

'Tying up'

by Line Kjære DVM MRCVS.



Tying up is caused by the muscle fibers in the horse necrotizing (dying). It can affect all types of horses at all times, however it is often seen associated with exercise hence the name exercise-associated rhabdomyolysis and exertional rhabdomyolysis.

Clinical signs often include stiffness, unwillingness to walk, stiff, swollen and sore muscles, very dark urine. Less severe cases may present just as under performing, slightly stiff horses or slightly abnormal gait.

What can I do?

Tying up is always an emergency and if your horse does tie up you will need to call your vet. Until then stop all exercise and stand the horse in a quiet place. Keep the horse still until the vet arrives, do not force the horse to walk.

What will my vet do?

When the vet arrives they will ask you for some history for the horse. Has it done a lot of exercise lately? Has it been standing still for a while and recently brought back into work? What do you feed your horse? Is the horse turned out? Is the horse currently on any medication?

Then the vet will do a clinical exam including taking heart rate, temperature, watching the horse move (if possible) and palpating its muscles. In some cases it is possible to make a diagnosis based on the clinical examination only, but often the vet will take a blood sample to make a diagnosis. This will be analysed to evaluate muscle enzymes such as creatine kinase (CK) and aspartate aminotransferase (AST). These enzymes will increase significantly in cases of rhabdomyolysis and will give a definitive diagnosis. CK peaks quite early (4-6 hours after onset of injury) whereas AST will rise later. Both indicate muscle damage.

Once a diagnosis has been reached treatment centres around administering pain relief in the form of anti-inflammatories. In severe cases horses may require intravenous fluids to prevent kidney damage. Often your horse will be administered a non-steroidal anti-inflammatory such as bute or flunixin, depending on how much pain the horse is in. In more severe cases the vet might suggest the horse is brought into the clinic for intravenous fluids and to monitor muscle enzymes and electrolytes in the blood to ensure the horse is getting the correct volume and type of fluid therapy.

If the horse is very sore and unwilling to walk, stable rest is recommended until the horse starts moving more freely again. Once the horse is moving comfortably, small walks in hand and

or small paddock rest are encouraged to stretch the muscles and prevent them from cramping further.

Will my horse be okay?

In horses that are only mildly to moderately affected prognosis is excellent and most of them recover fully. In severe cases where horses are recumbent, or in cases where horses develop renal dysfunction (kidney damage) prognosis is much more guarded.

Will it happen again?

Most horses that develop rhabdomyolysis do so because of an underlying condition such as myopathy. It can also be due to electrolyte disturbances in the blood or a high starch/high sugar diet combined with lack of exercise.

Underlying conditions such as polysaccharide storage myopathy (PSSM) and recurrent exertional rhabdomyolysis (RER) are the most common risk factors. Both are inherited. PSSM is most common in Quarter Horses, European Draft Breeds and Appaloosas, but can occur in any breed whereas RER is predominantly seen in Thoroughbreds. Both can be confirmed via muscle biopsy, or in some cases genetic blood tests. PSSM is thought to be linked to abnormal carbohydrate metabolism and an alteration in a muscle gene called GYS1. RER is thought to be due to a calcium handling defect.

Horses that experience multiple bouts of tying up should have a muscle biopsy to confirm whether or not there is an underlying condition. When it comes to managing horses who tie up repeatedly we would recommend changing the diet to reduce starch and sugar to minimal levels, as well as providing regular exercise.

Some horses respond to treatment with a drug called Dantrolene which needs to be given to a fasting horse a few hours before exercise.

About the author:

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After graduating from the University of Copenhagen, Line completed her internship in South Africa, joining a large hospital with mainly thoroughbred stud farms as clientele. She has also worked in Japan and Scotland and has interests in foal diseases and internal medicine.

