

Tail docking and castration of lambs

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Introduction

Freedom from pain and physical distress is widely accepted as being a critical part of animal welfare. However, in order to minimize suffering by the animal we must first devise a scale with which to assess the degree of pain that it is feeling. There have been several important developments in animal research in the last twelve months pertaining to pain evaluation in animals. The aim of each of these studies was to determine the most accurate and reliable ways of assessing the level of pain felt by lambs during routine castration and tail docking. It was found that a combination of indices, involving both the measurement of physiological parameters, and observation of behaviours, were most effective for reliable measurement of pain.

Discussion

Pain levels experienced by lambs during castration and tail docking may be assessed by measuring physiological parameters. Peers et al (2002) examined the physiological responses of 2 month old lambs to tail docking and castration with rubber rings. They measured blood pressure using a cannula inserted in the femoral artery and took blood samples using jugular cannulae. The study found that the procedures caused a significant increase in blood pressure and heart rate, and that these levels remained significantly raised for at least four hours. Plasma cortisol and ACTH concentrations also increased markedly in the first hour after the procedures, indicating acute distress. The researchers concluded that arterial blood pressure and heart rate were the most sensitive indices of pain measurement in lambs undergoing castration and tail docking, compared to plasma cortisol and ACTH measurements.

Mellor et al (2002) measured changes in plasma concentrations of adrenaline, noradrenaline and cortisol in lambs after castration and tail docking by rubber ring. The aim of the experiment was to "refine" the evaluation of pain caused by husbandry procedures, by assessing the merit of catecholamines as an index of pain. It was determined that catecholamine measures may be useful in assessing the early stages of the pain response. Further research into the value of physiological parameters for pain assessment is necessary to determine the most reliable and accurate method. Although it is impractical for farmers to use these measures to evaluate pain responses in their animals, this research still has value. In the experimental setting, physiological measurements of pain may be of great use in assisting further research into minimizing the suffering caused by castration and tail docking.

A study by Molony et al (2002) focused on developing a method of assessing pain based on behaviour. A group of lambs were placed in 6 treatment groups involving castration, tail docking or both. The groups were ranked according to the amount and type of tissue damaged during the procedure. Incidences of different postures and behaviours were observed and recorded. Plasma cortisol concentrations were also measured. The aim of the study was to assess how accurately the lambs could be re-allocated to their correct treatment groups using these indices. The researchers found that assessment of a combination of postures and behaviours based on limb and tail movement, and time spent lying with legs extended, most accurately ranked the lambs into their treatment groups. The results of this study demonstrated that the frequency and type of behaviours and postures performed by the lambs after treatment was an accurate measure of discomfort. The development of guidelines based on these results will be of great benefit to future research into animal pain. It will also increase awareness of the severity of these procedures, and aid animal handlers in assessing the need for pain relief during husbandry procedures.

Rutherford (2002) reviewed several approaches to pain assessment. He discussed factors that potentially interfere with subjective measurements of pain. Such factors included

familiarity of the observer with the species and with the individual animal. Rutherford also examined the impact of handling stress. Hence, Rutherford concluded that an integration of both subjective and objective measurements was required to reliably evaluate animal pain. Lambs are subject to both acute and chronic pain at the time of castration and tail docking. Therefore handlers need to be trained to identify the range of pain responses shown by lambs during these procedures. Increased awareness may lead to re-evaluation of the necessity of these procedures, and increased research into possible alternatives.

There are many alternatives available which have been shown to decrease or eliminate distress caused by castration and tail docking of lambs. Morris (2000) reported the success of organic farmers in controlling fly strike by placing flytrap bins in paddocks and regularly inspecting stock. These farmers do not dock lamb tails, or use chemicals to control flies. Many reported to have eliminated fly strike from their farms. Sutherland et al (2002) and Mellor et al (2002) found that the use of local anaesthesia contributed to the significant reduction in cortisol responses of calves after dehorning. Local anaesthetic is rarely used during routine husbandry procedures as it is costly and time consuming. However its importance needs to be re-evaluated. Graham et al (2002) examined variations on the pain response of lambs where the rubber ring was applied to the tail at two different sites. They found that applying the ring 2 cm distal to the site normally used resulted in a significant decrease in active behaviours associated with pain. Such research demonstrates that it is possible to minimize pain caused by routine husbandry procedures such as tail docking and castration of lambs. In fact, docking may not even be necessary, providing the animals are managed effectively.

Conclusion

Recent studies in animal welfare have been aimed at evaluating current methods of pain assessment. Pain assessment scales or guidelines would greatly assist animal handlers in evaluating the need for anaesthesia or analgesia. They may also contribute to increasing awareness of the severity of routine procedures such as tail docking and castration. This may encourage sheep farmers to re-evaluate the need for these procedures on a case-by-case basis, rather than performing them routinely. Current research demonstrates that a combination of objective physiological measurements coupled with more subjective behaviour observation is the most reliable way to accurately assess pain responses in lambs. This is a vital step in ensuring optimal welfare for production animals.

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