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Calf Castration with ClipFitter - Feb 2025

Hi Brian,

Impregnated Rubber Rings

So nice to hear from you. Yes, that is a very interesting castration article. We worked closely with **AVL/Solvvet**, they developed the product and selected K-State as an institution to test it in a live trial. We were pleased to see some of the results indicating that when the band cuts through the skin, calves castrated with **Lidobands** seemed more comfortable shifting from lying to stand positions.

ClipFitter Trial

We are currently in the process of putting together a presentation from the trial we used the ClipFitter last year to present internally on our Phi Zeta Research Day at K-State. Unfortunately, due to funding restrictions we were only able to follow them for 7 days and I would like to follow them for longer until the scrotum sloughs off. What we noticed on our longer trials is that with banding the blood flow restrictions in the first week causes discomfort but latter when the band cut through the tissues, we continue to see discomfort behaviors.

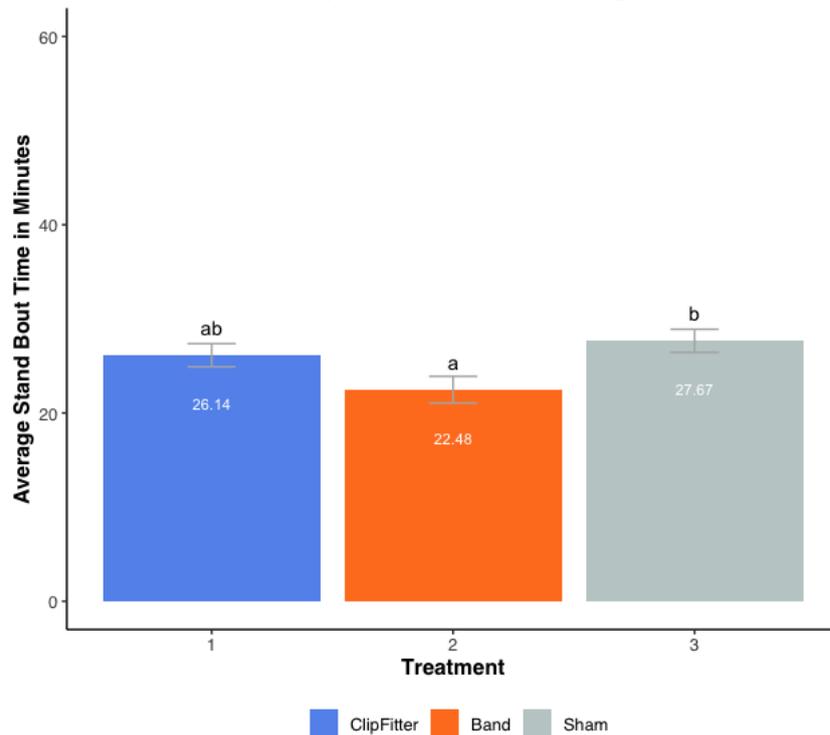
With the ClipFitter we were able to find that temperature of scrotum decreases significantly by 168 hours post castration compared to calves that where not castrated, but we were unable to detect differences in median canthus of the eye that could indicate a systemic impact of pain between groups.

For both band groups we found a significant difference in average stand bouts, which leads us to believe that they were

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uncomfortable compared with uncastrated calves. However, Band was not significantly different from ClipFitter.

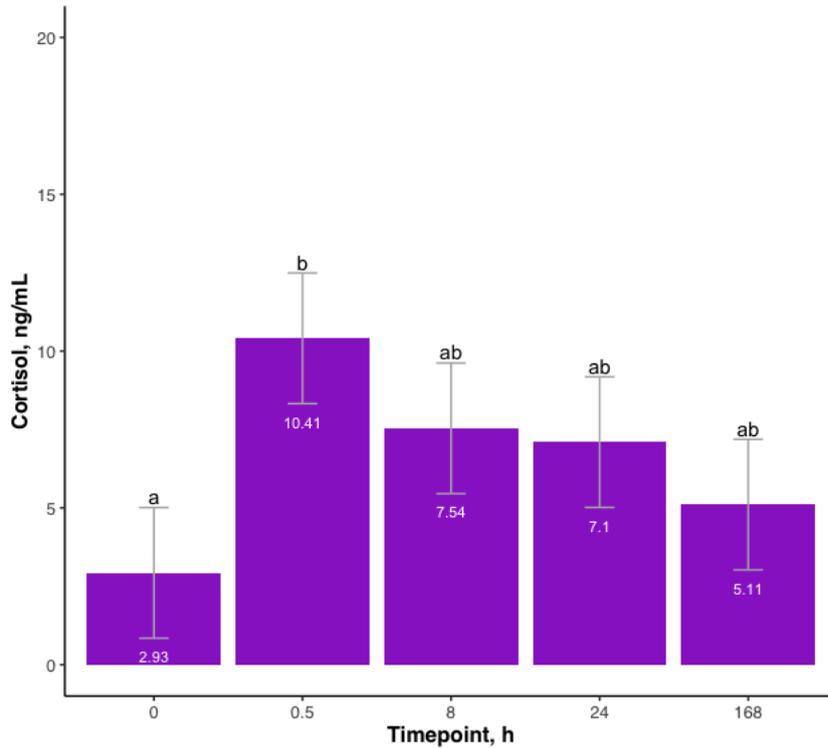
Graph 1. Average duration, in minutes, of stand bouts per 12h over time ($P=0.01$) by treatment group. assessed using lie/stand accelerometers attached to the hind right limb. a-b-c LS-means differ ($P < 0.05$; Tukey-Kramer adjustment).



As far as cortisol and substance P we were unable to detect differences between treatments. However, we saw a spike in cortisol concentrations for all treatments groups following castration (band and ClipFitter) and scrotum manipulation (Sham- non-castrated animals).

Graph 2. Average cortisol concentration by timepoint post castration ($P<0.01$) assessed right before treatment (0h) and using lie/stand accelerometers attached to the hind right limb. a-b-c LS-means differ ($P < 0.05$; Tukey-Kramer adjustment).

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I will continue to update you as we move forward with presentations and possible publication. Regarding new trials, I am still looking for available funding to support future studies. Right now, US grant funding is paused due to changes in the government. So, we are uncertain of when this will be made available again.

Thank you,
Eduarda

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Hi Brian,

So sorry for the delay in answering you. Things got busy here with the beginning of the semester. Jake, my graduate student, and I are still working on putting together a report for the study we ran with ClipFitter. What we found so far was a decrease in Scrotum Average Temperature using infrared thermography at 168 hours post castration compared to calves that were not castrated (Figure 1). As far as blood biomarkers, we found only an effect of treatment on cortisol regardless of treatment (Figure 2). Cortisol peaked at 30 minutes post treatments for all groups (clipfitter, band, and sham). No differences were found on substance P between treatment, timepoints or their interaction ($P > 0.05$).

As far as behaviour, stand and lie logger data demonstrated a decrease in average lie bout time (time spent lying down after a change from standing to lying) for calves in the ClipFitter treatment compared to Sham ($P < 0.05$), and decrease in average stand bout time (time spent standing after a change from lying to stand) for band compared to sham and Clipfitter ($P < 0.05$). No differences in total time spent lying and total time spent standing were found ($P > 0.05$).

It is important to note that we only follow those animals for 7 days. Based on other preliminary data from other band castration studies, the band cuts through skin starting on day 21 and it coincides with changes in behaviors (decrease time lying down, increased wound licks, looks at flank and foot stamping). I would be interesting to follow those animals for longer periods of time and also get wound healing scores.

Figure 1 - Scrotum average temperature for calves castrated with Clipfitter (n=8), standard rubber ring band (n=8), and sham (not castrated; n=8), at baseline (-24h) and at 2, 8, 24, 168 hours post castration.

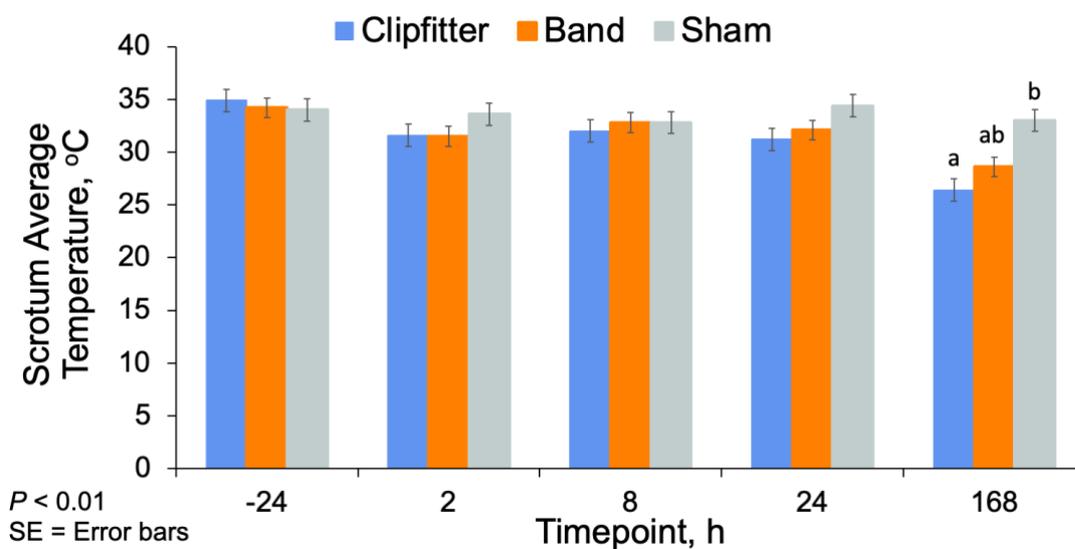
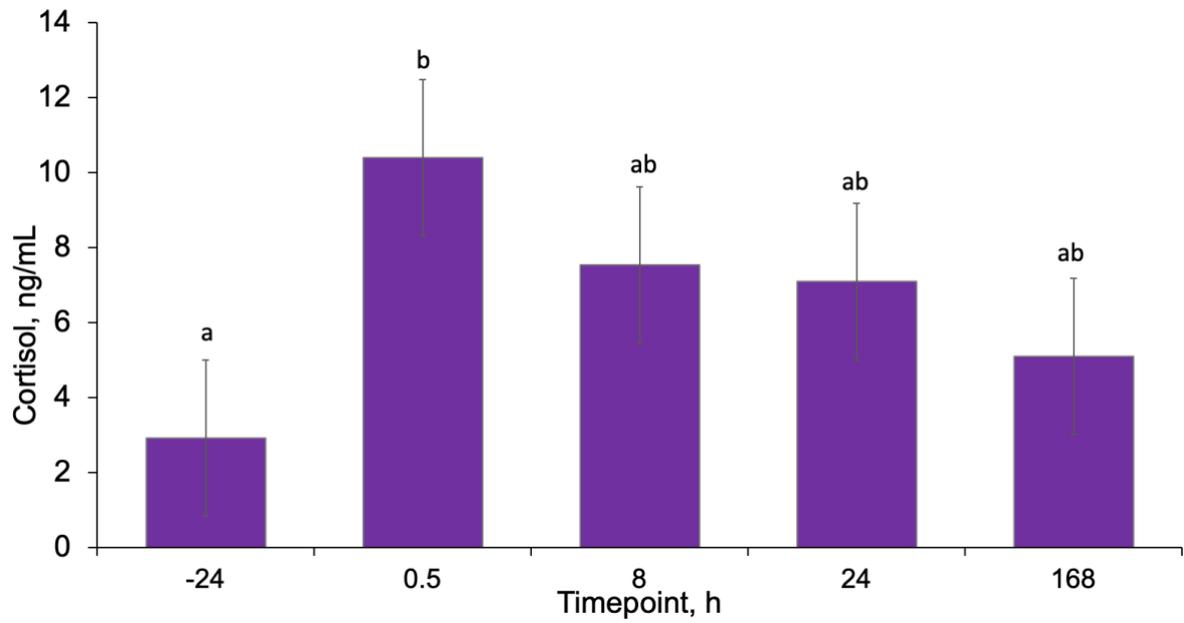


Figure 2 - Plasma cortisol concentrations overtime for calves in all treatments (ClipFitter, Standard Rubber Ring Band, and Sham). Timepoint P-value < 0.01 .

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