

Endoscopic Ovariectomy of Exotic Mammals Using a Three-Port Approach



Stephen J. Divers, BSc(Hons), BVetMed, DZooMed,
DipECZM (Herpetology, Zoo Health Management), DACZM, FRCVS

KEYWORDS

• Mammal • Laparoscopy • Ovariectomy • Sterilization

KEY POINTS

- Laparoscopic ovariectomy should be considered the sterilization technique of choice for zoologic mammals.
- Knowledge of species-specific anatomy is essential because herbivores and omnivores have more extensive, obstructive gastrointestinal systems compared with dogs and other simple monogastrics.
- A three-port approach offers greatest application and flexibility, with fewer complications.

INTRODUCTION

With more than 10 million pet rabbits (*Oryctolagus cuniculus*), ferrets (*Mustela putorius furo*), and rodents (order Rodentia) in the United States, these exotic mammals represent the third largest group of companion mammals (behind dogs and cats).¹ In addition to these small common species, the zoologic practitioner may also be called on to sterilize exotic felids, canids, ursids, suids, and primates. The current (best practice) sterilization recommendation for dogs and cats is ovariectomy, without the need for hysterectomy.^{2–4} Indeed, ovariohysterectomy is technically more complicated, time consuming, and is probably associated with greater morbidity (larger incision, more intraoperative trauma, increased discomfort) compared with ovariectomy.² Furthermore, despite the increased demands of equipment and personnel, laparoscopic ovariectomy is now the surgical technique of choice in the dog because of reduced postoperative pain.⁵ For a detailed discussion of standard methodology the reader is referred to the laparoscopy literature, because only exotic mammal specifics are highlighted here.^{6–8} Laparoscopic techniques including ovariectomy have been previously described for several zoologic species including rabbits, pigs, bears, lions, and

The author has nothing to disclose.

Department of Small Animal Medicine and Surgery, College of Veterinary Medicine, University of Georgia, 2200 College Station Road, Athens, GA 30602, USA

E-mail address: sdivers@uga.edu

Vet Clin Exot Anim 18 (2015) 401–415

<http://dx.doi.org/10.1016/j.cvex.2015.05.005>

vetexotic.theclinics.com

1094-9194/15/\$ – see front matter © 2015 Elsevier Inc. All rights reserved.

tigers.^{9–15} In general, the author has been particularly impressed with the faster recovery and return to normal behaviors following laparoscopic ovariectomy versus traditional laparotomy in these exotic species.

There are a variety of laparoscopic techniques available, specifically one-, two-, and three-port approaches to the abdomen. In the dog, the two-port technique has been preferred because of minor reductions in postoperative pain, and shorter surgery times compared with single-port technique (Table 1). However, this should be considered in light of the species. The dog is a simple monogastric, with the stomach the largest part of the alimentary canal. Therefore fasting and reducing the size of the gastrointestinal tract is practical in dogs, and the improved visualization permits the use of fewer ports and instruments. The same can be argued for zoologic carnivores including mustelids, felids, canids, and probably most ursids. However, it is virtually impossible to significantly reduce the gastrointestinal volume of herbivores, such as rabbits, and still difficult in many omnivores, such as pigs. Even with extensive fasting the intestinal tract remains a significant surgical obstruction. However, the use of a three-port approach to the abdomen of herbivores and omnivores permits the use of additional instruments to help retract visceral structures and aid localization of the ovaries. In at least two situations the author has witnessed (rabbit and pig), it proved impossible to identify at least one ovary using a two-port technique and conversion to a three-port or laparotomy approach was required.

Another disadvantage of the two-port system is the need to extend the ventral midline clip far laterally up the body wall (to secure the ovary). This may be considered a significant cosmetic issue for a display animal. Finally, the three-port technique offers wider application in practice. The two-port technique is really only useful for routine ovariectomy in simple monogastrics, and in situations that require greater tissue manipulation, a three-port approach is required. Therefore, performing routine ovariectomy in all species using a three-port approach creates a skill set that is transferable between species, and for many other nonroutine clinical situations. Given the variability in species anatomy that zoologic practitioners face, the development of a skill that has wider application is likely to result in more frequent use and improved surgical competency.

Uterine adenocarcinoma is related to reproductive hormones and is the leading neoplasia of female rabbits.¹⁶ Therefore, concerns might exist regarding the development of neoplasia despite ovariectomy. The author is unaware of any evidence regarding the development of uterine cancer following ovariectomy; however, it is possible for microscopic neoplasms or precancerous cells to be present at the time of ovariectomy in mature animals, which further develop following ovariectomy. Such cases do not represent a failure of ovariectomy to prevent neoplasia, but rather a failure to identify pre-existing neoplasia at the time of ovariectomy. The author's own

Table 1

Comparison between one-, two-, and three-port laparoscopic ovariectomy techniques in the dog

Parameter	Single-Port	Two-Port	Three-Port
Surgery time	24–36 min	14–22 min	16–22 min
Postoperative pain scores (low 0–high 18)	2 (0–6)	1 (0–5)	3 (0–8)
Owner comfort scores (1 worst pain–10 normal comfort)	8.5	10	8

Data from Case JB, Marvel SJ, Boscan P, et al. Surgical time and severity of postoperative pain in dogs undergoing laparoscopic ovariectomy with one, two, or three instrument cannulas. *J Am Vet Med Assoc* 2011;239(2):203–8.

Download English Version:

<https://daneshyari.com/en/article/2412917>

Download Persian Version:

<https://daneshyari.com/article/2412917>

[Daneshyari.com](https://daneshyari.com)