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THE EFFECTS OF TAIL DOCKING IN SHEEP REGARDING TO THE HISTOLOGICAL FEATURES OF THE MUSCLES FROM THE PELVIC DIAPHRAGM

Introduction

Tail docking in sheep husbandry is mainly performed to reduce the risk of fly strike and to improve cleanliness during milking. However, the relationship between tail docking and cleanliness is unclear. This practice causes mild to moderate acute pain and the magnitude of the pain associated with tail removal seems to be related to tail length. Little is known about the long-term implications of tail docking sheep. Ultra-short docking reduces the weight of the recto-coccygeal muscles; it seems to increase the risk of rectal and vaginal prolapse at lambing relative to longer tails and to predispose to neuroma and nerve degeneration.

Aim of the Study

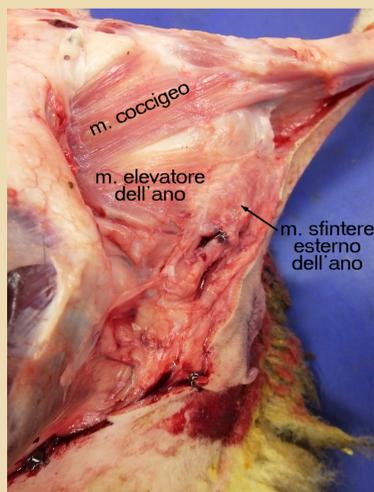
Evaluation of the histological features of the muscles from the pelvic diaphragm and the related nerves in order to improve knowledge concerning to the long-term consequences of tail docking in sheep.

Materials and Methods

- 1 15-months-old Lacaune ewe with ultra-short tail and recurring rectal prolapse
- 1 15-months-old Lacaune ewe with undocked tail
- 1 lamb of Lacaune breed with undocked tail

Histological examination of the external anal sphincter, levator ani, coccygeal muscle and the deep perineal nerve after haematoxylin-eosin or Masson's trichrome staining.

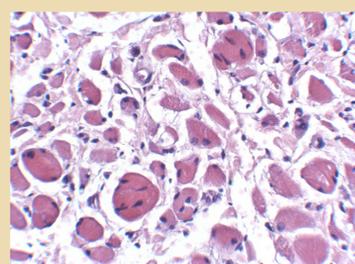
Results



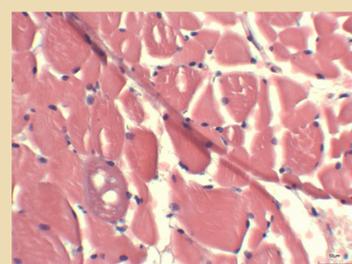
Adult ewe with undocked tail, muscles of the pelvic diaphragm



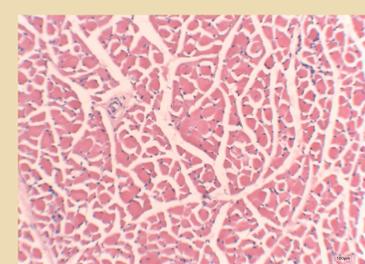
Adult ewe with undocked tail, histological examination



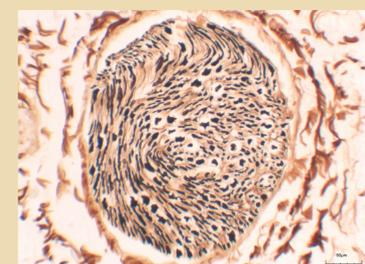
Ultra-short docked ewe, external anal sphincter with internal nuclei. 20x



Ultra-short docked ewe, coccygeal muscle with vacuoles. 20x



Lamb, coccygeal muscle. 20x



Ultra-short docked ewe, deep perineal nerve. 20x

We found changes in shape and size of the muscle fibres from the ultra-short docked ewe: enlarged or moth-eaten fibres were observed amidst normal sized fibres in each of the three muscles of the pelvic diaphragm; furthermore, some internal nuclei were observed. Lamb's muscles appeared normal. Nerve fibres were found to be normal both in the docked ewe and the undocked lamb. Samples from the adult ewe with undocked tail are still to be processed.

Conclusions

The muscle abnormalities observed in the ultra-short docked ewe suggest that tail docking, in the long term, may predispose to pathologies such as prolapses. Improved understanding of the long-term consequences of tail docking, especially the possibility of chronic pain, is needed.

REFERENCES:

- Fisher M.W., Gregory N.G. (2007): "Reconciling the differences between the length at which lambs' tails are commonly docked and animal welfare recommendations". Proc. N. Z. Soc. Anim. Prod. 67, 32–38.
 French N.P., Morgan K.L. (1992): "Neuromata in docked lambs' tails". Res. Vet. Sci. 52, 389–390.
 Mellor D.J., Murray L. (1989): "Effects of tail docking and castration on behaviour and plasma cortisol concentrations in young lambs". Res. Vet. Sci. 46, 387–391.
 Molony V., Kent J.E., Robertson L.S. (1993): "Behavioural responses of lambs of three ages in the first three hours after three methods of castration and tail docking". Res. Vet. Sci. 55, 236–245.
 Sutherland M.A., Tucker C.B. (2011): "The long and short of it: A review of tail docking in farm animals". Appl. Anim. Behav. Sci. 135, 179–191.

