

A rare case of an asymptomatic ovarian cystadenoma in a Labrador retriever

Een bijzonder geval van een asymptomatisch ovarieel cystadenoom bij een labrador retriever

¹A. Antonov, ¹A. Atanasov, ²R. Simeonov

¹Department of Obstetrics, Reproduction and Reproductive Disorders, Faculty of Veterinary Medicine, Trakia University, Stara Zagora, 6000, Bulgaria

²Department of General and Clinical Pathology, Faculty of Veterinary Medicine, Trakia University, 6000, Stara Zagora, Bulgaria

anton.antonov@abv.bg

ABSTRACT

In this report, a clinical case of asymptomatic ovarian cystadenoma in a six-year-old, female Labrador retriever is described. The owner reported that the dog had been presented for routine spaying two weeks earlier in another clinic. During the operation, the veterinarian discovered a unilateral mass at the tip of the left uterine horn, which he could not remove and ovariohysterectomy was not performed. The patient was then referred to the Hospital of the Faculty of Veterinary Medicine, Trakia University, Stara Zagora, Bulgaria. Transabdominal ultrasonography revealed the presence of a hypoechoic mass in the region of the left ovary (50.0 × 71.8 mm). Complete blood cell counts and biochemical laboratory analysis showed no abnormalities. Caudal midline celiotomy was performed and a substantially altered left ovary was observed. The right ovary and uterus had a normal size and structure. Macroscopic changes in the other abdominal organs were not found. The histopathological finding of the neoplastic formation was characteristic of an ovarian cystadenoma. At follow-up one month after surgery, the dog had fully recovered, and at re-examination six months after surgery, she appeared healthy and all clinical findings were normal.

SAMENVATTING

In deze casuïstiek wordt een klinisch geval van asymptomatisch ovarieel cystadenoom beschreven bij een zes jaar oude, vrouwelijke labrador retriever. De hond werd twee weken eerder in een dierenkliniek aangeboden voor routinesterilisatie. Tijdens de ingreep werd een unilaterale massa aan het uiteinde van de linkerbaarmoederhoorn vastgesteld. De massa kon toen niet verwijderd worden en de ovariohysterectomie werd niet uitgevoerd. De patiënt werd doorverwezen naar de Faculteit Diergeneeskunde van de Universiteit van Trakia (Bulgarije). Tijdens het transabdominaal ultrasonografisch onderzoek werd de aanwezigheid van een hypoechoïsche massa in de regio van het linkerovarium vastgesteld (50,0 x 71,8 mm). Het bloedonderzoek en de resultaten van biochemische labo-analyse vertoonden geen abnormaliteiten. Caudale middellijn-celiotomie werd uitgevoerd en een sterk afwijkend linkerovarium werd vastgesteld. Het rechterovarium en de uterus hadden een normale grootte en structuur. Er werden geen macroscopische abnormaliteiten aangetroffen bij de overige abdominale organen. De histopathologische bevindingen van de neoplasie waren kenmerkend voor een ovarieel cystadenoom. Een maand na de operatie was de hond volledig hersteld en bij een tweede controleonderzoek zes maanden na chirurgie waren de bevindingen normaal en was de hond gezond.

INTRODUCTION

Primary ovarian tumors are relatively rare in domestic animals (Sforna et al., 2003) with an incidence in intact bitches between 0.5 and 6% (Yotov et al., 2005). Canine ovarian neoplasms are classified according to their histogenetic criteria into epithelial, germ cell, sex-cord stromal and mesenchymal tumors (Sforna et al., 2003). Epithelial tumors are diagnosed in almost 50% of the dogs with an ovarian tumor (Hori et al., 2006). Papillary adenocarcinomas or cystic adenocarcinomas represent more than 60% of them (Sforna et al., 2003). Ovarian adenocarcinomas can affect one or both ovaries and consist of multiple thin-walled cysts filled with transparent squamous fluid or mucin (Schlaffer et al., 2007). Clinical signs are connected with their estrogen secretion and may include abdominal and vulvar enlargement, alopecia, vaginal discharge, pyometra, cystic endometrial hyperplasia, irregular estrus, weight loss and lethargy (Sforna et al., 2003; Zanghi et al., 2007; Ajadi et al., 2011).

Ovarian cystadenomas are common benign epithelial neoplasms in humans that carry an excellent prognosis (Limaïem et al., 2022). They are usually incidental findings and are noticed during an ultrasound investigation of another gynecologic disorder (Jeong et al., 2000; Seidman and Mehrotra, 2005). In dogs, only few cases of ovarian cystadenoma have been reported in the scientific literature, most often unilaterally and predominantly in aged animals (Dow, 1960; Ladds, 1971; Moulton, 1978; McEntee, 1990); hence the clinical impact of this rare tumor is unknown. The present case report offers a description of diagnostic procedures, treatment and a long-term follow-up of a bitch, histopathologically diagnosed with an ovarian cystadenoma.

CASE DESCRIPTION

A six-year-old, intact, female, nulliparous Labrador retriever weighting 29 kg, was presented to the

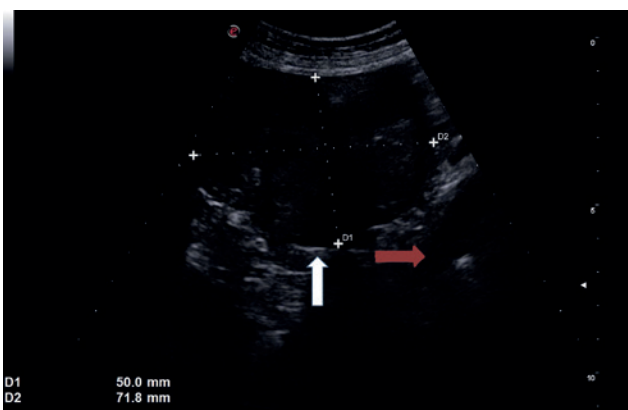


Figure 1. Ultrasonographic view of the neoplastic formation (white arrow) and caudal pole of the left kidney (red arrow).

Small Animal Clinic of the Hospital of the Faculty of Veterinary Medicine, Trakia University, Stara Zagora, Bulgaria. The owner reported that the dog had been presented for routine spaying two weeks earlier in another clinic. During surgery however, the presence of a unilateral mass at the tip of the left uterine horn was found. The surgeon could not remove it and ovariohysterectomy was not performed. The patient was referred to the University Veterinary Hospital for additional examination.

Physical examination of the animal was unremarkable. Complete blood cell counts and biochemical laboratory analysis showed no abnormalities. The abdomen was soft, not enlarged, nor painful on palpation. The vulva was normal in size and no discharge was appreciated.

Transabdominal ultrasonography was done (Esaote MyLab X90, Genua, Italy, equipped with 6.5 MHz convex transducer) and revealed the presence of a large (50.0 x71.8 mm) hypoechoic mass with irregular outer contours in the region of the left ovary (Figure 1).

The dog was scheduled for surgery. Subcutaneous premedication using 20 µg/kg medetomidine (Domitor, Vetoquinol, UK), followed by intravenous administration of 5 mg/kg propofol (Propofol 1%, Fresenius, Germany) were done. Inhalation anesthesia was performed after endotracheal intubation of the dog with isoflurane (Isoflurin, Vetpharma Animal Health S. L., Spain). Aseptic preparation of the ventral abdomen and midline celiotomy were performed. Abdominal exploration revealed the presence of a considerably altered left ovary (Figure 2). The right ovary and both uterine horns had a normal structure and size. Ovariohysterectomy was accomplished without complications. The abdominal cavity, subcutis and skin were closed routinely. Postoperative therapy included analgesia with meloxicam (Meloxidolor, Le Vet Beheer B. V., the Netherlands) at a dose of 0.2 mg/kg on the day of surgery and subcutaneous amoxicillin-clavulanic acid (Synulox RTU, Zoetis, USA) injections for seven days. Skin sutures were removed after twelve days.

The materials for histopathological examination were fixed in 10% neutral formalin solution and processed according to the classical histological technique. The resulting 4-µm-thick sections were stained with hematoxylin-eosin (H/E). The parenchyma of the neoplastic formation consisted of fully differentiated epithelial cells adherent to the intact basement membrane. Tumor cells did not show histological criteria of malignancy and the number of mitotic figures per high power field was less than one. Cystic structures were observed in some areas of the neoplastic formation (Figure 3). The tumor stroma consisted of fully differentiated connective tissue. The histopathological finding was characteristic of an ovarian cystadenoma (McEntee, 1990).

Follow-up examination at one and six months after surgery showed full recovery of the patient; according

to the owner, the dog was vital, with normal appetite and without signs of general condition abnormalities. Control ultrasonography was done and no pathological changes in any of the abdominal organs were found.

DISCUSSION

Cystadenomas, which appear to arise from the epophoron and/or rete ovarii rarely develop in domestic animals, as no cystadenomas have been described so far in cows, sows, ewes and goats (McEntee, 1990). In the present case report, an asymptomatic unilateral ovarian cystadenoma in a dog is described.

Ovarian tumors in dogs are usually epithelial and bilateral, whereas in cows and mares, they are often unilateral and mostly of the sex-cord stromal type (Sforna et al., 2003). In previously described cases of epithelial ovarian tumors in bitches, most often, papillary adenocarcinomas or cystic adenocarcinomas have been reported (Yotov et al., 2005; Sforna et al., 2003; Zanghi et al., 2007; Ajadi et al., 2011; Singh et al., 2016; Pecile et al., 2017). The majority of those dogs showed clinical signs as a result of estrogen and/or progesterone secretion, which play a role in the development of cystic endometrial hyperplasia and subsequent pyometra by stimulating endometrial and myometrial proliferative changes (Niskanen and Thrusveld, 1998).

In the present case, the dog was completely asymptomatic and the presence of the neoplastic process was an incidental finding during a routine spay procedure. According to Johnston et al. (2001), as a result of estrogen secretion, ovarian adenomas often induce persistent estrus, vulval swelling with serosanguineous discharge and alopecia, but in the patient of the present case, these signs were not observed, which suggests that the cystadenoma was non-hormone producing. Most of the previously described cases of canine ovarian cystadenomas include necropsy data without information about possible hormone secretion and symptoms (Dow, 1960; Moulton, 1978; McEntee, 1990). Similar to the findings in the present case report, a case of unilateral ovarian cystadenoma reported in a thirteen-year-old bitch was not associated with any clinical signs (Ladds, 1971). Therefore, it might be that cystadenomas are non-hormone producing neoplasms in dogs, in contrast to cystadenocarcinomas that seem more likely to be associated with clinical signs.

CONCLUSION

In the present case, a Labrador retriever with a cystadenoma, which affected one of the ovaries, is described, together with its clinical, diagnostic and therapeutic aspects. Ovariohysterectomy appeared to

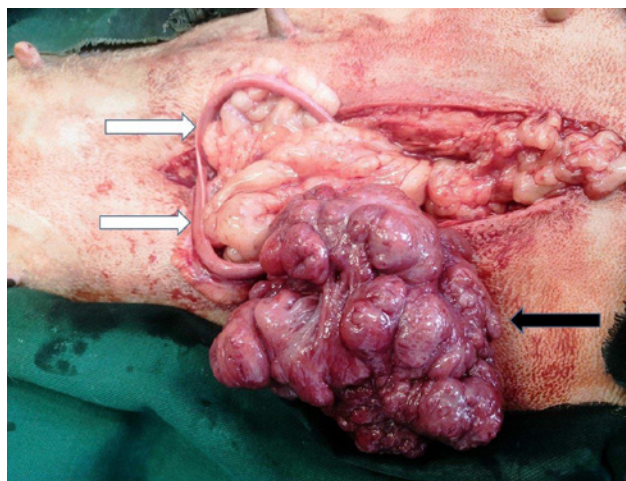


Figure 2. Macroscopic appearance of the tumor mass (black arrow) and uterine horns (white arrows) of the patient.

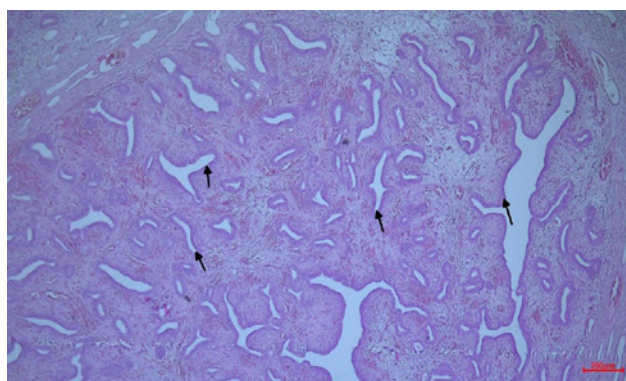


Figure 3. Histopathological image of the cystadenoma. Formation of cyst structures in some areas of the neoplastic formation. The peak of the arrows points at the center of the cyst structures. Hematoxylin-eosin (H/E) staining.

be an effective treatment in this dog. However, more research could provide valuable information about this rare pathology in dogs.

REFERENCES

- Ajadi A.T., Antia E.R., Akang, E.F. (2011). Cystadenocarcinoma arising from ovary in a three year old doberman bitch. *International Journal of Morphology* 29(3), 988-991.
- Dow C. (1960). Ovarian abnormalities in the bitch. *Journal of Comparative Pathology* 70, 59-69.
- Jeong Y.Y., Outwater E.K., Kang H.K. (2000). Imaging evaluation of ovarian masses. *Radiographics* 20 (5), 1445-1470.
- Johnston S., Kustritz M., Olson P. (2001). Disorders of the canine ovary. In: *Canine and Feline Theriogenology*. Second edition, W. B. Saunders Company.
- Ladds, P. W. (1971). Ovarian serous cystadenoma in a dog. *The Cornell Veterinarian* 61, 482-485.

- Limaïem F., Lekkala M.R., Mlika M. (2022). Ovarian cystadenoma. [Updated 2022 Oct 24]. National Library of Medicine (USA) StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2022 Jan-. Available from: <https://www.ncbi.nlm.nih.gov/books/NBK536950/>.
- McEntee K. (1990). Ovarian neoplasms. In: *Reproductive Pathology of Domestic Mammals*. Academic Press, Inc. San Diego, California.
- Moulton J. E. (1978). Tumors of the female genital system. In: *Tumors in Domestic Animals*. Second edition, University of California Press, Berkeley, pp. 330-336.
- Pecile A., Groppetti D., Grieco V., Barella G., Moiola M., Faverzani, S. (2017). Asymptomatic unilateral ovarian leiomyoma in a German Shepherd bitch. *Macedonian Veterinary Review* 40 (1), 97-101.
- Schlaffer D.H., Miller R.B. (2007). Female genital system. In: Maxie M.G. (editor). *Pathology of Domestic Animals*. San Diego, Academic Press, 431-563.
- Seidman J.D., Mehrotra A. (2005). Benign ovarian serous tumors: a re-evaluation and proposed reclassification of serous „cystadenomas“ and „cystadenofibromas“. *Gynecologic Oncology* 96 (2), 395-401.
- Singh A.K., Honparkhe M., Dalal, J., Kumar, R., Gupta, K., Singla V.K. (2016). A rare case of ovarian papillary adenocarcinoma in a bitch. *Asian Pacific Journal of Reproduction* 5 (4), 354-355.
- Zanghi A., Catone G., Marino G., Quartuccio M., Nicotina P.A. (2007). Endometrial polypoid adenomyomatosis in a bitch with ovarian granulosa cell tumour and pyometra. *Journal of Comparative Pathology* 136, 83-86.



© 2023 by the authors. Licensee Vlaams Diergeneeskundig Tijdschrift, Ghent University, Belgium. This article is an open access article distributed under the terms and conditions of the Creative Commons Attribution (CC BY) license (<http://creativecommons.org/licenses/by/4.0/>).

Belgische dierenartsen vinden de weg naar PathoSense bij DGZ Labo

PathoSense is een recente UGent spin-off die door dr. Sebastiaan Theuns en prof. dr. Hans Nauwynck werd opgericht in oktober 2020. PathoSense biedt een compleet 'staalname-tot-en-met-diagnostisch-interpretatie'-platform voor infectieziekten in de diergeneeskunde aan via nanopore sequencing (Oxford Nanopore Technologies). Via een gepatenteerde nieuwe swab kan je als dierenarts op een eenvoudige wijze stalen collecteren en de pathogenen in het staal meteen opzuiveren. De registratie van de analyse gebeurt via een intuïtieve mobiele app. Aangezien het platform gebruik maakt van een metageenoom analyse gebaseerd op nanopore sequencing, hoef je geen voorafgaande selectie te maken van de te testen pathogenen. Hierdoor kan er een brede identificatie van virussen en bacteriën uitgevoerd worden bij acuut zieke dieren. Deze analyse kan worden ingezet voor alle diersoorten.

Sinds begin mei worden de PathoSense-analyses voor BeLux exclusief en met succes uitgevoerd in het labo van DGZ Vlaanderen. U kan de kits bekomen aan het loket in Torhout/Lier, via de koerier (meerkost) of partnerlaboratoria.



PathoSense



Op zoek naar inspiratie voor casussen?

Ontdek onze "Pathogens in the Spotlight" en meer nieuws via onze LinkedIn pagina of **schrijf in op onze nieuwsbrief via de QR code!**

