Comparison of Laparoscopic and Conventional Cryptorchidectomy on Rate of Intra-Operative and Postoperative Complications, Length of Surgery and Anesthesia, and Hospital Stay

Nicola Cribb, MA, Vet MB, DVSc, Diplomate ACVS*; Judith Koenig, Dr Med Vet, DVSc, Diplomate ACVS, ECVS; and Ulrike Sorge, Dr Med Vet, MSc, PhD, Diplomate ACVPM

Horses undergoing laparoscopy for cryptorchidism had increased anesthesia and surgery time and more intra-operative and postoperative complications. Further work is needed to assess the relative invasiveness of the procedures. Authors' address: Department of Clinical Studies, Ontario Veterinary College, University of Guelph, Guelph, ON, Canada N1G 2W1; e-mail: ncribb@uoguelph.ca. *Corresponding and presenting author. © 2013 AAEP.

1. Introduction
Advantages of laparoscopy include superior visualization, less surgical morbidity, and faster return to work. Disadvantages include expense of equipment and familiarity with techniques. To our knowledge, no previous study has compared intra-operative and postoperative surgical parameters between conventional surgery and its laparoscopic equivalent in horses.

The objective was to perform a case-control study to determine any differences in intra-operative and postoperative complications associated with laparoscopic cryptorchidectomy compared with conventional surgery and if surgery time, anesthesia time, and length of hospital stay are different.

2. Materials and Methods
Thirty horses that underwent laparoscopic cryptorchidectomy were matched with 30 control horses that had open conventional surgery. Horses were matched according to history of previous surgery, location of testicles, and type of closure after removal of scrotal testicles. Length of surgery time, anesthesia time, duration of hospital stay, and intra-operative and postoperative complications were compared.

3. Results
Significantly more postoperative complications were encountered in horses undergoing laparoscopy ($P = 0.03$), and a tendency for more intraoperative complications was noted ($P = 0.1$). Horses that had laparoscopic surgery had a significantly longer anesthesia time ($P < 0.01$) and surgery time ($P < 0.01$). No statistically significant difference was seen for the duration of hospitalization ($P = 0.4$).

4. Discussion
The advantages of laparoscopy may not always outweigh the disadvantages in horses requiring surgery for cryptorchidism. Further work is required to better determine the relative invasiveness of the two procedures.