Supplemental Figure S1. Study timeline for calves disbudded or sham-disbudded at 3 or 35 d of age.
Supplemental Table S1. Before performing a pain sensitivity test, personnel operating the algometer had to meet all criteria listed below for each of 3 replicates. A replicate consisted of a continuous application of force from 0 to 10 N on a hard, flat surface and consisted of approximately 90 instantaneous readings.

1. Average rate is between 0.2-0.3 N/s.
2. Instantaneous rate does not go below 0 N/s more than 3x.
3. Instantaneous rate never goes above 1 N/s.
4. Instantaneous rate never goes below -0.5 N/s.
5. Instantaneous rate does not go above 0.5 N/s more than 5x.
6. Force starts below 0.5 N.