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Diagnosis and surgical management of vaginal fibroid concurrent with ovariohysterectomy in a geriatric Siberian husky

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Abstract
An 8-year-old female Siberian husky was presented with a history of vaginal discharge for the past one month. On clinical examination, there was a mild elevation in temperature while other vital parameters were within normal range. The vaginal mucous membrane was pink and moist, along with sero-purulent discharge. Per-vaginal examination revealed a palpable mass which was extending towards the cranial part of the vagina. Estrus stage and TVT were ruled out by Vaginal Cytological Examination (VEC). On ultrasonographic and radiographic examination, no uterine involvement was noticed. Furthermore, Computed Tomography (CT) reveals a heterogeneous, contrast-enhanced mass invading the vaginal passage and extending cranially from the neck of the bladder to the vulval lips caudally, suggestive of a vaginal tumour. Under gaseous anaesthesia, episiotomy along with ovario-hysterectomy were performed as per standard surgical procedures. Histopathological examination of the excised mass confirmed vaginal fibroma. After 10 days of the post-operative period, the dog recovered uneventfully.

Keywords: Vaginal discharge, computed tomography, episiotomy, vaginal fibroma

1. Introduction
In canines, next to mammary tumours, the second most common tumours occur in the reproductive tract (Balamurugan and Sivasudharsan, 2021) [1] are vaginal and vulval tumours, which account for about 85-90% (Vijayanand *et al.*, 2009) [2]. Among frequently reported lower reproductive tract tumours, vaginal fibromas are considered benign, slow-growing and arise from fibrous connective tissue. As it impedes the lumen, it must be differentiated from other vaginal pathological conditions such as polyps, lipoma, leiomyoma, leiomyosarcoma, transmissible venereal tumour and adenocarcinoma. (Klein 2001, MacLachlan and Kennedy 2002) [3, 4]. These tumours are usually seen in medium to old-aged, nulliparous dogs and obstruct the urethra/ rectum either intraluminally or extraluminally (Kenanny *et al.*, 2013) [5]. Surgical management was considered to be the best treatment of choice (Klein 2001) [3]. The present case report describes the successful surgical management of vaginal fibroid via episiotomy followed by ovario-hysterectomy in an old female Siberian husky.

2. Case history and Clinical observation
An 8-year-old female Siberian husky was presented with a history of vaginal discharge for the past one month. On clinical examination, all the vital parameters were within the normal range, except for a slightly elevated temperature. Examination of the external genitalia revealed pink and moist vaginal mucous membrane along with sero-purulent discharge. Per-vaginal examination revealed a palpable mass which was extending towards the cranial part of the vagina. The various differentials for a vaginal mass with sero-purulent discharge included Transmissible Venereal Tumour (TVT), pyometra, urinary tract infection, abortion, vaginal tumour, or vaginitis.

Vaginal exfoliative cytology was first performed, which showed intermediate cells along with predominance of neutrophils and RBC, thus estrus stage and TVT were ruled out (Figure 1).

Ultrasonographic and radiographic examination showed no uterine involvement, thereby ruling out uterine pathologies (Figure 2). Based on these diagnostics, the case was tentatively diagnosed as a vaginal tumour. To assess the contour of the mass, Computed Tomography was performed, which revealed a heterogeneous contrast-enhanced mass (91.4x72.4 mm) (66.2 HU) invading the vaginal passage and extending cranially from the neck of the bladder to the vulval lips caudally (Figure 3).

3. Treatment

Surgical excision of the fibroid was planned. Preoperative haematology and serum biochemistry profiles were within normal range. No evidence of metastasis was detected on plain radiography and computed tomography. The dog was pre-medicated with Inj. Butarphanol @ 0.1 mg/kg body weight, intravenously and Inj. Diazepam @ 0.25 mg/kg body weight, intravenously, induced with Inj. Propofol @ 4.0 mg/kg body weight, intravenously and maintained with 2.5% Isoflurane. The dog was placed in supine position with catheterisation of the urethra (Figure 4). A purse-string suture was placed in the anus, to prevent fecal contamination during the surgical procedure. An episiotomy incision was made from the dorsal vulvar commissure up to the external anal sphincter muscle (Figure 5). After ligating the blood vessels supplying the mass, the mass was surgically excised. The incision site was closed using Polyamide 1-0 in a simple interrupted suture pattern. Followed by an episiotomy, an ovario-hysterectomy was also done as per standard operating protocol. Postoperatively, the animal was maintained with inj. Ringer's Lactate (@ 10 ml/kg, IV), inj. Amoxycillin and cloxacillin (@ 20 mg/kg IV), inj. Pantaprazole ((@1mg/kg, IV) and Tab. Carprofen (@ 4 mg/kg PO) for five days. The animal had a good prognosis and recovered without any complications. Sutures were removed after 10 days of surgery.

4. Results and Discussion

On histopathological examination, based on the amount of connective tissue present in the excised mass, they are named as leiomyomas, fibroleiomyomas and fibromas (Klein 2001) [3]. In the present case, the vaginal mass revealed diffused and severe infiltration of neutrophils and lymphocytes in the superficial connective tissue, along with interlacing bundles of fibroblasts and was confirmed as a vaginal fibroma. As most benign vaginal neoplastic cells expressed progesterone receptor, the size of the tumour can be reduced with palliative or neoadjuvant therapy using the progesterone receptor antagonist, aglepristone in dogs (Rollon *et al.*, 2008) [6]. However, many authors reported that surgical excision of the tumour was the treatment of choice in old-aged bitches and those pets which was not intended for breeding. Otherwise, due to compression of mass in the lower tract of the vagina, complications like urinary incontinence (Sahay *et al.* 1985) [7] and or urethral obstruction (Gupta *et al.*, 2014) have been reported. In the present case, a cranially extended, large-sized vaginal fibroma (91.4x72.4 mm) was surgically corrected by episiotomy followed by ovario-hysterectomy, which was in accordance with the report of Kumar *et al.* (2014) and thus the dog had a successful outcome with no tumour recurrence. Further use of advanced imaging modality like, computed tomography (CT) is valuable in assessing the contour, extent, and invasiveness of the mass, thereby facilitating precise surgical planning and successful surgical management in geriatric bitches.

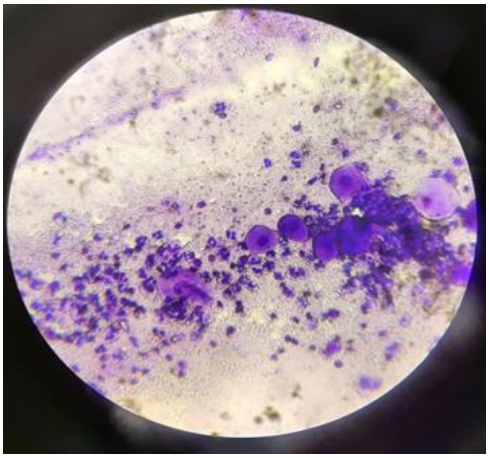

Fig 1: VEC showing intermediate cells with predominant neutrophils and RBCs

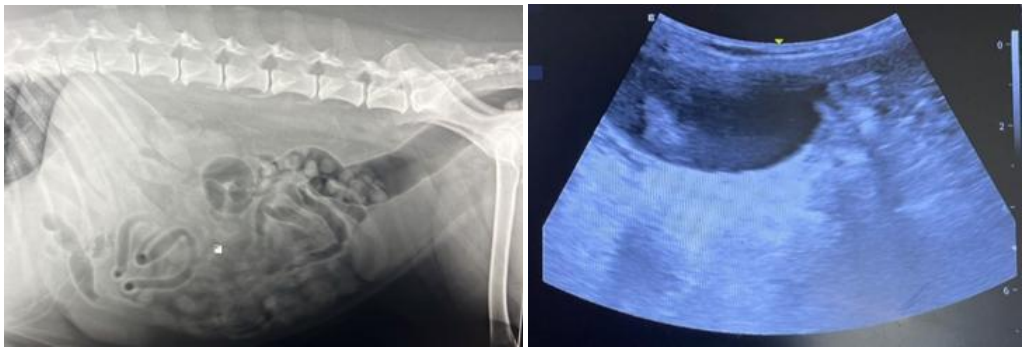

Fig 2: Radiographic and ultrasonographic images of the abdomen showing no uterine involvement

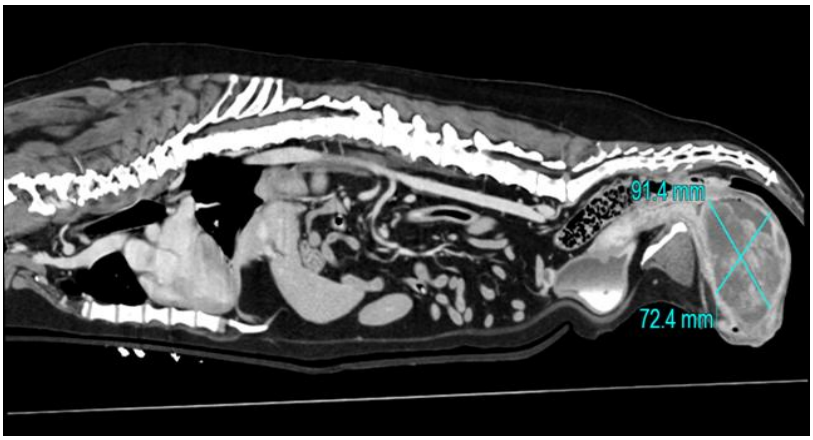

Fig 3: Computed tomography revealing a heterogeneous contrast-enhanced mass (91.4x72.4 mm) (66.2 HU) invading vaginal passage

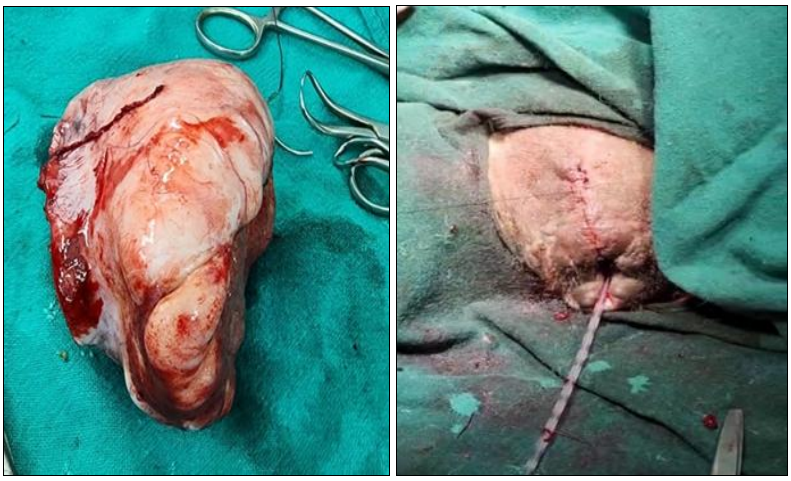

Fig 4: Incision from the dorsal vulvar commissure to the perianal region and catheterisation of the bladder

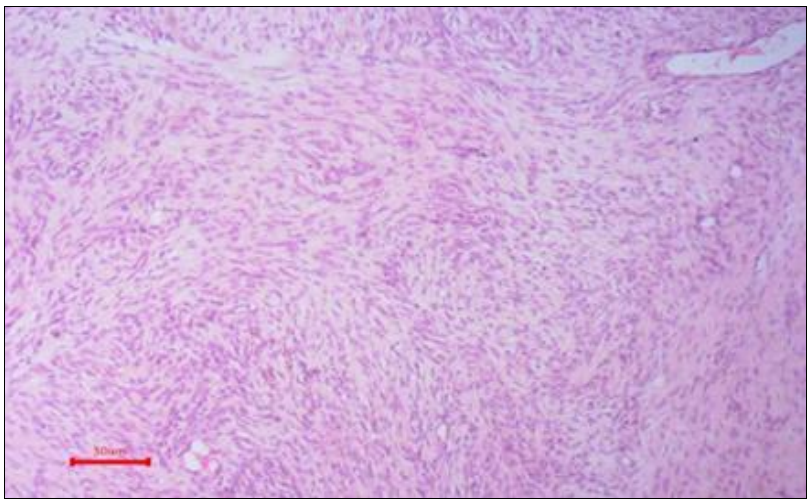

Fig 5: Vaginal Fibroma: interlacing bundles of fibrous connective tissue with fibroblast (H &E)

Conclusion

The present paper reports the successful surgical excision of vaginal fibroma in an old-aged, intact, Siberian Husky bitch. Prompt diagnosis by computed tomography ensures accurate surgical intervention, and concurrent ovariohysterectomy will prevent hormonal influence on the reproductive tract.

Conflict of Interest

Not available

Financial Support

Not available

Reference

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