Should calves get analgesia when they are disbudded?

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Summary

We know disbudding is painful, yet New Zealand regulations currently allow calves to be disbudded without any analgesia up to nine months of age. There is resistance within at least part of the New Zealand farming industry to changing this requirement to require analgesia for any disbudded calf. This article reviews a recent study (just published online by the New Zealand Veterinary Journal) which looked at the effect of giving analgesia on weight gain in calves and assesses whether these findings might change attitudes.

The study

The study was designed by Andrew Bates and Penny Eder from Vetlife Temuka and was undertaken on two local calf-rearing enterprises. The study involved 202 calves which were allocated to four disbudding protocols:

- **Group 1** – Farmer disbudding (no analgesia)
- **Group 2** – Farmer disbudding with meloxicam (Metacam, Boehringer Ingelheim)
- **Group 3** – Veterinary disbudding with xylazine and local anaesthesia
- **Group 4** – Veterinary disbudding with xylazine, local anaesthesia and meloxicam

Calf weight was recorded at enrolment, 15 and 30 days after disbudding, as was total milk consumption over the first 11 days.

The results

Mean growth rate for the first 15 days was 0.62kg/day over all calves; however when divided by disbudding group it was clear that calves disbudded without any analgesia (Group 1) grew slowest (0.55kg/day) with the calves in the other three groups growing significantly faster (on average ~0.1kg/day).

Over the next 15 days (i.e. days 15–30 after disbudding) calves in Groups 3 and 4 continued to grow faster than those in Group 1, but the difference between Groups 1 and 2 was not significant. Nevertheless, over the whole 30 day period calves in Group 1 still grew more slowly than calves in any of the other three groups.

Cumulative milk consumption was greater for calves in Groups 3 and 4 than Groups 1 and 2 (~1.6L over the 11 day measurement period).
The conclusions

Calves given analgesia at disbudding grew faster in the next 15 days than calves not given analgesia – irrespective of whether the analgesia was a non-steroidal (meloxicam) or a combination of $\alpha_2$-agonists and local anaesthetic. However the effect of meloxicam on growth rate wasn’t as long lasting as the benefit of $\alpha_2$-agonists and local anaesthetic (i.e. it wasn’t associated with an increase in growth rate on days 15–30 whereas xylazine and lignocaine were).

What does it mean?

Anyone who has seen calves disbudded with and without local anaesthetic will have an emotional response that disbudding is painful. This study appears to show the impact of that pain extends for much further than the one minute required to burn and remove the horn bud tissue – more than 15 days later calves that got no analgesia were still growing more slowly than calves that had been given analgesia.

However, it’s not all bad news. This study shows that we can at least partly ameliorate that impact very simply by either using an injection of meloxicam or sedating the calves with xylazine and then anaesthetising the horn bud with lignocaine. Neither of these is difficult, and although the former, when given at the same time as disbudding, will not reduce the immediate pain we should be advocating more strongly that calves are disbudded with at least some form of effective proven analgesia (and for those of you with long memories or large collections of DCV newsletters, no, that does not include homeopathic preparations of hypericum).

Will this data change the perception of disbudding in the farming industry? In my experience, much of the lack of understanding of the importance of analgesia in cattle is not deliberate intransigence in the face of the evidence, but lack of knowledge in regard to analgesia. Research such as the paper discussed in this article can only help increase awareness.

Although lack of awareness is a key issue, there is some opposition to analgesia on a cost and hassle basis – for them, this paper shows that the cost is not all one-way and that disbudding without analgesia has costs too. The evidence that meloxicam can reduce these costs without the ‘hassle’ of local anaesthetic may also persuade some to use analgesia routinely.

However, we should be clear: in this study, use of metacam in the absence of other forms of analgesia was not as effective in reducing pain or in maintaining growth rates as local anaesthetic and sedation. Other workers in this area have found that calves de-horned with local anaesthetic or a NSAID alone displayed similar pain associated behaviours (ear flicking, tail swishing, increased lying time) as calves given no analgesia. Local anaesthetic is certainly cheaper than meloxicam but its administration in the absence of sedation requires manual restraint of the calf with an associated stress response. There is also a delay in the onset of action which means the immediate incisional phase of disbudding may be carried out before analgesia is established and the analgesia will only last approximately 1–2 hours which is considerably less than the estimated duration of the painful period.
This discussion just highlights the fact that we have effective regimes for reducing the pain associated with disbudding during the process and after, with xylazine and lignocaine reducing analgesia during and immediately after disbudding and meloxicam (or other NSAIDs) reducing the impact once the lignocaine and xylazine have worn off.

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The original article is available as on-line to all NZVA members at http://ow.ly/MPqk1. If you click on the link to Taylor and Francis from www.vetjournals.org.nz and go to latest articles you will find online pre-print versions of papers accepted by the NZVJ which will form part of a special issue focussed on welfare in 2015.

Reference

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