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Unilateral Ovarian Mature Teratoma and Hydrometra Case in a Queen

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Abstract

A 3-year-old crossbred cat with the complaint of abdominal distension was brought to Istanbul University Cerrahpaşa, Department of Obstetrics and Gynaecology clinic. Blood sample was evaluated within normal ranges except of mild leucocytosis and increased urea. On ultrasonographic examination a fluid filled uterus and a mass in right ovary were screened. Complete surgical excision was performed and unilateral ovarian mature teratoma and hydrometra were diagnosed. Previous reports about feline teratoma did not state other uterine alterations related to uterine disorders. This case was deemed appropriate to be reported because it was the first case of hydrometra associated with an ovarian teratoma. So we recommend ovariohysterectomy for these kind of cases due to the fluid accumulation within the uterus with ovarian mass formation.
Key Words: Hydrometra, Ovary, Queen, Teratoma

Dişi Bir Kedide Tek Taraflı Ovaryan Mature Teratoma ve Hidrometra Olgusu

Öz

Üç yaşlı melez bir kedi İstanbul Üniversitesi Cerrahpaşa, Doğum ve Jinekoloji Anabilim Dalı kliniğine abdominal genişleme şikayeti ile getirildi. Kan tahlili sonucu orta düzeyde lökositoz ve artmış üre seviyesi dışında normal sınırlarda tespit edildi. Ultrasonografik muayenede içi sıvı dolu uterus ve sağ ovaryumda bir kitle tespit edildi. Kedi üzerinde komple cerrahi ensizyon yapıldı ve unilateral olgun ovaryan teratoma ve hidrometra teşhis edildi. Daha önceki kedi ovaryan teratoma olguları uterustaki rahatsızlığa yönelik bir değişiklikten bahsetmemişti. Bu olgu bir kedide ovaryan teratoma ile birlikte hidrometranında tespit edildiği ilk vaka olması sebebiyle rapor edilmeye uygun görüldü. Dolayısıyla uterus içerisinde sıvı birikimiyle birlikte ovaryumda kitlenin olduğu bu tarz olgularda biz ovariohisterektomiyi öneriyoruz.

Anahtar Kelimeler: Dişi kedi, Hidrometra, Ovaryum, Teratoma

INTRODUCTION

Teratomas are neoplasms composed of pluripotential germ cells as ectodermal, mesodermal, and endodermal origin (1, 2). Ectodermal structures such as hair, squamous epithelium, nerve cells; mesodermal structures such as osseous, cartilaginous, adipose and fibrous tissues, smooth and striated muscles, teeth can be found within the tumoral mass (3, 4). Ovarian germ cell tumors including dysgerminomas and teratomas are unusual in cats, which are mostly reported in horses, pigs, dogs, cattle, rodents, humans, domestic fowl, wood-chucks (2, 5). There are two teratoma cases representing cats' ovary are available in the literature (1, 6). Ovarian teratomas can be classified as mature cystic teratomas, immature teratomas and monodermal teratomas. Among them the most common tumors are mature cystic teratomas with regard to have mature tissue of ectodermal, mesodermal and endodermal origin (7). Mature cystic teratomas contain cystic components (8). Their origin is from a single germ cell after the first meiotic division and they are asymptomatic (8). Their macroscopic appearance is characteristically filled with sebaceous liquid that can contain hair follicles, skin glands, muscle and other tissues within the wall of the tumoral mass (9, 10). Although most of the mature teratomas are asymptomatic, they can be diagnosed by ultrasonography and can be complicated as the tumors may show different appearances according to their inner contents (8, 11).

Hydrometra and mucometra can be defined as the accumulation of non-inflammatory, clear to slightly cloudy, watery to viscid, sterile fluid in the uterine lumen which can be often considered together (12, 13). The difference of these two entities can be arising from the degree of hydration of the mucin (12, 13). Congenital abnormalities, neoplasia, inflammation and scarring or accidental ligation, impotency of the vulva, vagina, cervix or uterus can cause the formation of hydrometra and mucometra with the fluid accumulation in the uterine lumen as high as 500 ml that leads thinning of the uterine wall in the cat (12, 14). Diagnosing of mucometra, hydrometra and pyometra can be based on clinical signs, history, and physical examination findings. Cytologic examination, complete blood count, serum chemistry, urinalysis, and ultrasonography can support the differential diagnosis to distinguish of these entities (15). Mucometra, hydrometra or hematometra can be observed with cystic endometrial hyperplasia, with accumulates sterile intrauterine fluid (16).

Previous feline teratoma reports did not state uterine disorders. Thus this is the first report of ovarian teratoma accompanying with hydrometra in a cat being an unusual case that is why considered as valuable to report.

CASE HISTORY

A 3-year-old crossbred cat was brought to Istanbul University, Department of Obstetrics and Gynecology clinic with the complaint of abdominal distension. According to anamnesis, a pregnancy was not obtained, although the cat was mated 9 months ago. The cat's apatite was normal and any discharge from vagina was not seen by the owner. Except from mild leucocytosis and increased urea level, all blood parameters were in the physiological ranges as shown in (Table 1). A distended and fluid filled uterus and a mass was screened by ultrasonographic examination. An iv administration of 6 mg/kg propofol (Pofol; İlsan Hexal, 20 ml/ampul) and 3-4 % isoflurane (Forane; Abbott, 100 ml/flc.) was applied for induction and maintenance of anesthesia for surgical approach, respectively. On surgical exploration, huge uterine horns filled with fluid and a mass on the right ovary, which were also detected in sonography, were confirmed. Fluid sample was collected from the uterus aseptically for bacteriological examination. However, bacterial growth was not obtained in the examination. Dissected uterus and ovaries were taken to the histopathological evaluation to define the pathological changes (Figure 1A, 1B, 1C). The cream colored mass which was sized as 2.5x2.1x1.8 cm had cystic consistency on the incision surface with solid areas. For histological evaluation, tumor tissues were fixed in 10 % neutral buffered formalin, processed routinely, sectioned at 5 µm and stained with hematoxylin and eosin (H&E). The slides were coverslipped and observed under a light microscope. Cytological smears were prepared from the uterine fluid which was slightly viscous and clear and the slides were stained with May Grunwald Giemsa (MGG). Cytological evaluation of the uterine fluid revealed acellular debris and a few degenerative epithelial cells. Cytological findings were consistent with hydrometra. Histopathological evaluation of the mass that was thought to originate from the ovarian tissue, revealed hair follicles, microcysts including necrotic areas (Fig 2A, 2B) and mesenchymal tissue components showing endochondral ossification areas (Fig 2C, 2D), which was associated with mature teratoma (dermoid cyst). There were some areas of proliferative inflammation with numerous macrophages against keratin particles. There was no evidence of a residual ovarian tissue in the slides that were examined. Also, any findings of malignancy were observed. Twenty mg/kg Ceftriaxone disodium (Novosef; Eczacıbaşı, 250 mg /flc.), B-complex and C vitamin (Epargriseovit; Deva) im were prescribed to the cat for a week after the surgery.

Figure 1A: Ovarian mature teratoma, right ovary, **Figure 1B:** Left ovary (black circular), **Figure 1C:** Uterine fluid accumulation, hydrometra.

Şekil 1A: Ovaryan olgun teratoma, sağ ovarium, Şekil 1B: Sol ovaryum (siyah yuvarlak), Şekil 1C: Uterusta sıvı birikimi, hidrometra.

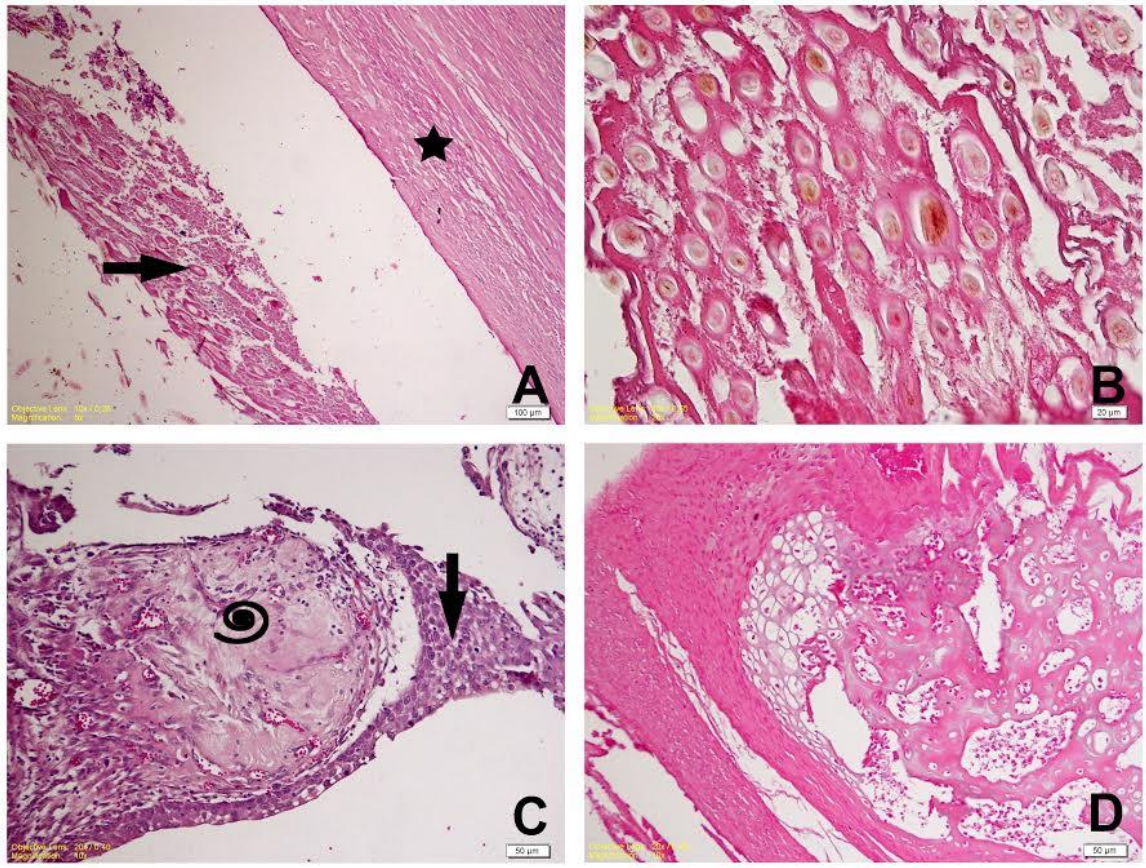

Figure 2A: Necrotic debris and hair follicles (arrow) in the cystic lumen, cyst wall (star), Bar = 100 µm, H&E stain, **Figure 2B:** Hair follicles, Bar = 20 µm, H&E stain, **Figure 2C:** Mesenchymal tissue involving hyalinization (spiral), proliferating mesenchymal cells (arrow). Bar = 50 µm, H&E stain, **Figure 2D:** Mesenchymal tissue involving endochondral ossification areas. Bar = 50 µm, H&E stain.

Şekil 2A: Kistik lümen içinde nekroik döküntü ve saç folliküleri (ok), kistik duvar (yıldız), Bar = 100 µm, H&E boyası, **Şekil 2B:** Saç folliküleri, Bar = 20 µm, H&E boyası, **Şekil 2C:** Hyalunizasyonu içeren mezenşimal doku (spiral), proliferatif mezenşimal hücreler (ok), Bar = 50 µm, H&E boyası, **Şekil 2D:** Endokondral kemikleşme alanlarını içeren mezenkimal doku. Bar = 50 µm, H&E boyası.

Table 1. The blood parameters of the cat

Tablo 1. Kedinin kan parametreleri

Test	Results	Reference Range
RBC	8.5 uL	6-10
HGB	11.7 g/dL	9.5-15.0
HCT	38 %	29.0-45.0
WBC	21.4x10^9/L	5.5 -19.5 **(H)**
PLT	183x1000/uL	150-500
MCV	45	41-54
MCH	14	13.3-17.5 pg
MCHC	31 g/dL	31-36
Glucose	128	70-150 mg/dL
Urea	40	15-34 mg/dL **(H)**
Creatine	0.8	0.8-2.3 mg/dL
AST	37	5-55 U/L
ALT	33	28-75 U/L

DISCUSSION and CONCLUSION

Ovarian germ-cell tumour; dysgerminomas and teratomas are unusual in domestic animals especially in cats (1). Teratomas can consist of embryologic layers and can be classified as mature cystic (dermoid cysts), immature and monodermal teratomas (17). The mature type of teratoma can be defined as benign, immature type of teratoma is also benign along with more aggressive course (4, 17). Histopathological examination revealed mature teratoma findings in the the dissected ovarian mass in this case too.

Wilson et al (18) reported an ovarian teratoma in a Rottweiler bitch in the right ovary unilaterally, besides Chang and Lin (19) reported a 3-right ovarian teratomas in a woman. Contrarily, Nagashima et al (20) reported teratoma of the left ovary in a bitch. A solid mature teratoma of left ovary which attached to left uterine horn was reported in a cat by Sato et. al. (6). According to Basaraba et al (1) and Norris et al (21) most teratomas were reported in left ovary. In this case a right ovarian teratoma was diagnosed with hydrometra within the uterus together firstly rather than these cases in a cat.

Carluccio et al (22) reported immature ovarian teratoma in two heifers, while one of the heifer's tumoral ovary was dissected surgically, ovariohysterectomy was not performed on this animal for the continuity of the animal's fertility. No evident signs of disease in other organs were found in this heifer. The other heifer was slaughtered and indeed no evidence of metastastic diffusion of the tumor were found during this process.

Although, teratomas are generally benign lesions when the literatures were searched, no data was available about only the mass extirpation in small animals especially in cats. Besides, ovariohysterectomy should be performed on this animal because of the abnormality within the uterus in this case.

Because of the congenital anomaly, neoplasia, inflammation and scarring or accidental ligation, impotency of the vulva, vagina, cervix or uterus can be seen which can cause the formation of hydrometra and mucometra (12, 14). In this case the possible cause of hydrometra could not be detected and during literature search no other report could be found together in the cat related with this case with regard to exhibit the cause of the condition.

According to the reports feline teratomas show no other symptoms related to uterine disorders. The present case is unusual in that because of having hydrometra within the uterus of a cat. So we recommend ovariohysterectomy for these kind of cases due to the fluid accumulation within the uterus with ovarian mass formation. Besides maybe an approach indicating only the extirpation of the tumoral mass can be preferred and the aspiration of the uterine fluid from the uterus can be performed but it is not certain that this entity will not recur as the real cause of hydrometra is not known.

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