muscle rupture causes recumbency and swelling in the caudal aspect of the thigh and instability of stifle joint (Sophy *et al.* 2005). The tendinous part of gastrocnemius muscle remains flexed during the hock flexion. It is most commonly associated with deficiencies of calcium, phosphorus and vitamin D. There are many etiological factors attributed for the rupture of gastrocnemius muscle in cattle like trauma during jumping and falling, weakness of muscle and effort to rise during parturient paresis, unexpected mounting by bull, prolonged recumbency with resulting myositis and muscle injury due to irritant injections (Nuri *et al., loc. cit*) Elevated temperature, pulse rate and respiratory rate were due to pain and inflammatory response to gastrocnemius muscle rupture. The CPK, AST are muscle oriented enzymes in cattle and are elevated in severe gastrocnemius muscle