

## CUVS CLINICAL BRIEF

### Ovariectomy or Ovariohysterectomy?

Historically, ovariectomy (OVE) has been the sterilization procedure of choice in Europe, while ovariohysterectomy (OVH) is commonly practiced in the United States. As laparoscopic surgery has become more widely available for small animal patients, veterinarians have re-examined the advantages and disadvantages of OVE and OVH for sterilization of female small animals.

#### Indications for OVE and OVH

Although both procedures are effective in preventing pregnancy and treating diseases influenced by ovarian hormones, only OVE is technically necessary to achieve the desired results. Removal of the uterus is extraneous from a medical standpoint for such hormone-mediated indications for removal of the ovaries, including ovarian tumors, vaginal hyperplasia/prolapse, regulation of endocrine diseases, and reduction in the incidence of mammary tumors. OVH is needed to treat (but not prevent) diseases of the uterus, including pyometra (Fig 1), uterine torsion/prolapse, and uterine tumors.

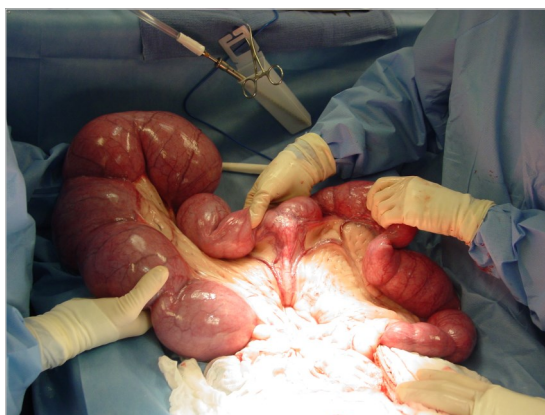


Figure 1: Pyometra in an intact female dog.

#### Surgical Complications and Morbidity

Technical complications are similar between OVE and OVH, including incisional complications, hemorrhage, and ovarian remnant syndrome. Although proximal ureteral ligation at the site of ovarian pedicle ligation is a risk with both procedures, distal ureteral ligation is a risk only with OVH at the site of uterine body ligation.

Historically, perceived benefits of OVE compared to OVH included a smaller surgical incision and less intra-abdominal tissue trauma, presumably resulting in less surgical time and pain for the patient. However, a recent randomized clinical trial comparing OVE and OVH through a traditional open surgical approach found that although surgical incision length was longer for OVH than OVE, surgical time and post-operative pain scores were not different between groups.

#### Long Term Complications: Pyometra, Incontinence, Uterine Tumors

Because pyometra (including stump pyometra) is a hormone-mediated disease, it can only occur in the presence of ovarian tissue, either a complete ovary or an ovarian remnant. Studies of dogs undergoing both OVE and OVH confirm that pyometra does not occur with complete ovary removal.

The most common cause of urinary incontinence in spayed dogs is urethral sphincter mechanism incompetence (USMI). USMI is due primarily to the absence of estrogen, so it is not surprising that long-term studies have found similar rates of incontinence in dogs following OVE and OVH.

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## CUVS CLINICAL BRIEF — Ovariectomy or Ovariohysterectomy?...continued

Literature examining uterine tumors in dogs and cats is surprisingly limited. Most uterine tumors in dogs are leiomyomas, with fewer leiomyosarcomas. However, even leiomyomas can require moderately invasive surgical excision when they occur in the uterine body and cause obstruction of the adjacent colon within the pelvic canal. In cats, uterine tumors are most commonly adenocarcinomas arising from the endometrium and have a high rate of metastasis. Uterine tumors reported in dogs and cats occur in intact animals, animals with an ovarian remnant, or animals receiving exogenous hormone therapy. Studies examining the incidence of uterine in tumors following OVE are lacking. If uterine tumors, like other diseases of the uterus, are in fact hormone-mediated, as they appear to be from the available literature, then the incidence of uterine tumors following OVE should be low (theoretically zero).

### Summary

OVE is all that is necessary to prevent pregnancy and hormone-mediated diseases of the ovaries and uterus. Surgical complications and morbidity are similar for OVE and OVH. The risk of long-term complications, such as pyometra and urinary incontinence, are also similar between the two procedures. For open procedures, either OVE or OVH is appropriate for sterilization of female cats and dogs. For laparoscopic procedures, OVE is preferred over OVH because laparoscopic OVE is technically simpler and maximizes the benefits of a minimally invasive approach. Additional studies are needed to determine the incidence of uterine tumors following OVE.

### References

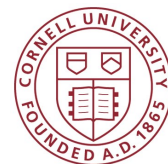
1. DeTora M, McCarthy RJ. Ovariohysterectomy versus ovariectomy for elective sterilization of female dogs and cats: is removal of the uterus necessary? *J Am Vet Med Assoc* 2011; 239: 1409-1412.
2. Miller MA, Ramos-Vara JA, Dickerson Mf, et al. Uterine neoplasia in 13 cats. *J Vet Diagn Invest* 2003; 15: 575-522.
3. Peeters ME, Kirpensteijn J. Comparison of surgical variables and short-term postoperative complications in healthy dogs undergoing ovariohysterectomy or ovariectomy. *J Am Vet Med Assoc* 2011; 238: 189-194.
4. Van Goethem B, Schaeffers-Okkens A, et al. Making a rational choice between ovariectomy and ovariohysterectomy in the dog: a discussion of the benefits of either technique. *Vet Surg* 2006; 35: 136-143.



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