

SOP No:	ATT 016
SUBJECT:	Caesarean Section in Cattle
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.
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 ketapofen) 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:	<p><u>1. Pre-surgery preparation:</u> The surgical and local anaesthetic site(s) are clipped and prepared using the surgical preparation solution(s).</p> <p><u>2. Anaesthesia:</u> 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.</p> <p><u>3. Surgical Procedure:</u> 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</p>

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.

RECOMMENDATIONS: Post-operative care may include systemic antibiotics (such as oxytetracycline) administered according to label directions and nonsteroidal anti-inflammatory drugs (such as ketaprofen) 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.

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REVISED:

REFERENCES

1. Hanie E.A. 2006. Large Animal Clinical Procedures for Veterinary Technicians. Elsevier Mosby. 358 - 359
2. Atlas of Large Animal Surgery. 1985. Edited by A. W. Kersjes, F. Németh and L.J.E. Rutgers. Williams & Williams, Baltimore/London. 36 – 37, 76 – 77.