SOP No: ATT 016

SUBJECT: Caesarean Section in Cattle

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POLICY: This procedure may only be performed by registered veterinarians
or veterinary student(s) assisting and under the direct supervision
of a registered veterinarian

PRECAUTIONS: The procedure requires assistants to help the surgeon deliver the
calf and provide appropriate care after the procedure. ALWAYS
EXAMINE THE REPRODUCTIVE TRACT FOR A SECOND
Calf PRIOR TO CLOSING.

EQUIPMENT: (per cow) Sterile surgical kit (to include):
Surgical Drapes (of appropriate size and number)
Surgical instruments (appropriate for animal) and Swabs
Suture materials (appropriate for animal)
Lignocaine 2% solution
Oxytocin solution
Calving chains x 2
Surgical preparation solutions (iodine or chlorhexidine) and swabs
Animal clippers
Antibiotics (such as oxytetracycline)
Non-steroid anti-inflammatory drugs (such as ketoprofen)
Regional anaesthetic needle 18G x 6 inch
Needles (e.g. 21G, 18G)
Syringes (e.g. 5mL, 10mL, 30mL)
Insect repellent spray
Sterile surgical gloves
Disposable rectal and examination gloves

PROCEDURE:

1. Pre-surgery preparation: The surgical and local anaesthetic site(s) are clipped and prepared using the surgical preparation solution(s).

2. Anaesthesia: Regional anaesthesia may be accomplished by a variety of methods (an inverted L block, paravertebral block or a line block), depending on the individual circumstances. For the inverted L block, large volumes (may be up to 150 to 200 mL total volume) of lignocaine are injected into the different layers of the left flank (abdominal wall) in an inverted L configuration. If necessary, epidural analgesia may be used to reduce abdominal straining.

3. Surgical Procedure: A vertical skin incision is made ventral to the lumbar transverse processes. The external and internal oblique muscles and the transversus muscle are incised parallel to the skin incision. Vessel bleeding may be controlled by clamp or ligation. The fascia and peritoneum are elevated, carefully incised to avoid cutting any underlying viscera and the incision extended dorsally and ventrally. Each incision in the separated layers of the abdominal wall is shorter than the preceding one. If the apex of the gravid horn (left or right) is positioned in the right side of the
abdomen, the uterus must be rotated to bring the gravid horn up to
the incision and elevate and exteriorize the apex of the gravid horn.
The uterus is incised along the greater curvature to create an
opening long enough to allow extraction. Sterile chains are applied
to the limbs and the foetus is slowly extracted. Thereafter the
uterus is kept in position by means of sponge forceps: escaping
placental fluid should not be allowed to enter the abdominal cavity.
The uterus is closed using an inverting pattern and absorbable
suture material. During the closure it is important that each suture
be pulled tightly to ensure a tight inverting suture line which will
minimize any leakage and also minimize exposure of suture
material. The sutured uterus is replaced in the abdominal cavity.
The abdominal wall is closed in several layers. A simple continuous
suture of absorbable suture material is used to close the
peritoneum, fascia, and transversus muscle as one layer. The
oblique muscles may be closed as one or two layers using
absorbable suture and a simple interrupted suture pattern. The
skin incision is closed with non-absorbable suture in either a
continuous or simple interrupted suture pattern. Oxytocin
(approximately 50 IU per cow; dose may vary) may be
administered to the cow any time after the uterine suture is
completed. Skin sutures should be removed from most cows in 10
to 14 days.

4. Check for presence of a second calf.

RECOMMENDATIONS: Post-operative care may include systemic antibiotics (such as
oxytetracycline) administered according to label directions and
nonsteroidal anti-inflammatory drugs (such as ketoprofen)
administered according to label directions. The placenta is
normally expelled after 4 hours. If the placenta is retained, further
examination may be necessary. The surgical wound should be
observed for several weeks for presence of discharges or signs of
infection.

REFERENCES

Williams, Baltimore/London. 36 – 37, 76 – 77.