Laparoscopic Ovariectomy in Mares by Using Electrocautery

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Ovariectomy in mares can be successfully performed by using a laparoscopic electrosurgical unit. This technique is minimally invasive, can be performed efficiently, and provides excellent homeostasis of the mesovarium. Authors' address: Dept. of Large Animal Surgery and Medicine, College of Veterinary Medicine, Auburn University, AL 36849-5522. © 1998 AAEP.

1. Introduction
Indications for ovariectomy in mares include prevention of pregnancy and estrous behavior, treatment of ovarian pathology, and the provision of jump females for semen collection.1,2 Laparoscopic techniques for ovariectomy in the mare have been described, with techniques adapted for both the standing3,4 and dorsally recumbent patient.1 Advantages of laparoscopic ovariectomy include decreased patient morbidity, smaller incisions, and excellent visualization and manipulation of structures that are difficult to exteriorize from the abdominal cavity. The techniques are generally minimally invasive.1,3,4 We describe a laparoscopic technique for ovariectomy in mares, which provides excellent homeostasis of the mesovarium and can be performed easily and efficiently in the standing mare.

2. Materials and Methods
Laparoscopic ovariectomy was performed in five adult mares of varying age and breed. Feed was withheld for a minimum of 12 h before surgery to reduce the volume of intestinal contents. Mares were sedated with detomidine hydrochloride before they were placed in stocks. Both paralumbar fossa were clipped and the abdominal wall at the sites of the portals were infiltrated with 10–20 ml of 2% mepivacaine. The paralumbar fossae were prepped with a povidone-iodine scrub and draped. The abdomen was inflated in two mares through a teat cannula inserted through the ventral abdomen. In the three other mares, abdominal insufflation was performed by using a Verres type of needle after a 10-mm incision was made dorsal to the crus of the internal abdominal muscle, at an equal distance from the tuber coxae and last rib. A 10-mm trocar cannula unit was inserted through the paralumbar fossa in a caudal direction. The trocar was removed, and the laparoscope was inserted to locate the ipsilateral ovary. The skin incision for the second portal was made 2–4 cm caudal to the last rib and 8–10 cm ventral to the scope portal. The skin incision for the third portal was made 6–8 cm caudal to the second portal and 8–10 cm ventral to the scope portal. Trocar cannula units were then inserted through the second and third portals. Laparoscopic atraumatic grasping forceps were inserted through the cranial portal to provide traction on the ovary.
while a long bitch catheter was inserted through the third portal. A long spinal needle was passed through the bitch catheter, and the mesovarium was infiltrated with 10–15 ml of 2% mepivacaine. The bitch catheter was removed and a bipolar electrosurgical instrument was inserted. With tension on the ovary, the bipolar electrosurgical instrument was placed across the tubal membrane, oviduct, and proper ligament of the ovary. Once this area was coagulated, the atraumatic forceps were removed and replaced with laparoscopic scissors. The bipolar electrosurgical instrument was then positioned across the cranial portion of the mesovarium. After an area was cauterized, the laparoscopic scissors transected the mesovarium below the site that was cauterized. This series of steps was repeated until the cautery unit reached the level of the initial cauterization of the tubal membrane, oviduct, and proper ligament of the ovary. At this point, the bipolar electrosurgical instrument was replaced with atraumatic forceps to grasp the ovary. The laparoscopic scissors were used to transect the tubal membrane, oviduct, proper ligament of the ovary, and the remaining portion of mesovarium.

The skin incision of the second portal was enlarged to 6–8 cm, and by initial sharp dissection, followed by blunt separation of the underlying musculature, the ovary was exteriorized. The mesovarium was observed for hemorrhage before the laparoscope was removed. The external sheath of the external abdominal oblique muscle was apposed with 2-0 polyglycolic acid, and the skin was closed with 2-0 polypropylene. The contralateral ovary was located, cauterized, transected, and removed in similar fashion through the opposite paralumbar fossa.

3. Results
The standing approach eliminated the risks associated with general anesthesia and allowed excellent exposure of the mesovarium and ovaries in all mares. The bipolar electrosurgical unit provided excellent homeostasis of the transected mesovarium. One mare was in estrus at the time of the procedure. The mean surgical time (insertion of the laparoscope to incision closure) for unilateral ovariectomy was approximately 25 min (the range was 15–65 min). Two mares were euthanized after the procedure for reasons unrelated to the ovariectomy procedure. The three other mares showed no problems postoperatively and are presently used as jump mares.

4. Discussion
The bipolar electrosurgical instrumentation appears to be a safe method for ovariectomy in mares. If hemorrhage was encountered during the procedure, it was adequately controlled by replacement of the electrocautery unit. This report addresses another potential advantage of the laparoscopic electrocautery unit, i.e., the ability to control hemorrhage from either a bleeding ovarian pedicle or spermatic cord. We have used this technique successfully to control hemorrhage from a mesovarium following ligature slippage in another mare. Laparoscopic ovariectomy by electrocautery appears to offer a safe and technically easy and efficient approach to ovariectomy in mares.

References