Spastic paresis of the hindlimb muscles is a well-known neuro-muscular disease. Frequent occurrence of an atypical form of the disease in Belgian Blue (BB) calves led us to perform a retrospective study in order to establish a differential diagnosis.

We reviewed 194 BB calves referred to our clinic. Most of the animals showed continuous trampling when standing. Diseased calves presented a stiff gait with jerked movements and muscle spasms. Depending on the hock angle and direction of the spastic movements of the affected limbs we recognized three distinct forms of the spastic paresis.

1) Calves affected by the spastic paresis of gastrocnemius (SPG) presented the hocks excessively opened and each muscle spasm produced a backward swinging of a suspended limb. In unilateral cases, the limb was kept in constant hyperextension. 2) Animals diagnosed as having the spastic paresis of the femoral quadriceps (SPQ) showed hyperextension of the stifle joint and a forward swinging of the limb. The hock angle was less opened. Their gait resembled that of tin soldiers and, on palpation, the femoral quadriceps was in a persistent spasm. 3) Some calves presented combined spastic paresis of both the gastrocnemius and femoral quadriceps. Their hock angle was excessively opened and at the same time the suspended limb swung forwards with each muscle spasm. On palpation, both gastrocnemius and quadriceps were constantly firm and spastic.

Of the 194 BB calves, 109 presented a SPG (mean age 16±9 weeks, mean weight 127±53 kg), 64 presented the SPQ (age 5±3 weeks, weight 75±24 kg), and 21 were affected by the combined form (age 21±3 weeks, weight 178±39 kg).

In conclusion, our study confirms the existence of distinct forms of the hindlimb spastic paresis. SPQ cases showed a typical forward swinging of the affected limbs, whereas the SPG calves swung their limbs backwards. Moreover, calves affected by the SPQ were significantly younger than those affected by the SPG and the combined form.

Interestingly, in some cases presenting the combined form, the signs of quadriceps spasticity diminished when signs of SPG developed later in the course of the disease, probably because of the counterbalancing effect of the gastrocnemius.

This study gives new insights into the differential diagnosis of the spastic paresis in calves. In order to confirm clinical diagnosis and to understand the underlying cause of spastic paresis, an electromyography study is currently in progress.