

## Case Report / *Olgu Sunumu*

# Uterine papillary adenocarcinoma in a Pit-bull dog

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**Abstract:** The uterus of an 18 month old Pit-bull removed during ovariohysterectomy formed the material of this study. Macroscopically, the uterus was whitish in color and elastic in consistency, the uterine horns were 15 cm long with a 1 cm of diameter. On cut section uterine mucosa showed variable sized cysts and was filled with a yellowish white mucus. Microscopical evaluation demonstrated a proliferation of the glandular component of the endometrium and a migration of these glands into the myometrium. Glands located in both the endometrium and the myometrium formed large cystic structures. The atypical glandular epithelium showed papillary projections into the cystic spaces. The tumor was diagnosed as uterine adenocarcinoma, an extremely rare canine tumor, especially in young dogs.

**Keywords:** Dog, papillary adenocarcinoma, uterus

## Pitbull ırkı bir köpekte uterusu papiller adenokarsinom

**Özet:** Bu çalışmada, Pitbull ırkı, 18 aylık bir köpektan ovariohisterektomi ile alınan uterusu rastlanan papiller adenokarsinom tanımlandı. Makroskopik incelemede, kesit yüzünde sarımsı beyaz renkte mukus bulunan, kistik yapılar içeren, 15 cm uzunluğunda ve 1cm çapında kornu uterileri bulunan uterusun sarımsı renkte ve elastik kıvamda olduğu gözlemlendi. Histopatolojik incelemede ise, endometriyumda bezlerin sayıca arttığı ve miyometriyumda da bu bezlerin bulunduğu dikkat çekti. Hem endometriyum hem de miyometriyumda bulunan bezlerin geniş kistik yapılar şekillendirdiği ve atipik bez epitellerinin papiller uzantılar yaptığı gözlemlendi. Bu çalışmayla köpeklerde oldukça az sayıda rapor edilen uterus adenokarsinomunu 18 aylık bir köpekte tanımlandı.

**Anahtar sözcükler:** Köpek, papiller adenokarsinom, uterus

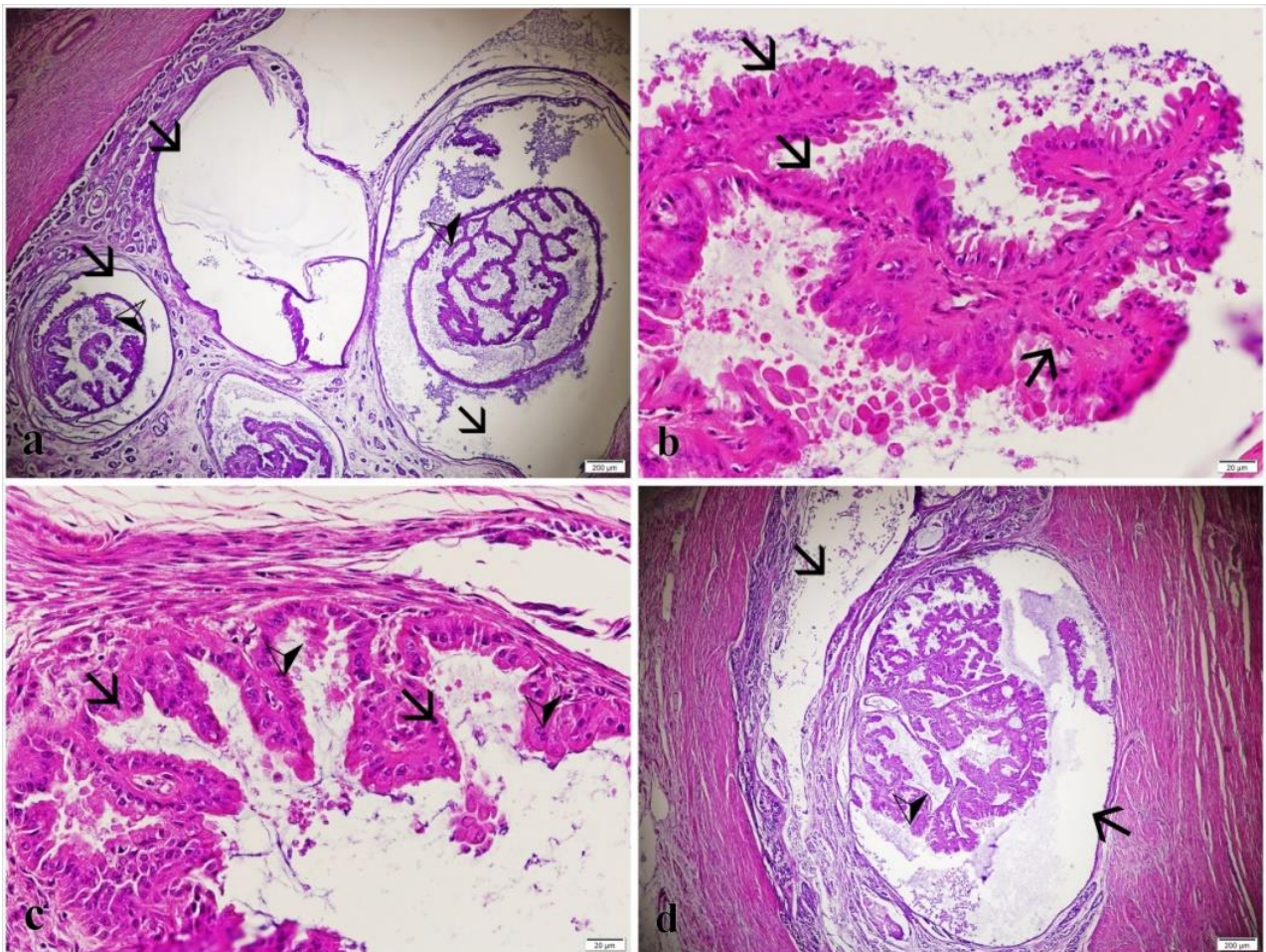
Compared to other genital tract tumors, uterine tumors are less reported. According to a study on canine and feline urogenital tumors, among 36 tumors noted in the female genital system, 14 were found within the ovary, 19 in the vagina and only 3 in the uterus (10). Canine uterine and ovarian tumors are extremely rare and this is thought to be due to surgical castration at early ages (10). Contrary to its prevalence in human, uterine carcinomas are considered truly rare in all domestic animals except cows and rabbits (3). Canine uterine endometrial adenocarcinoma is a very rare malignant tumor arising from the endometrium and specially seen in geriatric dogs (8). It was previously reported in two young dogs; a 2 years old mixed breed dog and a 10 months old Golden Retriever (1, 6). Clinical signs of uterine tumors depend on the size of the tumor and the same clinical signs are also reported in pyometra and mucometra cases according

to some reports (7, 8). The aim of the present study is to investigate the pathomorphological findings of a papillary adenocarcinoma case encountered in the uterus of an 18 month old Pit-bull.

An 18 month old Pit-bull dog formed the material of this study. On the history, the owner reported a drug intervention done by the veterinarian to prevent gestation of the bitch at 6 months old. The owner also stated that until 18 months old, the animal presented no heat sign or any other clinical sign. In order to completely prevent gestation, the owner elected surgical ovariohysterectomy. The uterus removed during surgery was noted to be larger than normal, so it was sent to pathology department for histopathological examination. Grossly, the uterus was whitish in color and elastic in consistency, the uterine horns were 15 cm long with a 1 cm of diameter (Figure 1a). On cut section uterine mucosa showed variable sized



**Figure 1.** Macroscopic view of uterus **a:** The uterus fixed in formalin, whitish in color and elastic in consistency. **b:** On cut section uterine mucosa filled with a yellowish white mucus.



**Figure 2.** Histopathological findings **a:** Several endometrial large cystic structures, varying in size (arrows) and papillary projections (arrowheads), Hematoxylin-Eosin, X200. **b:** Glandular epithelium showing long papillary projections (arrows), Hematoxylin-Eosin, X400. **c:** Epithelial cells with anisonucleosis, anisocytosis (arrowheads) and some mitotic figures (arrows), Hematoxylin-Eosin, X400. **d:** Cystic structures (arrows) and papillary projections (arrowhead) in the myometrium, Hematoxylin-Eosin, X200.

cysts and was filled with a yellowish white mucus (Figure 1b). Tissue samples were fixed in 10 % buffered formalin, embedded in paraffin then the sections were cut at 4 µm and stained with hematoxylin and eosin. On microscopic examination, several large cystic structures, varying in size were revealed in the endometrium (Figure 2a). Glandular epithelium showed long papillary projections resembling tree branches into the cystic spaces (Figure 2b). Epithelial cells forming papillary projections showed anisonucleosis, anisocytosis and some mitotic figures (Figure 2c). The nuclei of tumor cells were pleomorphic, ranging from vesicular to hyperchromatic and presented multiple nucleoli. The cytoplasm of these cells marked variable forms, some were acidophilic, and some were vacuolar in structure. Besides, the endometrial cystic glands and the anaplastic epithelial cells showing papillary projections invaded the myometrium and presented infiltration between the muscle bundles (Figure d).

Uterine tumors are not frequent tumors in domestic animals but are apparently more frequent in cattle when compared to other species (2). Mammary tumors are one of the most common neoplasms in bitches (5). As opposed to mammary tumors, uterine tumors account for only 0.4 % of all canine tumors (1). Of those tumors reported, leiomyomas are the most predominant type accounting for 85–90% and the most encountered malignant uterine tumor is leiomyosarcoma (4). Carcinomas are very rare and only few related reports are found in veterinary literature.

In previously reported cases of uterine adenocarcinoma, an exposition to exogenous pregnancy prevent drug was present but a direct relationship could not be established between the use of pregnancy prevent drugs and the pathogenesis of uterine adenocarcinoma (7, 10). In the present report a chronic use of pregnancy prevent drug was reported until the owner elected ovariohysterectomy as a final choice. We can deduce that, despite the absence of a reasonable contribution of this drug to the carcinogenesis of adenocarcinoma, a possible predisposition can be concluded.

Surgery is still the treatment of choice in canine endometrial carcinomas cases specially if metastases are not present (1, 9). After removal of the uterus, the abdomen should be investigated for any metastatic foci. No studies reported efficacy of radiotherapy and chemotherapy in veterinary cases. However adjunctive chemotherapy should be considered related to the histopathological diagnosis (1). In the case reported here, no metastasis or complications were reported after ovariohysterectomy was performed.

Specially reported in geriatric dogs, uterine adenocarcinoma is extremely rare in young dogs. Only 2 cases of adenocarcinoma in young dogs were reported in the literature, the first was a 2 years old mixed breed dog

reported by Payne-Johnson et al (6) and a 10 months old dog reported by Cave et al (1).

In conclusion, within this study; uterine adenocarcinoma reported in an 18 month old young dog showed that uterine adenocarcinomas, though rare, should be considered in the differential diagnosis of canine uterine lesions of young dogs. The dog presented no oestrus cycle and showed no clinical signs before ovariohysterectomy was performed. The diagnosis was totally based on histopathological findings.

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### Ethical Statement

This study does not present any ethical concerns.

### Conflict of Interest

The authors declared that there is no conflict of interest.

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