

Vaginal Leiomyosarcoma in a Dog

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Abstract: This case report describes the clinical presentation and treatment of a vaginal leiomyosarcoma in a 10-year-old mixed-breed hound dog. On clinical examination the vaginal originated, and an irregular, solid mass was detected. Transabdominal ultrasonography revealed no obvious uterine or ovarian mass or fluid. Vaginal mass resection and ovariohysterectomy were planned to cure the animal. The mass was surgically removed and the vaginal mucosa was sutured. Ovariohysterectomy was performed because of the risk of uterine or ovarian metastasis of the vaginal mass. The dog was treated with amoxicillin/clavulanic acid for five days. On histopathologic examination, the mass was diagnosed as a leiomyosarcoma. In conclusion, although vaginal masses are mainly benign, malignant tumors such as leiomyosarcomas can occur in dogs. Differential diagnoses for vaginal neoplasia include vaginal fold prolapse and vaginal polyps. Treatment of leiomyosarcomas should be planned quickly to avoid metastasis to other organs.

Keywords: Dog, Leiomyosarcoma, Vaginal neoplasia

INTRODUCTION

Cancer is a major disease for both humans and pets, and its incidence is increasing day by day. Death due to tumors in dogs is one of the main causes. The most common neoplasm in dogs is that of the digestive tract; neoplasms of the mammary gland, urogenital tract, lymphoid, endocrine and oropharynx are commonly observed in dogs (1). Tumors of the reproductive tract are rare, but vaginal (2.4%) and vulvar (3%) tumors are more common in dogs than other reproductive organs (2).

Transmissible venereal tumors (TVT) are common vaginal tumors worldwide, especially in the large population of stray dogs (3). Smooth muscle tumors (SMT) are also observed in the lower urogenital tract

of dogs (4). Vaginal and vulvar tumors are often benign tumors such as leiomyomas, fibromas and polyps. Malignant tumors of the vagina and vulva include leiomyosarcomas, squamous cell carcinomas, hemangiosarcomas, osteosarcomas and adenocarcinomas (5). Leiomyomas are benign, and leiomyosarcomas are malignant characterized SMT of dogs (4,6). However, leiomyosarcoma of the genital tract is rare in dogs (7,8). This case report describes the clinical presentation and treatment of a vaginal leiomyosarcoma in a mixed-breed hound dog.

CASE PRESENTATION

A 10-year-old female mixed breed hound dog presented to the clinic with a

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vaginal mass that had been present for several weeks. Clinical examination revealed an irregular, solid mass in the vagina (Figure 1.). The dog's vital signs, such as heart rate, respiratory rate and body temperature, were within reference values. The dog was in good physical condition. Transabdominal ultrasound examination (veterinary ultrasound machine, SLE 901, Medelkom Ltd, Lithuania) revealed no obvious uterine or ovarian mass or fluid.



Figure 1. The view of vaginal tumor in a mixed-breed hound dog.

A vaginal mass resection and ovariohysterectomy were planned to cure the animal. The dog was anaesthetized with atropine sulphate, 0.04 mg/kg/S.C., propofol 1%, 5 mg/kg/I.V., and isoflurane 2%. First, the urethral catheter was placed, and the edge of the vaginal mass was determined (Figure 2.).



Figure 2. The urethral catheter placement and the determination of the mass edge.

Episiotomy was not performed due to the accessibility of the mass. The mass was surgically removed, and the vaginal mucosa was sutured (Figure 3.).



Figure 3. The view of surgical site following the resection of the mass.

Ovariohysterectomy was performed due to the risk of uterine or ovarian metastasis of the vaginal mass. The dog was treated with amoxicillin/clavulanic acid (Synulox® 8.75 mg/kg/day, IM, Pfizer, Italy) for five days. In the first postoperative week, the dog recovered without any complications.

The vaginal mass was sent to a laboratory for histopathological examination. On macroscopic diagnosis, 100 gr weighed, 12.5x5x4.5 cm diameters, a solid, white-coloured mass was observed. The cross-section of the mass was also white in colour. Microscopic examination of the mass revealed fusiform and oval cells with hypochromic nucleated anisocytosis and anisonucleosis originating from the smooth muscle tissue. The mass occupied all layers of the vagina, from mucosa to the serosa, without any capsule. Acanthosis and basal cell dysplasia were observed on the sites where the mass was indented. The mass was diagnosed as a leiomyosarcoma.

DISCUSSION and CONCLUSION

Vaginal tumors are usually rare and are observed in older dogs. While TVT usually occurs in sexually active dogs aged 2-10 years, SMT occurs in older dogs (over six years old) (5,6,8). In the present case, the dog was ten years old and the leiomyosarcoma, an SMT, was only discovered a few weeks before presentation to our clinic. The vaginal masses can be mistaken for vaginal prolapse (9). Vaginal prolapse occurs in young, intact dogs, often aged between 1 to 3 years old. During the proestrus or estrus phase or rarely at the end of pregnancy, the edematous vaginal tissue protrudes from the vulvar cleft. The differential diagnosis of vaginal neoplasia from vaginal prolapse is based on clinical examination of the tissue, vaginal cytology, and serum progesterone concentration (10). In this case, the diagnosis of the tumor was made by palpation of the mass. The mass was solid and nodular; it originated from a localized smooth muscle layer of the vagina. The definitive diagnosis was corrected as leiomyosarcoma by histopathological examination.

The treatment of vaginal tumors is surgical resection. Complete resection can be achieved by simple local resection or episiotomy. However, in some cases a more aggressive resection procedure is required (5). In the present case, the tumor was located on the caudal side of the vagina. Palpation and handling of the entire mass were easy. Therefore, surgical resection could be performed without episiotomy.

Leiomyosarcomas rarely observed in the uterus and other genital organs, and metastasis of vaginal neoplasms to other organs and tissues may occur (5,8). Ovariohysterectomy was performed to prevent uterine or ovarian metastasis of the neoplasm in our case.

In conclusion, although the vaginal masses are mainly benign, malignant tumors such as leiomyosarcomas can also occur in dogs. Differential diagnoses for vaginal neoplasia include vaginal fold prolapse and vaginal polyps. Treatment of leiomyosarcomas should be planned quickly to avoid metastasis to other organs.

CONFLICT of INTEREST

There is no conflict of interest between the authors.

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