

## Vaginal Masses in Bitches: Surgical Management and Clinicopathologic Report of 5 Cases

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**Abstract:** Five cases of vaginal masses in bitches were surgically resected due to the owners request. Histopathology showed the masses was vaginal hyperplasia, leiomyoma, adenoma, lymphatic sarcoma and fibroma, respectively.

**Key words:** Bitch, vaginal mass, histopathology, fibroma, bitches, China

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### INTRODUCTION

The commonest causes of vaginal/vestibular masses in the bitch are vaginal prolapse, vaginal neoplasia and urethral neoplasia protruding into the vaginal vault (Manothaiudom and Johnston, 1991). There have been some reports of neoplasm involving the vaginal and vulva in the bitch (Williams *et al.*, 2005; Kumar *et al.*, 2003; Sontas *et al.*, 2010; Tiwari, 2008; Tanaka *et al.*, 2001; Nak *et al.*, 2009; Tiwari and Gupta, 2005).

However, there were still many vulvar and vaginal tumors which were excised and not diagnosed. In this study, the researchers made the final diagnosis by excision and histopathological examination. Histopathology showed the masses was vaginal hyperplasia, leiomyoma, adenoma, lymphatic sarcoma and fibroma, respectively.

### MATERIALS AND METHODS

In recent years, five cases of vaginal lumps in bitches were referred to hospital.

**Case 1:** An 18 months old intact female, Doberman Pinscher bitch weighing 26 kg was referred for evaluation of a mass protruding from the ostium vaginae with a week history. The mass had become apparent during dioestrus of young bitches. The finding of clinical examination showed that the mass was round, hard and protruded out of the ostium vaginae.

**Case 2 :** A 12 years old, Shih-tzu bitch weighing 4.2 kg was referred for evaluation of a mass protruding from the ostium vaginae with a week history. The mass was round, firm and rope of base in palpation.

**Case 3:** A 5 years old female 35 kg, German Shepherd dog was presented for examination with a month history. About 3 neoplasms which were fragile and pedunculated were found in vulva and vestibula.

**Case 4:** A 5 years old 23 kg, Chow Chow bitch was presented for examination with a week history. About 2 neoplasms which were fragile and pedunculated were found in vulvar canal.

**Case 5:** A 6 years old 4.8 kg, Shih-tzu bitch was presented for examination with a 2 months history. The mass had become apparent during dioestrus of young bitches. The finding of clinical examination showed that the mass was round, hard and protruded out of the vulva. In addition, vaginal prolapse was caused by vaginal lump.

According to the result of clinical examination, a surgical management was recommended to the owners as the most suitable procedure. Although, they were informed about the possible risks; they chose surgical treatment.

The lumps were successfully resected and fixed in 10% neutral buffered formalin for 24 h. Following fixation, tissue samples were cut and embedded in paraffin wax, sectioned and stained with haematoxylin and eosin stain for histopathological examination.

## RESULTS AND DISCUSSION

Histopathological features of the lesions in case 1 showed that the mass was a vaginal hyperplasia including numerous fibrous connective tissue with disorder and affluent micrangium (Fig. 1a, b). However, no significant neoplastic celles were seen.

Histopathological examination of the mass in case 2 demonstrated that it was a leiomyomas (Fig. 2a, b). Microscopically, lesions were appeared as a well-circumscribed, non-encapsulated neoplasm composed of interlacing fascicles of spindled cells with elongated blunt-ended nuclei, abundant cytoplasm, growing between inconspicuous thin-walled and sometimes dilated blood vessels. The mitotic figure were little seen in the leiomyoma cells. Case 3 shows that it was a lymphatic sarcoma (Fig. 3a, b) with increased leukomonocyte and vascular structures within the lesions. The lymphatic sarcoma cells are conformed in size with the more mitotic figure be seen. Histopathological examination of the mass in case 4 demonstrated that it was a adenoma (Fig. 4a, b). They were composed of a population of large ovoid cells with scanty cytoplasm and

strong dyeing nuclei. Mitotic figures were obvious. Histopathological examination of the mass in case 5 demonstrated that it was a leiomyomas (Fig. 5a, b). A large inflammatory cell infiltrate within the local tumor. It was composed of spindle cells with stained nuclei and disordered in alignmen. Mitotic figures were rare. The commonest causes of vaginal/vestibular masses in the bitch are vaginal prolapse, vaginal neoplasia and urethral neoplasia protruding into the vaginal vault (Manothaiudom and Johnston, 1991). The clinical presentation of a lump of the vaginas varied. Vaginal lump have been reported in virtually bitch such as vaginal hyperplasia, neurofibroma and leiomyoma (Kumar *et al.*, 2003; Sontas *et al.*, 2010; Tiwari, 2008).

In these cases, the lumps of case 1, 2 and 5 were a smooth, firm and mobile lump. However, the lumps of case 3 and 4 were fragile and pedunculated. The lump could be separated easily from the surrounding tissues and was completely removed. Due to histopathological examination of vaginal lump the masses was vaginal hyperplasia, leiomyoma, adenoma, lymphatic sarcoma and fibroma, respectively. After the surgery, the bitches were clinically normal. At present in many tumor cases

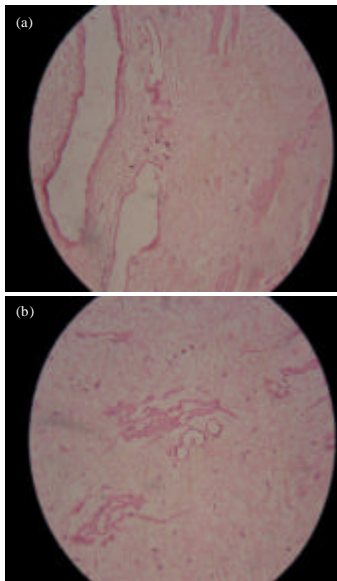


Fig. 1: Histopathological examination; a) numerous fibrous connective tissue with disorder and affluent micrangium (Hematoxylin-eosin stain; original magnification,  $\times 200$ ) and b) numerous fibrous connective tissue with disorder. However, no significant neoplastic celles were seen (Hematoxylin-eosin stain; original magnification,  $\times 200$ )

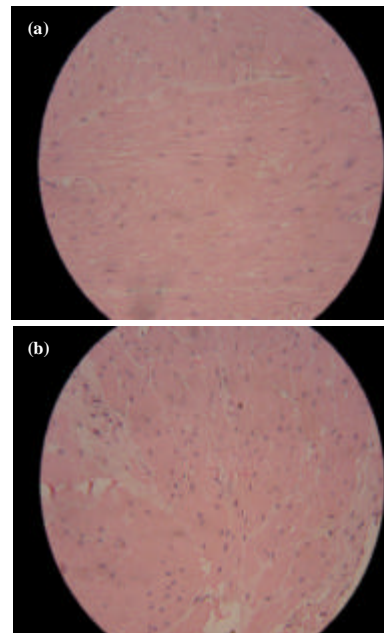


Fig. 2: Photomicrographs of histological sections; a) a spindled and abundant leiomyomas cells with abundant cytoplasm (Hematoxylin-eosin stain; original magnification,  $\times 200$ ) and b) lesions were appeared as a well-circumscribed, non-encapsulated neoplasm composed of interlacing fascicles of spindled cells with some dilated blood vessels (Hematoxylin-eosin stain; original magnification,  $\times 200$ )

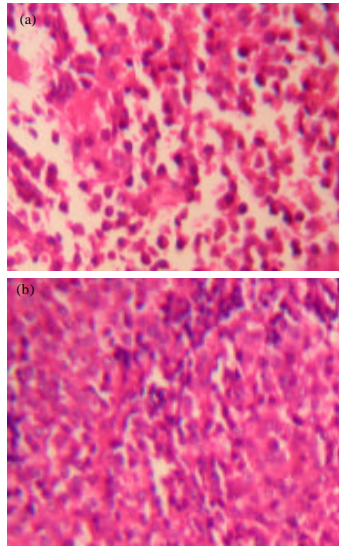


Fig. 3: Photomicrographs of histological sections that; a) the capillaries are dilated and have increased in number; observe the generous leukomonocyte (Hematoxylin-eosin stain; original magnification,  $\times 400$ ) and b) the lymphatic sarcoma cells were composed of a homogenous population with the more mitotic figure (Hematoxylin-eosin stain; original magnification,  $\times 400$ )

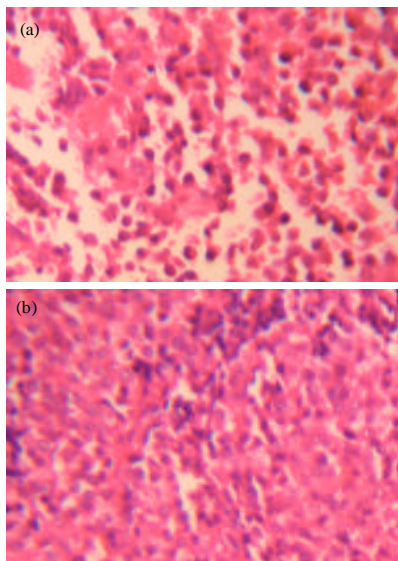


Fig. 4: a) Mitotic figures were obviously (Hematoxylin-eosin stain; original magnification,  $\times 400$ ) and b) they were composed of a population of large ovoid cells with scanty cytoplasm and strong dyeing nuclei. Mitotic figures were obviously (Hematoxylin-eosin stain; original magnification,  $\times 400$ )

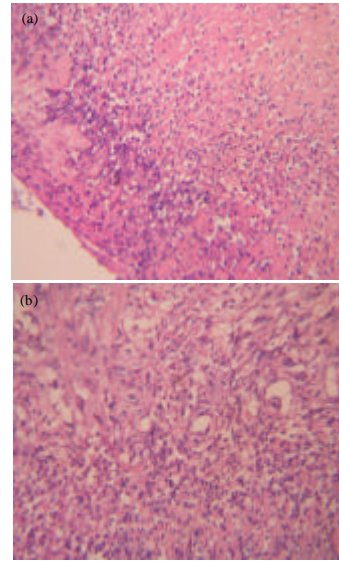


Fig. 5: Histopathological examination; a) a large inflammatory cell infiltrate within the local tumor (Hematoxylin-eosin stain; original magnification,  $\times 400$ ) and b) the tumor was composed of spindle cells with stained nuclei and disordered in alignment. Mitotic figures were rare (Hematoxylin-eosin stain; original magnification,  $\times 400$ )

referred to the hospital, the final diagnosis has been determined only after excision and histopathological examination. Like women vaginal tumor cases, simple excision or enucleation seems to be an appropriate approach (Young *et al.*, 1991; Castle and McLaughlin, 1987; Sadan *et al.*, 1987; Nikolajsen and Toft, 1987).

### CONCLUSION

In most cases, the vaginal tumor is asymptomatic and only discovered by chance during vaginal examination. Vaginal lumps were the most common vaginal disorder. In this study, vaginal hyperplasia and vaginal tumors were showed. However, vaginal tumors are detected most often in older intact bitches.

### ACKNOWLEDGEMENT

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