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Surgical management of vaginal fibroleiomyoma in a female labrador retriever

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Abstract

A five-year-old intact female Labrador retriever, on her fourth estrous cycle was presented with a history of a mass protruding from the vagina for the past two weeks. On clinical examination, two vaginal masses were noticed. The case was tentatively diagnosed as vaginal fibroma and surgically excised. Histopathological examination confirmed that the vaginal masses were Fibroleiomyoma.

Keywords: Fibroleiomyoma, intact female Labrador retriever and vaginal mass

Introduction

Vaginal and vulvar tumours are the second most common types of canine reproductive tumours, comprising approximately 2.4% to 3% of all canine tumours. Research indicates that the vast majority of these tumours are benign smooth muscle tumours, with leiomyomas accounting for approximately 78% to 86% of cases. Several ovarian conditions can result from either disrupted ovarian development or age-related changes. Ovarian hypoplasia, although rare, is characterized by a deficiency of germ cells. These hypoplastic ovaries are dysfunctional and usually exhibit reduced estrogen secretion, attributed to the absence of granulosa cells, which correlates with the absence of germ cells (Andrea *et al.*, 2013)^[1]. Sex steroid hormones play a crucial role in initiating, promoting and advancing the carcinogenic process (Millán *et al.*, 2013)^[2]. The impact on smooth muscle within the genital tract can result in leiomyomas, characterized as benign neoplasms of these cells. According to a study, estrogen receptor- α and progesterone receptors were found to be expressed in 56.3% and 84.4% of canine leiomyomas, respectively (Millán *et al.*, 2007)^[3]. The present case represents the vaginal Fibroleiomyoma and its surgical outcome.

Case Report

A five year old female Labrador retriever dog was brought to the Veterinary Clinical Complex, Veterinary College and Research Institute, Theni with the history of a mass protruding from the vagina for the past two weeks. On clinical examination, all the vital parameters were within the normal range. On vaginal examination one vaginal mass was protruding out from vulva and one mass was able to be palpated by digital examination. Vaginoscopic examination revealed the presence of two pedunculated masses of which one was attached to the floor of the vagina and another a mass was attached to the cranio-lateral wall of the vagina. Surgical excision of the masses was planned via dorsal episiotomy. Following urinary catheterization surgical site was prepared aseptically. Premedication included Injection Atropine at a dosage of 0.02 mg/kg BW intramuscularly (I/M) and Injection Xyalzine at 1.1 mg/kg BW I/M. Induction was achieved using Injection Ketamine at 5 mg/kg BW and Injection Diazepam at 0.5 mg/kg BW intravenously (I/V). Maintenance was achieved with 2% Isoflurane in oxygen. Dorsal episiotomy was performed and the vaginal masses were excised using bipolar cautery and wound was sutured using 2-0 PGA. Dorsal episiotomy was sutured with 2-0 PGA and skin was sutured using silk 1-0 (Fig 1 to 3).

Post-operative antibiotic along with sutured wound was taken care for seven days and sutures were removed on the seventh day and the animal recovered uneventfully. A sample for histopathological study was collected on histopathological examination of the mass presence of admixture of neoplastic fibrous and muscle component were observed and special staining with picrociturs red revealed the presence of red coloured fibrous component and light yellow colour muscle component and confirmed as Vaginal Fibroleiomyoma (Fig 4 and 5).



Fig 1: Two vaginal masses one within the vaginal cavity and another with ulceration.



Fig 2: Dorsal episiotomy of vulva in a Labrador retriever



Fig 3: Cross section of vaginal masses



Fig 4: Urinary catheterization for urethral patency

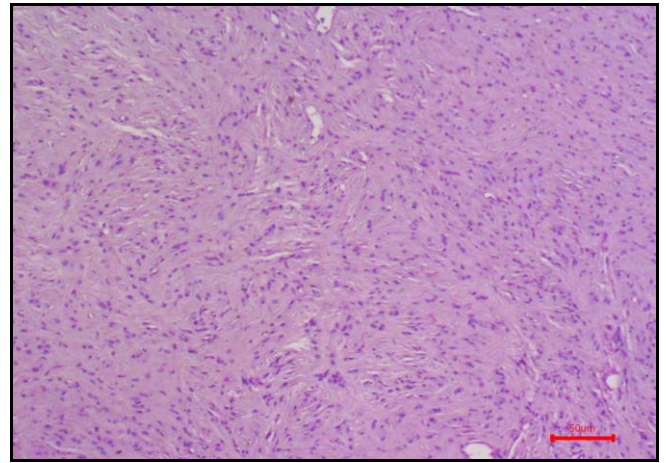


Fig 5: Histopathological examination of the mass presence of admixture of neoplastic fibrous and muscle component

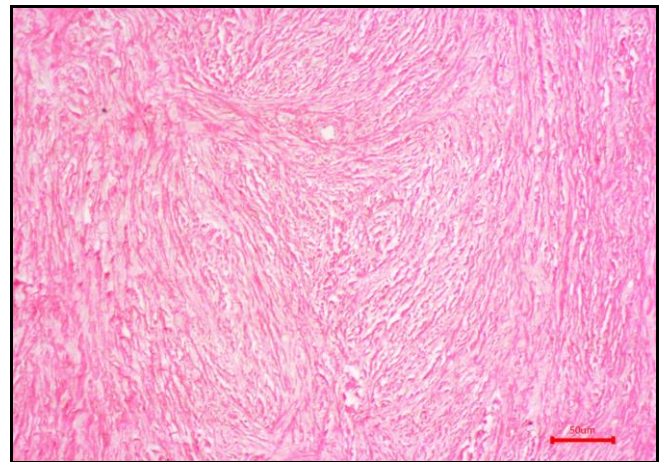


Fig 6: Special staining with picrociturs red revealed the presence of red coloured fibrous component and light yellow colour muscle component

Discussion

Fibroleiomyomas were characterized by a combination of smooth muscle and connective tissue and commonly observed in the female reproductive tract of both dogs and cats (Cooper and Valentine, 2002) [4]. Vaginal leiomyomas could manifest as solitary or multiple masses and might be located either within the vaginal lumen (intraluminal) or outside the vaginal wall (extraluminal). Large intraluminal tumours had the potential to protrude through the vulva, whereas extraluminal tumours often result in perineal swelling (Andrea *et al.*, 2013) [1]. In the present case one mass was protruding through the vulva. Leiomyoma, fibroma, or fibroleiomyoma, along with transmissible venereal tumours, are among the most frequently observed benign neoplasms affecting the canine reproductive tract. Effective management often involved local complete resection via episiotomy combined with ovario-hysterectomy (OHE) to prevent recurrence (Kumar *et al.*, 2014) [5]. Tumours located in the lower reproductive tract could potentially lead to obstruction of the urethra and rectum, either externally or internally (Gupta *et al.*, 2014) [6]. Hence, before proceeding with the surgical excision urinary catheterization played major role for the recovery of the animal. Iatrogenic damage to the urethra or inadvertent injuries to surrounding perineal structures was potential surgical complications. The use of urethral catheterization was instrumental in preventing damage to this structure during surgery (Dey *et al.*, 2017) [7]. The management of

tumours in the lower reproductive tract may demand a surgical approach that involves episiotomy. Episiotomy is a procedure where an incision made in the perineum, allows for better access to the affected area and facilitates the removal of tumours. This approach is particularly crucial for tumours causing obstruction to the urethra or rectum, as it allows for precise intervention and restoration of normal function (Ali *et al.*, 2019)^[8]. Vaginal leiomyomas can be either sessile or pedunculated. Pedunculated masses, with their stalk-like attachment, are typically easier to remove than sessile ones. This distinction was crucial in determining the surgical approach for optimal removal and minimizing complications (Nelissen and White 2012)^[9]. Extraluminal leiomyomas was often accessible through dorsal episiotomy, allowing for removal through blunt dissection (Sathya and Linn 2014)^[10].

Conclusion

The case study highlighted the occurrence of fibroleiomyoma in a five-year-old intact female Labrador retriever during her fourth estrous cycle. Prompt diagnosis and surgical excision of the vaginal masses was crucial in managing the condition. The histopathological confirmation of fibroleiomyoma underscored the importance of accurate diagnosis in canine reproductive health. This case study emphasized the significance of vigilant clinical examination and timely intervention in addressing reproductive tumours in canine practice.

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Conflict of Interest

Not available

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No conflict of interest relevant to this study was reported.

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