

Practical application of techniques for performing C-sections in beef cows

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Abstract

As a newly graduated veterinarian, the idea of a calf delivery via cesarean section is daunting. As a young veterinarian I would avoid c-sections so readily I would be exhausted by the time the procedure was the last remaining option. Mentorship and functional tricks can help avoid this misguided fear in new veterinarians.

Key words: dystocia, calving, C-section, cesarean

Résumé

Peu de temps après l'obtention du diplôme, l'idée de délivrer un veau par césarienne est intimidante pour un vétérinaire. Comme jeune vétérinaire j'évitais les césariennes si facilement que j'étais épuisé au moment où cette procédure devenait la dernière option. Le mentorat et des trucs pratiques peuvent aider à prévenir cette peur malavisée chez les jeunes vétérinaires.

Set Appropriate Client Expectations

Bovine cesareans are frequently medical procedures determined by economics. In our practice, the determination to cut is readily associated with the price of the animal's replacement and prognosis of the dam. Data associated with live dam and calf and return to fertility in subsequent calving cycles varies widely. Deciding projected prognosis of the dam, in my hands, depends on stability of cow/heifer, state of degradation of the fetus, ability of practitioner, and efficiency. This number is subjectively decided chute-side based on my experience and very little refereed data. As a rule for new associates, I set the time limit to attempting a vaginal delivery alone at 30 minutes. At this time, they should reach out to more experienced clinical veterinarians or perform a c-section. Being stubborn does not benefit you or your patient in this situation.

Anesthesia

I administer a caudal epidural to all bovine obstetrics at first presentation. This assists some in pain control, keeps you from being slapped with the tail and adds to general public perception of pain modulation. As a general rule I administer 3 ml of lidocaine to an animal less than 900 lb (409 kg) and 5 ml to a bovine over that weight limit.

In all bovine surgical procedures we administer a ketamine stun. Route and dose depends on goal of procedure. I refer to "Chemical Restraint of Ruminants – Ketamine Stun Technique" by Eric J. Abrahamsen, DVM, DACVA, for doses and route selection. For midline approach, I select IV recumbent dosing that I administer via jugular vein. Then using cotton ropes, hydraulic chute, and electric wench roll the cow/heifer into lateral with hind limbs pulled into dorsal recumbency.

Lidocaine block: varying options. Again, my suggestion here is use what you are comfortable with, likely enough lidocaine in any pattern will work. For midline approach, I use solely a line block from 1 hand width above the navel to the udder.

Epinephrine: when commercially available, I always administer 10 ml of epinephrine IM. I find this to help notably with pliability of the uterus. Please reach out to AABP about current status of the medically necessary waiver to allow production of commercial epinephrine. Refer to compounding law for a decision on administering compounded product to food-producing animals.

Approach

Our clinicians perform predominantly midline approach to the uterus, with the remainder being left flank. For this discussion I will focus mainly on the midline incision approach to the uterus. Preference for midline approach in our practice is 3-fold. Primarily the animals we perform C-sections on are small feeder or replacement heifers weighing less than 900 lb (409 kg), making obstetrics facilities to fit them hard. This animal is also very likely to "give up" and lay down on their own. Secondly, our clientele mostly encompasses western ranches, allowing the vast majority of animals presented for dystocia to have dead and necrotic calves or have had extensive on ranch attempts for fetal extraction. Lastly, we find it to be notably less physically taxing and we can more efficiently perform the procedure. Decision for the approach should be made based on your practice demographic, bovine population, and mentoring ability.

At this point the animal is anesthetized, in dorsal recumbency from abdomen caudally, and has had a line block administered with lidocaine. A simple incision is made into the abdomen through the linea. Any structure within the uterus is pulled up to the body wall incision and the uterus is incised. Chains hooked to feet and either another human or wench keeps tension on the fetus while a uterine incision large enough to extract the fetus is made. The fetus is

removed and attempt is made to exteriorize the uterus only enough to help ensure amniotic fluid does not spill into the abdomen.

The uterus is closed with 0 PDS in the Utrecht pattern, then lavaged with LRS and returned into the abdomen. Body wall closure is in 3 layers: linea, subcutaneous tissue, skin. For the inner layers I choose PDS 2, and the skin is closed with Braunamid 8.

Post-operative Care

The above procedure from time of anesthetic administration to cow/heifer standing averages 30 minutes. Be careful to pick up placental materials, blood, and fluid before

allowing the cow to stand to help ensure she doesn't slip when standing.

Administration of antibiotic of choice is warranted based on state of metritis and appropriately labeled and spectrum drugs. A NSAID is always administered to the dam.