

manipulation more difficult. Secure the upper rear limb with moderate caudal traction to expose the caudal region of the flank. (Figure 3) Beginning 15 to 20 cm ventral to the tuber coxae make a 20-cm skin incision immediately cranial to the quadriceps femoris muscle. Extend the incision sharply through the muscle layers into the abdominal cavity. (Figure 4) Enlarge the incision as needed to visualize and exteriorize the diseased ovary. (Figure 5) If xylazine hydrochloride has been used in the anesthetic regimen, administration of epinephrine 1:1000 (5 ml IV) will induce almost immediate uterine relaxation and will facilitate surgical exposure of the ovary. Apply transfixation ligatures or umbilical cord clamps to ensure hemostasis of the ovarian pedicle. Close the peritoneum and transverse abdominal muscle with No. 2 chromic gut with a simple continuous pattern. Close the fascia of the internal and external abdominal muscles in similar fashion. It is not necessary to suture the subcutis but suture the skin with a continuous interlocking pattern of 0.6 mm nonabsorbable suture.

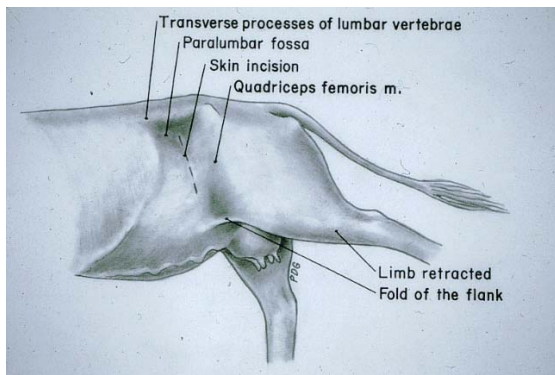


Figure 3: Incision site in caudal paralumbar fossa near hind retracted caudally.

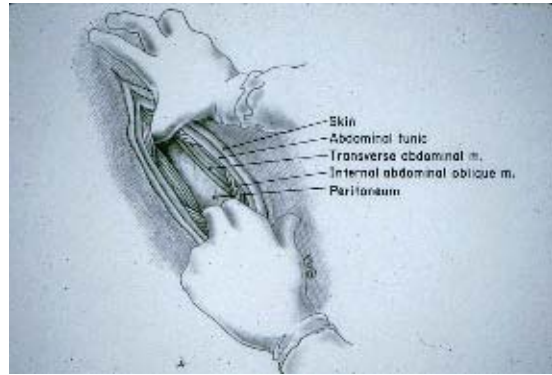


Figure 4: Vertical incision extended into the abdominal cavity.

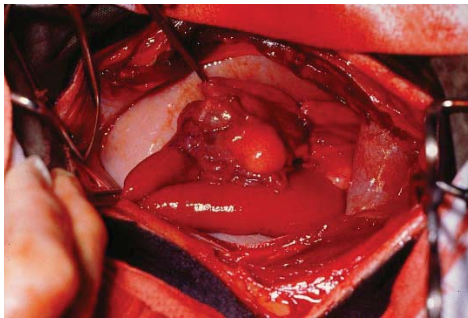


Figure 5: Ovary and uterine horn exposed through caudal flank incision.

Cervicopexy

Cervical and vaginal prolapse may be relatively permanently repaired by suturing the cervix to the prepubic tendon. The owner should be advised that cervical and vaginal prolapse are potentially heritable conditions. The technique we currently use is a modification of Winkler's technique.

The original technique as described by Winkler was performed by achieving epidural anesthesia and cleansing the perineum and vaginal vault. Catheterize the urethra with a rigid catheter to ensure the urethra is not compromised by the surgical procedure. Introduce a large half

curved or “S” shaped suture needle that has been bent in a “U” shape through the vaginal floor at the fornix of the vagina, take a bite through the prepubic tendon, bring the needle back into the vagina on the side opposite the initial vaginal puncture then complete the suture pattern by taking a bite through the lower one-half of the cervix being careful not to penetrate the cervical lumen.(Figure 6, Figure 7) This procedure is relatively easy to perform in thin cows by experienced surgeons. However, the procedure is technically difficult in obese animals.



Figure 6: Heavy suture needle bent in shape of “U” to facilitate suture placement.

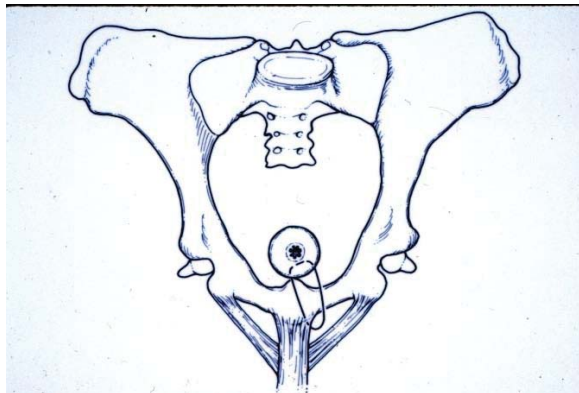


Figure 7: Schematic of suture through ventral cervix and edge of prepubic tendon.

For obese cows achieve caudal epidural anesthesia and clip and anesthetize the right paralumbar fossa for aseptic surgery. After cleansing the vagina introduce a rigid jointed mare catheter into the urethra so that this structure is readily identifiable during the surgical procedure. An assistant surgeon makes a routine laparotomy incision in the caudal right flank.

Using doubled 0.6 mm nonabsorbable suture attached to a large half circle or “U” shaped needle one surgeon enters the vagina and two to four centimeters lateral to the ventral midline introduce the suture needle into the abdominal cavity to the assistant surgeon who has entered the abdomen via routine standing right flank laparotomy. The surgeon in the abdomen passes the suture needle under the edge of the prepubic tendon taking care to verify that the urethra is not compromised by the suture. The abdominal surgeon then passes the needle back into the vagina two to four centimeters contralateral to the original suture point. The surgeon in the vagina passes the suture needle through the ventral one-third of the cervix avoiding penetrating the lumen with the suture. This surgeon in the vagina then applies sufficient tension to seat the cervix against the vaginal floor. The surgeon in the abdominal cavity ensures that that the urethra or intestine is not compromised by the suture. Remove the urinary catheter and close the flank incision in routine manner.

This procedure has been performed in over 25 embryo donor females referred to the Auburn University Large Animal Teaching Hospital during the past 10 years. The referring veterinarians who provide embryo transfer services for these clients report that passage of insemination pipettes and Foley catheters for uterine lavage is more difficult than normal cows but that repeated embryo production may still be possible following this procedure.

^a LigaSure, Valleylab Inc., Boulder, Colorado, USA

^b Double-grip umbilical cord clamp, Hollister Inc., Libertyville, IL.