

Post-Castration and Tail Docking Pain Alleviation in Lambs

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Introduction

Castration and tail-docking are common husbandry procedures performed each year on approximately 33 million lambs in Australia.¹ Although these procedures cause acute pain and stress²⁻³ they are routinely conducted without pain management. Growing international concern for the welfare of farm animals in relation to routine husbandry procedures has led to the development of effective methods of pain alleviation that are practical and applicable to farming operations.

Tri-Solfen[®] is a topical anaesthetic agent recently released by Bayer[®] and Animal Ethics Pty Ltd for treatment of mulesing wounds. The aim of this study was to investigate the effectiveness of Tri-Solfen[®] as an anaesthetic for post-operative pain associated with tail docking and castration in lambs.



Methods

57 lambs were randomly allocated to one of three treatment groups for wound sensitivity testing;

- Tri-Solfen[®]
- placebo (consisted of the gel base used in Tri-Solfen[®] without the active ingredients)
- untreated (lambs castrated and tail docked without any treatment).

All lambs were castrated (surgical) and tail docked (surgical or hot iron) in the same process. Wound sensitivity was assessed using Von Frey Hair stimulation of the wound and surrounding skin, measuring local involuntary reflexes and central cognition. These responses were graded using a numerical rating scale (NRS).

Results

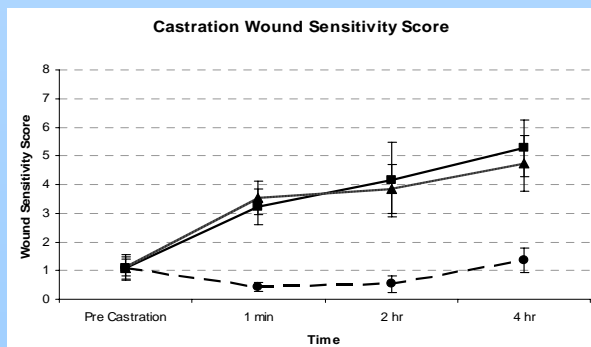


Figure 1 – Mean wound sensitivity score of the castration wound site for lambs treated with Tri-Solfen[®] (●), placebo (▲) or untreated (■) at each measurement time point.

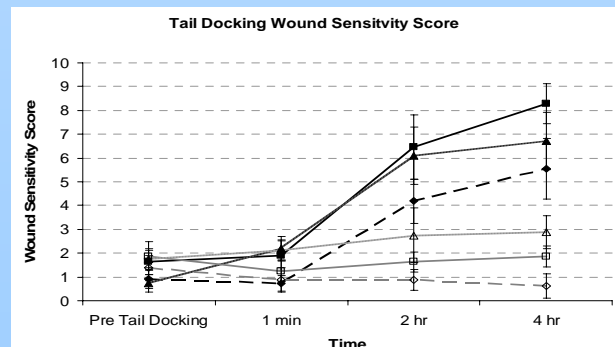


Figure 2 – Mean wound sensitivity score of the tail docking wound site for lambs treated with Tri-Solfen[®] (●), placebo (▲) and untreated (■) following surgical tail docking and lambs treated with Tri-Solfen[®] (◇), placebo (△) and untreated (□) following hot iron tail docking at each measurement time point.



Conclusions

- Tri-Solfen[®] topical anaesthetic significantly reduced pain-related behaviour for a period of up to 4 hrs following castration and tail docking in lambs.
- Hot iron tail docking resulted in significantly less pain related behaviours than surgical tail docking.
- Hot iron tail docking with Tri-Solfen[®] anaesthetic results in the best welfare outcome based on wound sensitivity assessments.
- Tri-Solfen is an effective topical anaesthetic that can be delivered in a simple and cost effective manner.

¹ Australian Bureau of Statistics. *Principal Agricultural Commodities, Australia, Preliminary, 2006-07, 2007.*

² Mellor DJ, Murray L. *Effects of tail docking and castration on behaviour and plasma cortisol concentrations in young lambs. Research in Veterinary Science 1989;46:387-391.*

³ Fell LR, Shutt DA. *Behavioural and hormonal responses to acute surgical stress in sheep. Applied Animal Behaviour Science 1989;22:283-294.*