CASE REPORT

Granulosa Cell Tumour and Associated Pyometra in an English Mastiff Female Dog

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Ind J Vet Sci and Biotech (2022): 10.21887/ijvsbt.18.2.35

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How to cite this article: Vishal, Yadav, D., Chaudhri, S.S., & Chandratre, G.A. (2022). Granulosa Cell Tumour and Associated Pyometra in an English Mastiff Female Dog. Ind J Vet Sci and Biotech. 18(2), 147-148.

Source of support: Nil

Conflict of interest: None.

Submitted: 24/11/2021 **Accepted:** 15/02/2022 **Published:** 10/04/2022

Granulosa cell tumour (GCT) is the most common ovarian tumour which can affect 50% of the canine population (Daleck and De Nardi, 2016).These tumors have been categorized as sex cord-stromal tumors, which arise from granulosa cell cords derived from atretic follicles with higher occurrence in middle-aged dogs (Perez-Marin *et al*., 2014). The main clinical signs in GCT cases include irregular estrous, vaginal bleeding, vaginal hyperplasia, ovarian cyst, pyometra, vaginal prolapse and dermatological lesions such as symmetric alopecia and hyperpigmentation (Tavasoli and Solati, 2011; Perez-Marin *et al*., 2014). Due to very discrete clinical signs, the diagnosis of ovarian tumors in dogs is usually complicated as it is occasionally confused with other diseases. The histopathological examination is essential for the confirmatory diagnosis of GCT (Matos *et al*., 2019). This case report describes the occurrence of ovarian granulosa cell tumor and associated pyometra in a female dog presenting for clinical consultation and its diagnosis and treatment.

Case History and Clinical Observations

A 5-years-old, multiparous English Mastiff female weighing 65 kg was referred to Pet Care Centre and Veterinary Diagnostic Laboratory, Karnal (Haryana) with a history of irregular estrous and serosanguinous discharge from vulva. Physiological parameters were recorded and were within the normal reference range. The oral mucosa was wet and pink in color, and the dog was anorectic for last 2 days. Vaginal cytology revealed the presence of mucus, epithelial cells, granulocytes, and erythrocytes. Blood samples were processed using an automated hematology analyzer (Celtak MEK-6550, Nihon Kohden) and Dry Chem Analyzer (Fujifilm NX500i) for hematological and biochemical parameters, respectively. The results revealed normal hemoglobin (12.5 g/dL), PCV (37.9%), monocytes (2%), BUN (12.3 mg/dL), serum creatinine (0.84 mg/dL), ALT (62.0 U/dl), and GGT (7.0 U/dL) with reduced TEC (5.72 x10^6/µL), lymphocytes (3%), Platelets (6.56 x10^3/µL), and severely elevated TLC (33.0 x10^3/µL) and neutrophils (94%), Based on haematological values, leukocytosis and neutrophilia, as well as presence of abundant granulocytes and erythrocytes in vaginal cytology and serosanguinous vulvar discharge, a presumptive diagnosis of open pyometra was established. It was decided to perform an ovariohysterectomy through a midline incision for correction of the condition.

Treatment and Discussion

The dog was subjected to 12 hours fasting. Premedication was done with atropine sulfate (0.02 mg/kg b.wt.) i/m 15 min before administering anesthetics. Surgical anesthesia was achieved using a combination of xylazine (1 mg/kg b.wt.) and ketamine (5 mg/kg b.wt.) i/m, and anesthesia maintenance were achieved using one-half the concentrations given i/v as and when required. Ovariohysterectomy was performed as per the conventional surgical procedure. Post-operative treatment included antibiotics (ampicillin-cloxacillin @ 10 mg/kg b.wt. i/m, metronidazole @ 10 mg/kg b.wt. i/v), antacids (ranitidine @ 2 mg/kg b.wt.) s/c, and NSAIDs (meloxicam @ 0.2 mg/kg b.wt.) i/v for 5 days. Antiseptic dressing of the surgical wound was done daily with povidone-iodine solution and ointment for 14 days. The sutures were removed on 15th post-operative day. The dog recovered with no complications.

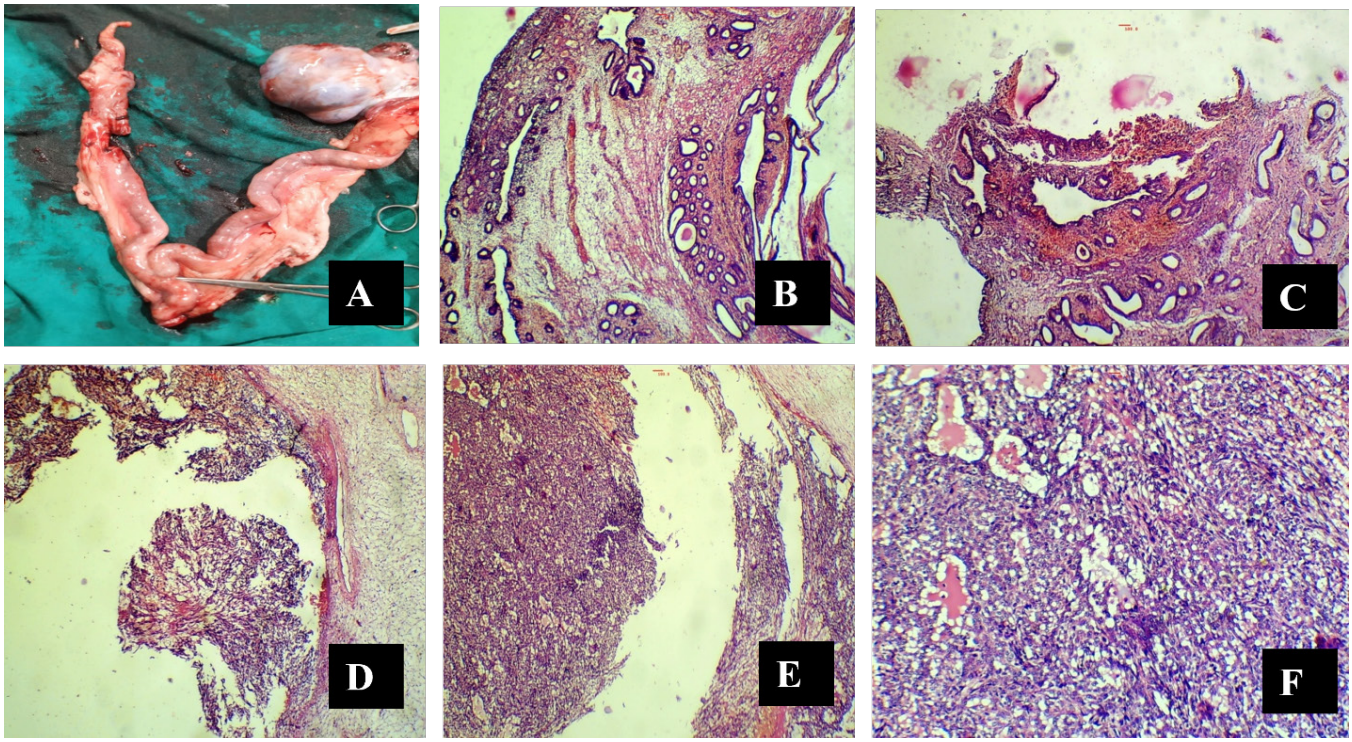

Fig. 1: Gross and histopathological observations. (A) Distended uterine horns and left ovarian mass (B) and (C) showing histopathological confirmation of haemorrhagic endometritis; (D) and (E) histology of granulosa cell tumour attached to serosa of ovary, and (F) morphology of granulosa tumor cells: pleomorphic cells having large round hyperchromatic nuclei with abundant pale cytoplasm.

Grossly, the uterine horns were symmetrically distended with purulent material. The left ovary was polycystic and encapsulated with a smooth lobulated surface measuring 7x4.5x4 cm, filled with straw-colored fluid (Fig. 1). Histopathological examination revealed hemorrhagic endometritis and ovarian granulosa cell tumor. The pleomorphic cells (Figure 1F) having large round hyperchromatic nuclei with abundant pale cytoplasm were identified attached to the serosa of ovary consisting of cuboidal to polygonal cells in various patterns, including Call-Exner bodies. The other cellular changes observed were as shown in Fig. 1B to 1E.

GCTs are common in the left ovary of middle to older-aged dogs (Sforna *et al*., 2003). Although a higher percentage of canine GCTs have been reported to be malignant and metastasis to regional lymph nodes and other organs of the body (Tavasoli and Solati, 2011), the present study reported non-functional GCTs. The detection of ovarian neoplasia, in most cases, is accidental during an elective or therapeutic surgical procedure. Therefore, a combination of clinical examination, ultrasonography, laparotomy, and histopathology are the most accurate approaches for diagnosing this type of tumor. Present clinical case in a Mastiff bitch reports the possible relationship between GCT and endometritis and suggests not to ignore the disease in a dog with endometritis.

Acknowledgement

Authors are grateful to the College of Veterinary Sciences, LUVAS, Hisar, Haryana for their support in the surgical and confirmatory diagnosis of the case.

References

Daleck, C.R., & De Nardi, A.B. (2016). *Oncologia em cães e gatos*. Grupo Gen-Editora Roca Ltd.

Matos, A.C.H., Leite, J., Consalter, A., Mello, M.F.V., Ferreira, M., & Fosenca, A.B.M. (2019). Histopathological findings in the early diagnosis of granulosa cell tumour in bitches. *Reproduction in Domestic Animals*, *54,* 828-834.

Perez-Marin, C.C., Molilna, L., Vizuete, G., Sanchez, J.M., Zafra, R., & Bautista, M.J. (2014). Uterine and ovarian remnants in an incorrectly spayed bitch: A case report. *Veterinarni Medicina, 59,* 102-106**.**

Sforna, M., Brachelente, C., Lepri, E., & Mechelli, L. (2003). Canine ovarian tumours: A retrospective study of 49 cases. *Veterinary Research Communications, 27,* 359-361.

Tavasoli, A., & Solati, A. (2011). Granulosa cell tumor of the ovary in dog: A case report from Tehran. *Journal of Cell and Animal Biology, 5,* 66-68.