Conservative management of a ruptured gastrocnemius muscle in a male llama

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Abstract — Rupture of the gastrocnemius muscle was diagnosed in an obese llama using physical examination and ultrasound imaging. Conservative therapy consisting of the use of a cast to immobilize the affected limb permitted the muscle to heal. Only mild, residual gait abnormalities were observed on follow-up examination.

Résumé — Traitement conservateur d'une rupture du muscle gastrocnémien chez un lama mâle. La rupture du muscle gastrocnémien a été diagnostiquée chez un lama obèse à l'aide d'un examen physique et d'imagerie ultrasonique. Un traitement conservateur consistant en l'utilisation d'un plâtre pour immobiliser le membre affecté a permis la guérison du muscle. Seules les anomalies résiduelles mineures de la démarche ont été observées à l'examen de surveillance post-thérapeutique.

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A 4-year-old, obese, intact, male llama was examined for a severe lameness of one day's duration. The lameness was observed immediately after this llama and a younger, more athletic llama were involved in a protracted fight.

On physical examination, the llama was not bearing weight on the right pelvic limb. Numerous superficial lacerations, presumed to be bites, were observed over the right and left semimembranosus, semitendonosus, and gastrocnemius muscles. Swelling and warmth were noted in these muscle groups. The right limb was more severely affected than the left. The right hock was readily flexed with the stifle held in a fully extended position and flexion of the hock did not increase tension on the tendon of the gastrocnemius muscle. The tendon, its insertion, and the tuber calcanei all appeared intact on palpation. No other abnormalities were noted on physical examination.

The caudal muscles of the left and right pelvic limbs were examined using ultrasonography. The right and left gastrocnemius muscles were asymmetrical. The normal sectional tissue texture of muscle was disrupted in the right gastrocnemius muscle. The central tendon was not distinct. There did not appear to be disruption of the outer surface of the muscle or evidence of hemorrhage in the tissue surrounding the muscle. Rather, the internal structure of the muscle was damaged and areas of hyperechoic fluid, presumed to be a hematoma, were dispersed throughout the proximal one-third of the muscle. These observations were consistent with a traumatic rupture of the proximal part of the gastrocnemius muscle (1).

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The llama fasted overnight and was anesthetized with xylazine (0.15 mg/kg body weight (BW), IM), butorphanol (0.05 mg/kg BW, IM), and ketamine (2 mg/kg BW, IV). The right pelvic limb was positioned in a normal weight-bearing position and placed in a synthetic cast, which enclosed the foot and extended proximally to the midfemoral area to fix the stifle and the hock joints. The llama's gait and ability to walk were dramatically improved after application of the cast. A single dose of meglumine flunixin (1 mg/kg BW, IM) was administered postoperatively, and procaine penicillin G (20 000 IU/kg BW, IM, q12h, 4 d) was administered as a prophylactic measure. The llama was discharged with instructions for it to be confined in a small pen and for the cast to be examined.

The cast was removed and a follow-up examination was made 8 wk after the initial examination. Despite the extended use of external immobilization, complications including cast sores and muscle atrophy were not observed. At this time, the stifle and hock could not be flexed or extended independently from each other, and forced flexion of the stifle was accompanied by increased tension in the gastrocnemius muscle and tendon. The llama's gait was dramatically improved. Although lameness was present, he voluntarily bore weight on the affected limb. Palpation of the caudal limb muscles of the right pelvic limb revealed a diffusely firm area throughout the body of the gastrocnemius muscle. This firm area was assumed to be a fibrotic scar. The affected limb was placed in a Robert-Jones support bandage for 7 d. After the bandage was removed, the llama's gait improved. The llama was discharged and the owners were instructed to confine the llama to a small pen for 3 wk. Four months after the llama had been disharged, the owner reported that the llama had only a minor gait abnormality but appeared stiff in the right pelvic limb. The owner reported no reluctance or problems associated with breeding of the llama.

Rupture of the gastrocnemius muscle or tendon has been reported in several species (2–5). Surgical repairs of ruptures of the gastrocnemius muscle have been

attempted, particularly when tendinous portions of the muscle have been affected (2). Response to surgical interventions have been equivocal; spontaneous cures following conservative therapy have also been reported (3). When tears involve the muscular portions of the gastrocnemius muscle, as in this llama, the holding strength of sutured tissues becomes problematic. The cast used in this llama immobilized the hock and stifle joints, allowing torn muscle to heal by second intention with replacement of muscle fibers by fibrous connective tissue. The smaller size of llamas compared with that of cattle and horses favors this conservative approach. This is the first documented report of rupture of the gastrocnemius muscle in a llama. Our experience suggests that this injury may be sucessfully treated by immobilization of the affected limb. CVJ

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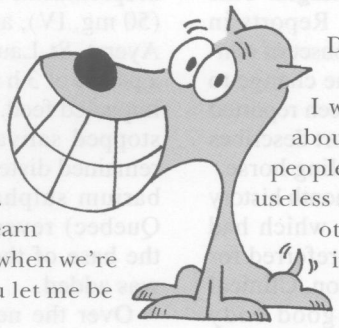
A SMILE OR TWO/DE QUOI SOURIRE?

THE IMPORTANCE OF CORRECT PUNCTUATION



Dear John:

I want a man who knows what love is all about. You are generous, kind, thoughtful. People who are not like you admit to being useless and inferior. You have ruined me for other men. I yearn for you. I have no feelings whatsoever when we're apart. I can be forever happy – will you let me be yours?

Gloria

Dear John:

I want a man who knows what love is. All about you are generous, kind, and thoughtful people who are not like you. Admit to being useless and inferior. You have ruined me. For other men, I yearn. For you, I have no feelings whatsoever. When we're apart, I can be forever happy – will you let me be?

Yours,

Gloria

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