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Surgical management of multiple vaginal fibroma in a Labrador dog: A case report

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Abstract

A 11-year-old intact Labrador female dog weighing 34 kg was presented with a history of progressive hard swelling in the vaginal passage and perineum region from the past one month with intermittent purulent vaginal discharge and straining to void faeces. Vaginal examination revealed smooth, submucosal, intraluminal, firm, and hard masses in the dorsal and ventral floors of the vagina. Surgical excision of the vaginal masses was performed under general anaesthesia after urethral catheterization. Postoperative management with antibiotics and supportive medications resulted in an uneventful recovery for the bitch. Histopathology of the excised mass revealed it to be a case of multiple vaginal hard fibromas.

Keywords: Vaginal fibroma, Labrador, Surgical Excision, Histopathology

1. Introduction

Tumours arising from the female reproductive tract of bitches may either originate from the tubular genital tract or from the ovaries (Barrett *et al.*, 2013) [3]. Around 3% of canine tumours are neoplasms of the female tubular genitalia, and 85–90% of these occur in the vagina and vulva. Vaginal tumours in combination with vulval tumours are the second most prevalent reproductive tumours in the canine population, next to mammary tumours (Noakes *et al.*, 2014) [11]. It is crucial to determine if these neoplasms are benign or malignant before commencing the treatment. Further, such tumours must be differentiated from other disorders such as hyperplasia, granulation tissue or abscessation (Dey *et al.*, 2017) [5] as significant differences exist between these disorders in terms of treatment and prognosis (Kang *et al.*, 1983) [6]. Fibromas are benign, mesenchymal neoplasms made up of fibroblasts with extensive collagenous stroma. Grossly, they appear as hard, white and spherical in nature. There are two types of fibromas: hard and soft. Hard fibromas are hard and firm and the cut surface is usually dry and white with adult fibrous connective tissue cells. On the other hand, soft fibromas appear spongy, vascular, edematous, and pedunculated with a small amount of collagen (Kenanny *et al.*, 2013, Mcentee *et al.*, 1976, Rizk *et al.*, 2015, Wykes 1986) [7, 9, 12, 15]. Vaginal fibromas may be single or multiple, intraluminal or extraluminal. The tumour is usually round or oval, well-defined, and encapsulated. Its size and consistency vary depending on the duration of growth, becoming firmer due to an increase in connective tissue. Large intraluminal tumours may protrude through the vulva, while extraluminal tumours tend to cause perineal swelling (Umamageswari *et al.*, 2016) [14].

2. Case history and observation

A 11-year-old intact female Labrador dog weighing around 34 kgs whelped once nine years ago was presented to the small animal unit of VGO, Veterinary Clinical Complex, RIVER with a complaint of progressive hard swelling in the vaginal passage and perineum (Fig. 1). It had intermittent purulent vaginal discharge from the past one month. The dog had difficulty passing stools for several days. Vital parameters were normal with normal haematological values of Hb 11.8%, PCV 40%, and TLC 16,000 cells/mm³. Vaginal examination revealed smooth, intraluminal, firm and hard masses on the dorsal and ventral floors of the vagina. Hence, it was decided to remove the mass by surgical excision through an episiotomy after urethral catheterization.

3. Surgical procedure

The surgical site was shaved and aseptically prepared. The animal was pre-medicated with Atropine sulphate at 0.045 mg/kg b.wt. S/C. Sedation was carried out by administering Diazepam at 0.5 mg/kg b.wt. I/V. The anaesthesia was induced and maintained using Xylazine and Ketamine in 1:2 combinations through I/V. An episiotomy was performed on the dorsal commissure of the vulva to expose the vaginal tumours. The urinary bladder was catheterized before the start of the surgery. The capsule of each mass was carefully incised and a total of 11 masses (Fig. 3) were removed using Babcock forceps with careful blunt dissection. The base of the capsule was ligated using absorbable suture material. After the excision of the tumour mass, the vaginal mucosa was closed using catgut size '1' with a simple continuous suture pattern (Fig. 2). The vulval incision was carefully closed with a simple interrupted horizontal mattress using polyamide 'A' to prevent any distortion to the shape of the vulva (Fig. 3). Postoperatively, the dog was administered Inj. Tramadol at 4 mg/kg b.wt. S/C and a vaginal tampon soaked in Haemocoagulase was kept in situ to arrest localized bleeding. The antibiotic Taxim was administered at 50 mg/kg b.wt. BID I/V for 7 consecutive days. Other supportive medications such as Tab. Deep TBR BID PO, Tab. Serrasil Forte 10 mg SID and Tab. Carprofen at 5 mg/kg b.wt. were given for 5 days for wound healing and pain management. A representative sample from the excised tumours was sent to the pathology department for histopathology. Complete healing was noticed, and sutures were removed on the 10th day after surgery. The animal had an uneventful recovery without any complications such as urine retention, incontinence and constipation.

4. Materials and Methods

The collected tissue sample was formalin-fixed and processed by routine paraffin-embedding technique. Further, the sections were stained by Hematoxylin & Eosin (H&E) and Masson's trichrome staining methods.

5. Pathology

Gross examination revealed multiple, variable-sized, round-to-oval-shaped masses (Fig. 4). On incision, the cut surface was white in colour and hard in consistency. Microscopically, the mass revealed bundles of irregularly arranged spindle-shaped fibroblasts containing spindle-shaped nuclei (Fig. 5) and amidst collagen (Fig. 6).

6. Result

Based on histopathological examination, the mass was identified as a fibroma.

7. Case discussion

Neoplasms like vaginal fibroma are usually seen in dogs aged around 10 to 12 years (Brodey *et al.*, 1967) [4]. The mesenchymal origin of canine vaginal tumours is rare and among these, fibroma and fibrosarcoma are common (Neelu *et al.*, 2009) [10]. Tumours of the lower reproductive tract may cause obstruction to the urethra and rectum extraluminally or intraluminally (Kenanny *et al.*, 2013) [7]. Vaginal fibroma can be treated with surgical approaches like episiotomy with complete surgical excision of the mass (Ali *et al.*, 2019, Kumar *et al.*, 2014) [1, 8] or more aggressive procedures such as vaginectomy, urethroplasty, and ventral pelvic osteotomy (Salomon *et al.*, 2004) [13]. Differential diagnosis of vaginal

fibroma includes vaginal polyps, lipoma, leiomyoma, leiomyosarcoma, transmissible venereal tumour, lipoma, and adenocarcinoma (Balamurugan *et al.*, 2021) [2].



Fig 1: Perineal Swelling



Fig 2: Suturing the Vaginal Mucosa



Fig 3: External Vulval Sutures

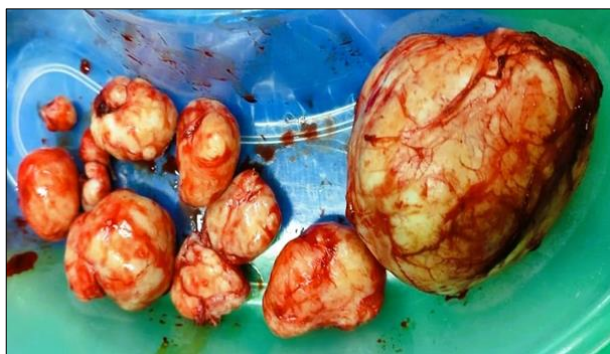


Fig 4: Dissected Fibroma Masses from the Vagina

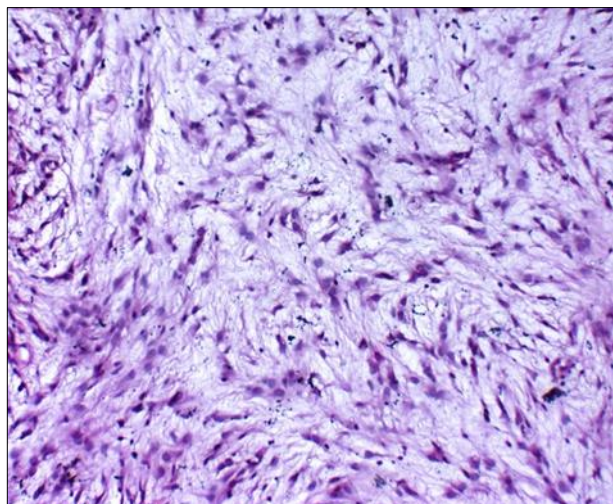


Fig 5: Fibroma - Proliferation of Neoplastic Fibroblasts in Haphazard manner. H&E. 200x

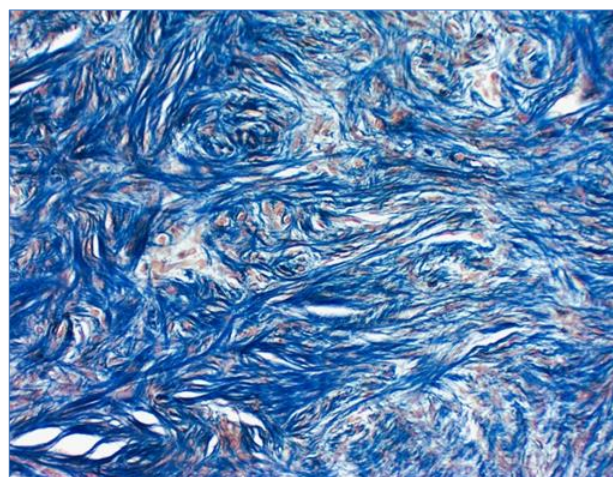


Fig 6: Fibroma - presence of abundant collagen (blue colour). Masson's trichrome stain. 200x

8. Conclusion

From the above case study, it may be concluded that old age may be one of the etiological factors for the occurrence of vaginal fibroma in bitches. Surgical excision of the mass through episiotomy was found to be satisfactory in the present case.

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