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A pathomorphological report on vaginal fibroma in a dog

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Abstract

The present case describes the gross, histopathological findings of vaginal fibroma in a spitz dog. A female spitz dog was presented for postmortem examination with a history of tumor mass hanging from vaginal region. The necropsy examination was carried out and the salient gross and histopathology features observed were correlated and the case was diagnosed as vaginal fibroma.

Keywords: Dog, Vaginal fibroma, Gross morphology, Histopathology, Masson's trichrome stain

1. Introduction

The Vaginal tumors in conjunction with Vulval tumors contribute to 2.4-3 per cent of tumors in dogs [2]. They are the second most common reproductive tumors next to mammary tumors in canine population. The commonly reported reproductive tract neoplasms are leiomyoma, fibroma and transmissible venereal tumor. Fibromas are usually benign, hard, white, spherical and are mesenchymal neoplasm of fibroblasts with abundant collagenous stroma. They usually elaborate elastin, collagen and fibroglia. They interfere with breeding and parturition. Two main types of fibroma exists. They are hard and soft fibroma. Hard fibromas are hard and firm. The cut surface is usually dry and white which evince adult type fibrous connective tissue cells. Whereas, the soft fibroma appears spongy, vascular and edematous. They are often pedunculated and contain little amount of collagen. Special staining methods like Masson's Trichrome and Picrosirius Red staining are widely used in differentiation of the common vaginal tumors. Vaginal fibromas are usually differentially diagnosed from vaginal polyps, lipoma, fibrosarcoma, vaginal leiomyoma, leiomyosarcoma, transmissible venereal tumor, lipoma and adenocarcinoma [1, 4, 5, 7].

2. Materials and Methods

A female 8 years old Spitz dog was brought to the Teaching Veterinary Clinical Complex, Madras Veterinary College, Chennai with the history of a solitary mass hanging from the vaginal region. The dog was initially stabilized. Due to the poor bodily condition of the dog, it collapsed and was presented to Department of Veterinary Pathology for necropsy examination.

2.1 Collection of samples

The gross examination was performed and the tissue from the vaginal mass (4mm thickness) was collected in 10 per cent formalin for histopathological examination. Paraffin embedded tissue sections were cut into 4µm thickness and were stained with haematoxylin and eosin (H&E). The slides were viewed under light microscopy.

2.2 Special staining with Masson's Trichrome

The standard special staining protocol of Masson's Trichrome method was carried out to differentiate the collagen and smooth muscle component in the tumor mass in order to differentiate the mass from smooth muscle tumors of vagina.

3. Results and Discussion

The gross examination revealed that the vaginal mass was roughly around 5cm in diameter with necrotic edges and grey white center. It was solitary, well circumscribed and pedunculated from the floor of the vagina. The cut section of the surface was white and tough in appearance (Fig.1).

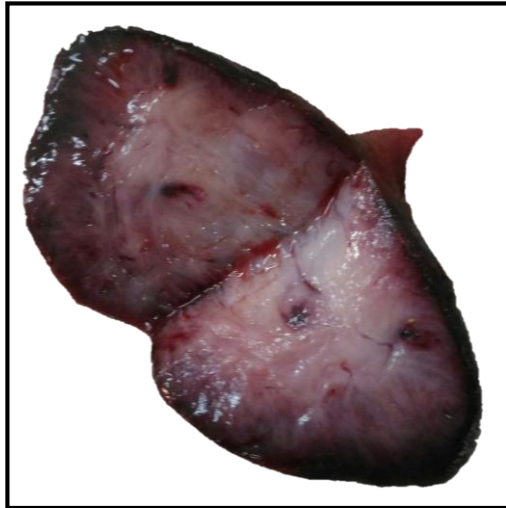


Fig 1: Dog-Vagina-Cut section of a solitary mass (roughly 5cm diameter) with necrotic edges and grey white center.

Histopathology of the mass revealed a sparsely cellular neoplasm which was composed of interlacing bundles of fibrous connective tissue proliferation (Fig.2) with whorl like pattern of arrangement supported by collagenous matrix (Fig.3). The neoplastic cells had an oval to elongate nucleus, stippled chromatin and variably distinct nucleolus (Fig.4). The cells had indistinct cell borders and cytoplasm. Multifocally, there were numerous neutrophils and few lymphocytes within the stratified squamous epithelium with capillary congestion.

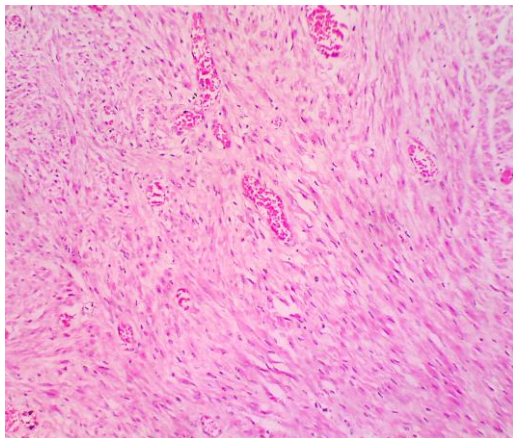


Fig 2: Dog-Vaginal mass-Histopathology-Interlacing bundles of fibrous connective tissue proliferation (H&E 10x)

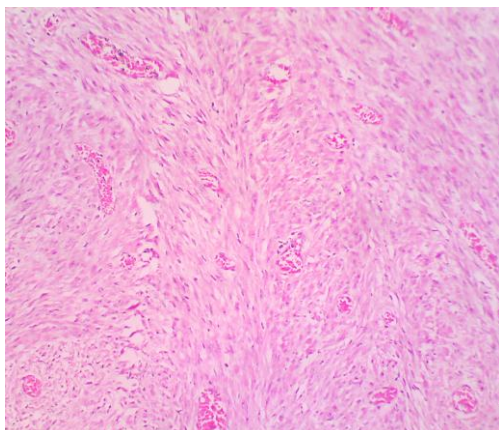


Fig 3: Dog-Vaginal mass-Histopathology-Whorl like pattern of arrangement of fibers (H&E 10x)

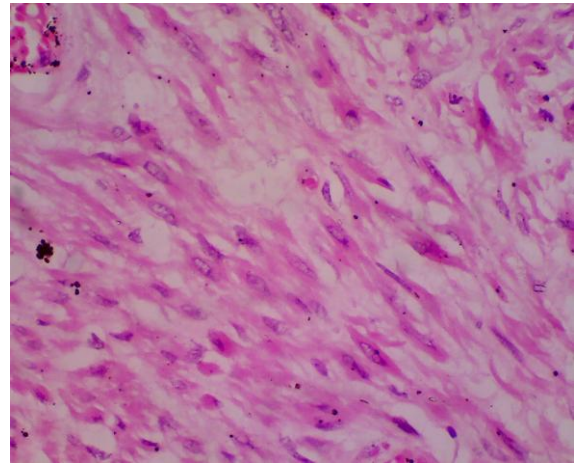


Fig 4: Dog-Vaginal mass-Histopathology-Spindle shaped fibroblasts (H&E 40x)

In order to differentiate the mass from smooth muscle tumors of vagina viz., leiomyoma and leiomyosarcoma, the Masson's trichrome staining method was carried out. The abundant collagen in the mass was stained with green color and the red blood cells were identified by red coloration (Fig.5). This was confirmative of fibroma.

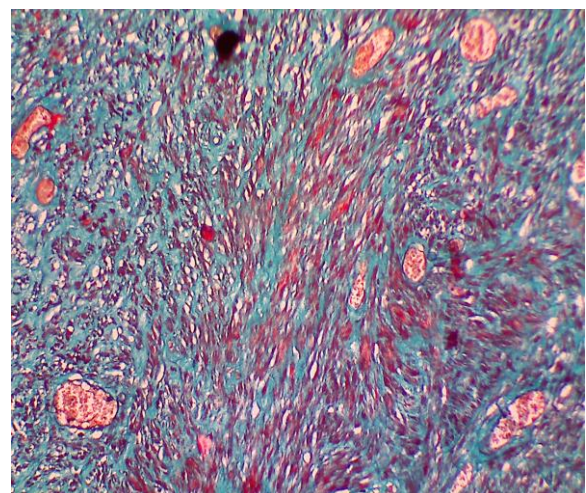


Fig 5: Dog-Vaginal mass-Masson's Trichrome staining method- Green coloration of the abundant collagen (40x)

The age group of the dog correlated with the previous findings of Brodey and Roszel, (1967) [2] who reported that the average age group of affected dogs tends to be around 10 to 12 years.

The gross and the histopathological findings were in agreement with the findings of Rizk *et al.* (2015) [5] and Vijayanand *et al.* (2009) [6]. The present case did not reveal any significant alterations in the haematobiochemical values and the dog collapsed after first day presentation due to secondary complications. However, previous reports by Kumar *et al.* (2014) [3] reported slight haematobiochemical alterations which might be due to the malignant variety of the tumor described in their reports.

Hence the present case describes in detail the pathomorphological findings.

4. Conclusions

This case briefly describes the pathomorphological findings in vaginal fibroma in a spitz dog and its confirmation by Masson's Trichrome method.

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