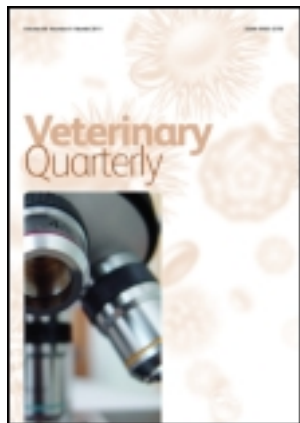


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## CASE REPORT

### Pyometra in a six-month-old nulliparous golden hamster (*Mesocricetus auratus*) treated with aglepristone

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A six-month-old nulliparous, regularly cycling female golden hamster (or Syrian hamster [*Mesocricetus auratus*]) was admitted because of a continuous whitish and bad smelling discharge from the vulva, as observed by the owners two days after the end of the last estrus.

The history revealed that the animal was kept together with two other male hamsters in separate cages, thereby preventing mating. Body weight was measured on a regular daily basis (always at 8 a.m.) by the owners and ranged from 152 to 156 g. However, it had increased to about 160 g on the day before admission. The first estrous was seen at three months of age, whereas regular estrous behavior had been observed repeatedly every four–five days. The owners reported a minor reduction in food intake and slight polydipsia.

At clinical examination, the hamster was active and in a good body condition. The gynecological exam revealed a swollen vulva and the presence of mucopurulent discharge. Gentle transabdominal palpation (Bishop 2002) of the uterus led to small discharge of exudate from the vulva immediately smeared and stained with Hemacolor<sup>®</sup> (Merck Chemicals, Darmstadt, Germany). Microscopic examination of the discharge showed the presence of mucopurulent exudate with segmented neutrophils (Figure 1). The owners approved ultrasound examination of the urogenital tract by using a multi-frequency linear probe array (7.5–10 MHz)(MYLab 30 Esaote, Genova, Italy). With the hamster placed in dorsal recumbency, the uterine body and both horns appeared to be dilated with a maximum diameter of 9 mm and containing heterogenic fluid presenting flocculation (Figure 2). The endometrium was thickened (maximum thickness 4 mm compared to 2 mm being the upper limit of reference range) and hyperechoic.

Based on history, clinical signs, cytological, and ultrasonographic findings, a diagnosis of pyometra was conducted (Bishop 2002; Donnelly 2004;

Orcutt 2005; McKeon et al. 2011). Although ovariohysterectomy would have been the best and definitive treatment option, the owners refused such and requested an alternative treatment.

In dogs, a successful alternative to ovariohysterectomy is aglepristone administration with no recognized side effects (Fieni 2006). Although the pathogenesis of pyometra in the current case was unknown and considering also the satisfactory health status of the patient, aglepristone treatment was suggested to the owners. A signed informed consent form was obtained from the owners for treatment with aglepristone, a selective progesterone receptor antagonist. Due to the lack of protocols for aglepristone (Alizin<sup>®</sup>, Virbac, Milano, Italy) administration in hamsters, an empiric dose of 20 mg/kg BW was chosen. The drug was injected subcutaneously on the day of diagnosis and 24 hours later similar to the protocol reported for dogs (Fieni 2006). An oral broad-spectrum antibiotic therapy was also started with marbofloxacin (Marbocyl, Vétoquinol, Bertinoro, Italy) prescribed at a dosage of 2 mg/kg BW every 24 hours for 10 days.

The following day, prior to the second aglepristone injection, a clinical examination showed that the clinical status of the patient was unchanged. Furthermore, the owners reported no changes, except for a slight dysorexia and reduction of activity. As a consequence, the second dose of aglepristone was administered. The day after the second dose of aglepristone, the owners reported the hamster had restarted normal eating and also showed a restored interest in playing with a wheel. No vulvar discharge was noted, whereas the monitoring of body weight evidenced a loss of 15 g. A clinical check on the seventh day after the second dose of aglepristone showed a marked improvement of health status with body weight stabilized at 152 g. A repeated ultrasound examination of the abdomen revealed the absence of fluids within the lumen of the horns and body of the

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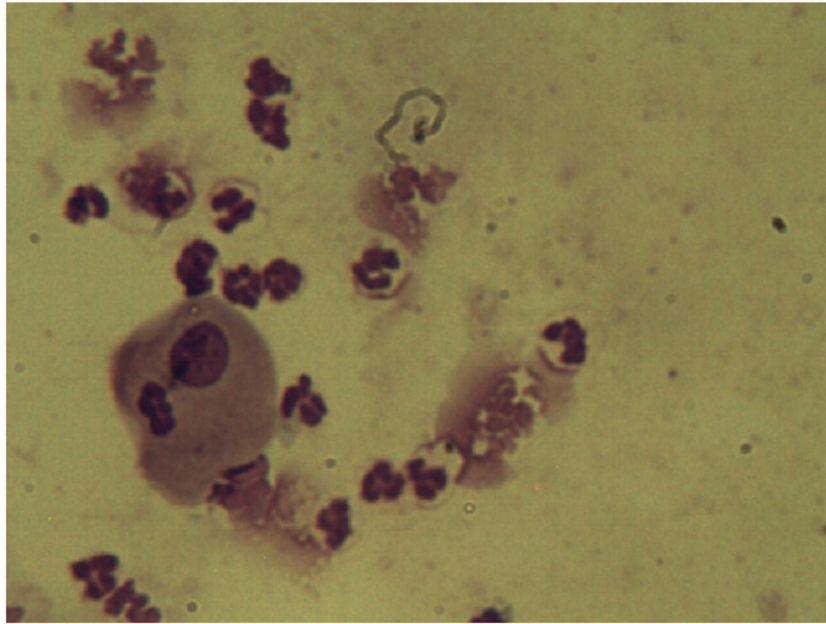


Figure 1. Smear of vulvar discharge (Hemacolor staining): segmented neutrophils are observed within the mucopurulent exudate.

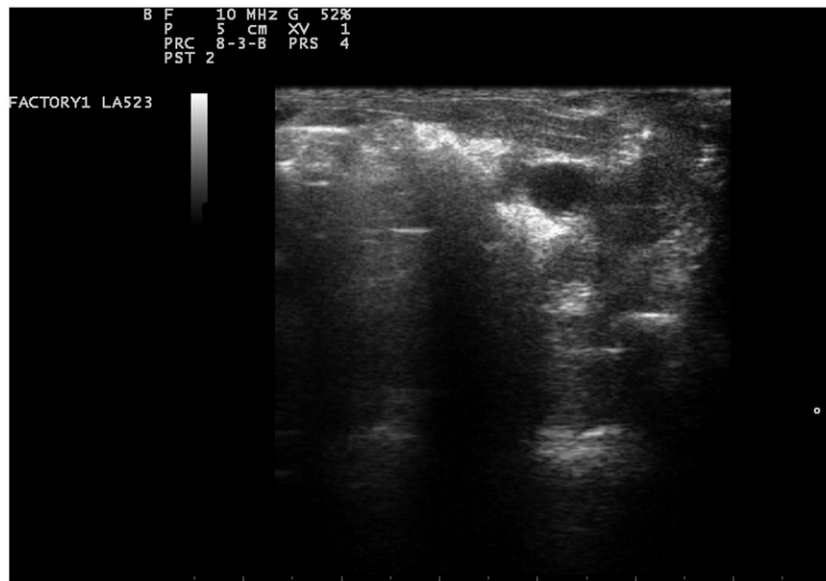


Figure 2. Ultrasonographic examination of the uterine body and horns (dorsal recumbency, 10 MHz multi-frequency linear probe array): uterine body and horns dilated (maximum diameter 9 mm) containing heterogenic fluid presenting flocculation. Thickened (maximum thickness 4 mm compared to 2 mm being the upper limit of reference range) and hyperechoic endometrium is visible.

uterus, while the endometrium was still thickened, as illustrated by a maximum thickness of 4 mm. In addition, a cystic endometrium was observed. Based on these findings, aglepristone treatment was therefore continued at day 8 by a further administration of 20 mg/kg BW subcutaneously. As aglepristone in dogs is associated with an open cervix, marbofloxacin therapy was also continued in order to avoid possible ascending uterine infections. On day 14, the patient was healthy and the ultrasound examination revealed a

reduction of the endometrial layer of the uterine wall with thickness still slightly elevated (maximum 3 mm). The cystic intra-wall structures were not detectable anymore (Figure 3). A supplementary fourth aglepristone injection was administered subcutaneously on day 15 to allow complete uterine involution. Two months after the last treatment, the health status of the patient was optimal, her body weight was stabilized and estrous behavior was regularly observed again. The long-term follow-up revealed that the hamster

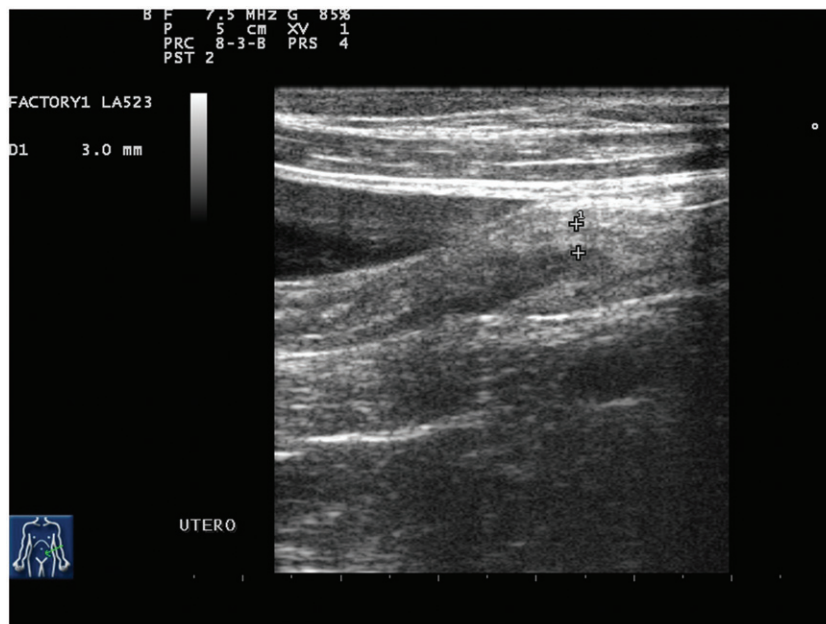


Figure 3. Ultrasonographic examination on day 14 (dorsal recumbency, 7.5 MHz multi-frequency linear probe array): reduction of the thickness of the endometrial layer of the uterine wall (maximum thickness 3 mm) and the absence of cystic intra-wall structures.

remained healthy and, although estrous behavior was regularly observed, the owners did not allow the hamster to mate, so that exact information about fertility was not available.

Pyometra is a common disease of the uterus in dogs. In the hamster, pyometra if not promptly treated, can result in death (Bishop 2002; Donnelly 2004; Orcutt 2005). Ovariohysterectomy seems to be the most appropriate option for the definitive treatment of pyometra in the hamster (Bishop 2002; Donnelly 2004; Fieni 2006; Capello 2011). Contrary to the dog, the role of progesterone in the etiopathogenesis of pyometra in the hamster is not known. To the authors' knowledge, the efficacy of aglepristone has not been tested in the hamster before, although it might represent an interesting alternative to surgical treatment. As the owners were reluctant to ovariohysterectomy, the present case was "empirically" treated with aglepristone. Aglepristone treatment combined with antibiotic administration turned out to be effective in a hamster with pyometra. As no side effects were observed, treatment was deemed safe also considering the long-term stability as illustrated by the observed regular estrous behavior without recurrence of uterine disease.

This case report suggests that aglepristone treatment can be considered as an alternative therapy to ovariohysterectomy also in the hamster similar to other species. Aglepristone might be suggested for high-risk

anesthetic patients or for patients in which fertility should be maintained. In addition, the quick improvement of the general condition seems to suggest the usefulness of aglepristone administration prior to ovariohysterectomy, as reported in dogs, in order to stabilize the general condition of the patient and to reduce the size of the uterus, thereby minimizing the risk of intra-surgical uterine wall rupture.

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