

## Vulvo-Vaginal Atresia in a Queen With Mammary and Uterine Tumors: Case Report

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**Abstract:** The clinical, preoperative and postoperative findings taken from a case of vulvovaginal atresia in a queen with mammary tumors are reported here. The catheterization of the vulva showed only two small openings in dorsal and ventral commissura regions. During the ultrasonographic examination, uterine masses were observed. For treatment of mammary and uterine tumors, radical mastectomy and ovariohysterectomy were performed. In histopathological examination, mammary tumors and concurrent uterine mass were papillary adeocarcinoma and endometrial polyp, respectively. In this case nulliparity cause of vulval anomaly might be a predisposing factor for mammary and concurrent uterine tumors.

**Key Words:** Congenital anomalies, vulvovaginal atresia, cat.

### Meme ve Uterus Tümörü Bulunan Bir Kedide Vulvo-Vaginal Atresi Olgusu

**Özet:** Bu sunumda meme tümürlü bir kedideki vulvovaginal atresi olgusunun klinik, preoperatif ve postoperatif bulguları verilmiştir. Vulvanın kateterizasyonunda dorsal ve ventral komissurasında olmak üzere iki küçük açıklık olduğu görüldü. Uterusun ultrasonografik muayenesinde ise kitlelere rastladı. Meme ve uterusdaki kitlelerin tedavisi için radikal mastektomi ve ovariohisterektomi operasyonları uygulandı. Histopatolojik incelemede memede papillar adenokarsinoma, uterusda ise endometriyal poliplerin varlığı belirlendi. Bu hastada vulval anomaliye bağlı nulliparite olgusunun meme tümörü ve eş zamanlı endometrial poliplerin oluşumu için predizpoze faktör olabileceği düşünülmektedir.

**Anahtar Sözcükler:** Kongenital anomali, vulvovaginal atresi, kedi.

### Introduction

Congenital abnormalities of the reproductive tract are rare in the queen. Vulval and vaginal atresia may occur separately or simultaneously. Small labia with or without stenosis of the vestibule are observed in the former, whilst stenosis of the vagina is observed in the latter (SAPERSTEIN et al., 1976). Noakes et al. reported that vaginal abnormalities may cause endometrial changes. Also uterine tumors are observed rarely in the cat. Endometrial polyps which are benign uterine tumors are characterised by focal, cystic proliferations of the endometrial glands. When they invade the uterine lumen, they appear as multi-lobular

masses under ultrasonography (GELBERG and McENTEE., 1984).

Although congenital abnormalities and neoplasia of the reproductive tract are seldom, mammary tumors are known to be frequently occurring in the cat. These tumors usually are malignant carcinomas (%80-90) (JOHNSTON et al., 2001).

### Case History

An adult mixed breed stray cat weighing 2.5 kg was presented to Gynecology Clinic of the Faculty of Veterinary Medicine at the Adnan Menderes University, with the complaint of three mammary masses on the right gland chain

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and also one of them was ulcerated. Her body condition and appetite were normal. In the radiographic examination, no pulmonary metastases on ventrodorsal radiographs of the thorax could be detected. However, a mass of 2 cm diameter in right uterine horn was seen from the abdominal ultrasonographic examination. Blood analyses were normal except white blood cell (WBC) count was  $360 \times 10^2/\mu\text{l}$ .

On genital examination, it was seen that the labia vulva were small and fused, allowing two small openings with 2.6 mm and 1 mm in diameter in dorsal and ventral commissura regions, respectively (Figure 1-B). The catheterization of larger dorsal opening (with a cat urinary catheter, 1x130 mm, Kruuse) was permitted to insert in 20 mm from vulva and the connection of the external urethral orifice was also determined. On the other hand, the small ventral opening could not be catheterized (blind ended). The soluble iodine contrast medium (sodium diatrizoate 100 mg/ml, meglumine diatrizoate 660 mg/ml, Urografin®; Schering) via the dorsal opening was given for the examination of the cavities of vagina and vestibule in contrast-radiographic examination (Figure 1-A). The vaginal discharge, perivulvar dermatitis, pruritis and urinary incompetence were not observed during hospitalization.

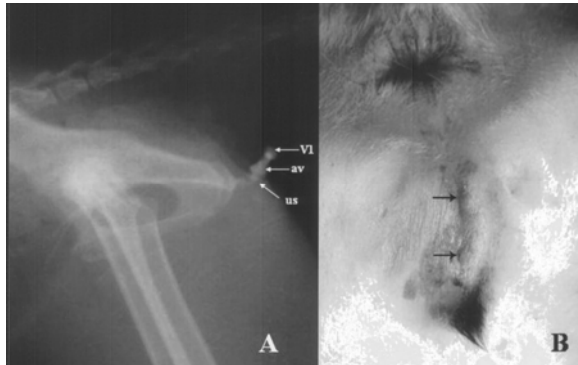


Figure 1.

Contrast-radiograph atretic vagina (A). Catheter could be inserting about 20 mm from dorsal opening to vagina, v-1: Larger dorsal opening of vulva, av: atretic vagina (short and narrow), us: urogenital sinus.

The view of vulva (B). Arrows show openings of the vulva, dorsally and ventrally.

Resim 1.

Atretik vaginanın contrast-radyogafisi (A). Kateter vaginanın dorsal girişinden yaklaşık 20 mm kadar içeri uygulandı. v-1: Vulvanın büyük dorsal açıklığı, av: atretik vagina (kısa ve dar yapıda), us: urogenital sinus.

Vulvanın görünümü (B). Vulvanın dorsal ve vaginal açıklığı oklarla gösterilmiştir

In treatment, firstly all glands on the right side were removed in radical mastectomy. The diameters of tumors which were measured externally with the aid of micrometric calliper were 3.1x4.5, 1.9x2.7, 2.4x3.1 cm (Figure 2). Secondly, ovariohysterectomy was performed for uterine masses. Vulvo and/or vaginoplasty were not performed due to having no problem in urination and also it is being spayed.

## Results and Discussion

Postoperatively, antibacterial therapy was applied with 8.75 mg/kg amoxicillin - clavulanic acid (Synulox®; Pfizer) daily for five days. Urination was normal and her WBC count decreased gradually in five days. According to a report from the Department of Pathology, Adnan Menderes University, on 08/07/2004, protocol number 82/04, histopathological examination of the mammary gland is papillary adenocarcinoma and uterine mass which was detected concurrently are proliferative polyps in the endometrium (Figure 2).

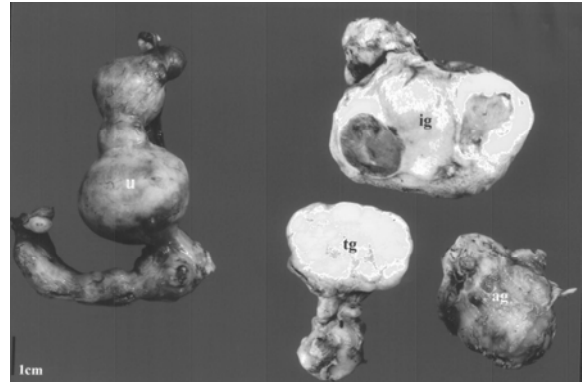


Figure 2.

Appearance of the uterine (u) and mammary tumors of inguinal (ig), thoracic (tg) and abdominal (ag) glands.

Resim 2.

Uterus ve meme tümörlerinin görünümü. İnguinal (ig), torasik (tg) ve abdominal (ab) meme lobları.

In this case, the only larger opening continued cranially and provided for urination. It seemed that neither dorsal nor the ventral openings are suitable for copulation. This is considered to be resulted from the embryonic insufficiency of the canalization of the paramesonephric duct between the end of the Müllerian duct and the urogenital sinus (BLOOM, 1954). Vaginal atresia with transverse septum (NOMURA et al., 1997) and vaginal aplasia (BAINES et al., 1999) are recorded in cat. Although, similar case could not be reported in cat.

Endometrial polyps are reported in domestic queen (GELBERG and McENTEE., 1984), and increase due to nulliparity in elephants (AGNEW et al., 2004), and women (RESLOVA et al., 1999). Also mammary tumors incidence increases in intact female cats (JOHNSTON et al., 2001).

Consequently, nulliparity related to vulval anomaly may be accepted as a predisposing factor for formation of mammary tumors and endometrial polyps in this case.

## References

1. AGNEW DW, MUNSON L, RAMSAY EC. Cystic endometrial hyperplasia in elephants. *Vet. Pathol.*, 2004; 41: 179-83.
2. BAINES SJ, SPEAKMAN AJ, WILLIAMS JM, CHEESEMAN M. Genitourinary dysplasia in a cat. *J. Small Anim.*, 1999; 40: 286-290.
3. BLOOM F. The Genitourinary system, with clinical consideration. In: Bloom, F. Ed. *Pathology of the Dog and Cat*. Illinois, American Veterinary Publication, 327; 1954.
4. GELBERG HB, McENTEE K. Hyperplastic endometrial polyps in the dog and cat. *Vet. Pathol.*, 1984; 21: 570-3.
5. JOHNSTON SD, KUSTIRTZ MG, OLSON PN. Disorders of the mammary glands of the queen. In: Johnston, S.D. Ed. *Canine and Feline Theriogenology*. Philadelphia, W. B. Saunders, 477; 2001.
6. NOAKES DE, PARKINSON TJ, ENGLAND GCW. Infertility in the bitch and queen. In: Noakes DE Ed. *Arthur's Veterinary Reproduction and Obstetrics*. Philadelphia WB Saunders. 660; 2001;
7. NOMURA K, KOREEDA T, KAWATA M, SHIRAIISHI Y. Vaginal atresia with transverse septum in a cat. *J. Vet. Med. Sci.*, 1997; 59: 1045-1048 Agnew, D.W., Munson, L., Ramsay, E.C.: Cystic endometrial hyperplasia in elephants. *Vet. Pathol.*, 2004; 41: 179-83.
8. RESLOVA T, TOSNER J, RESL M, KUGLER R, VAVROVA I. Endometrial polyps. A clinical study of 245 cases. *Arch. Gynecol. Obst.*, 1999; 262: 133-9.
9. SAPERSTEIN G, HARRIS HS, LEIPOLD HW. Congenital defects in domestic cats. *Fel. Pract.*, 1976; 6: 18-43.