

MANAGEMENT OF LEIOMYOMAS IN BITCHES: A PROSPECTIVE STUDY

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This study was conducted on bitches presented at Department of Veterinary Gynaecology and Obstetrics, Veterinary College, Hebbal, Bengaluru. The bitches tentatively diagnosed as leiomyoma based on physical examination and ultrasonographic examination were studied. Over a period of 6 months, 7 cases were reported. The animals presented were intact females belonging to different breeds, with average age 10 years. Bloody vaginal discharge was the major clinical symptom along with anorexia, perineal swelling, mass protruding from vulva, difficulty in urination and defecation. The tumors were generally multiple with varying size. Blood parameters like haemoglobin, packed cell volume, platelet count, white blood cell count were studied. Serum biochemical values of creatinine and SGOT were also studied to evaluate the kidney and liver function of these animals. All parameters except leukocyte count were within the physiological reference range. Surgical excision of mass along with ovariohysterectomy was done to treat the animals successfully. The excised mass was subjected to histopathology for confirmatory diagnosis of leiomyoma.

Keywords: Bitches, Histopathology, Leiomyoma, Surgical excision.

Leiomyoma are tumours of mesenchymal origin usually including smooth muscle cells. It can arise in any organ with a tissue or mesenchymal connective component. They are benign, firm, tan-coloured, nodular tumors that are made up of bundles of intertwining smooth muscle cells, interspersed with collagen fibres. Leiomyoma may be found in many organs including the trachea, gastrointestinal system, urinary tract, prostate and female reproductive tract. Leiomyoma account for 2.4% (Smathi *et al.*, 2016) of all canine neoplasms with about 85% of leiomyomas occurring in the reproductive tract of bitches arise from the vagina, vestibule and vulva (Susaneck, 1981).

The most common tumor in the genital tract of bitches is benign smooth muscle tumors of vagina and vulva, and the average age at diagnosis is 10.8 yrs. (Klein, 2001). In canine tumors of reproductive tract were recorded ranging in age group from 2 to 18 years of age. The smooth muscle tumors may be classified as leiomyomas, fibroleiomyomas, fibromas or polyps on the basis of connective tissue present (Klein, 2001; Mac Lauchlan and Kennedy, 2002). The age, breed and parity of the animals are said to have a significant influence in the incidence of leiomyomas

(Prashanth, 2014).

Materials and Methods

Female dogs presented to the clinics at Dept. of Veterinary Gynaecology and Obstetrics, Veterinary College, Hebbal for a period of 6 months from March 2017 to August 2017 were studied.

Seven bitches were used in the study belonging to different breeds including 2 Labrador Retrievers, 1 Great Dane, 1 Cocker Spaniel, 1 Spitz and 2 Non-descript bitches. The age of the bitches ranged from 7-15 years with an average of 10 years. The bitches studied were all nulliparous and intact. The animals were presented with different complaints. 2 bitches were presented with an ulcerated, pedunculated mass protruding from vagina (Fig 1). One bitch was presented with history of bulging in the perineal region that slowly increased in size over a period of 15 days. Four bitches were presented with history of vaginal discharge that was persistent over different periods of time as short as 2 days to as long as 2 months.

Digital examination and abdominal palpation were done in all presented bitches. In 2 bitches presented with vaginal discharge digital examination revealed presence of intraluminal masses, and 2 bitches revealed

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presence of hard mass in caudal abdomen suggestive of mass within the cervix. Bitches with mass protruded from vulva showed pedunculated mass which was ulcerated due to rubbing on floor. The mass was said to be protruded for around 5 and 7 days in the two cases presented. The bitch with perennial swelling revealed the presence of intraluminal mass on digital examination.

A detailed haematological study was done in all bitches along with serum creatinine and SGPT to evaluate the status of

kidney and liver of the bitches. The average haemoglobin value being 11.58 gm/dl (reference range 12-19 g/dl), with average PCV 34.18% (reference range 35-57). The average WBC count was 28,000 cells/mm³ (reference range 5-14.1 ×10³) and the platelet count was 3.312 lakh cells/mm³ (reference range 211-621 lakh cells/mm³). The average creatinine value was 2.49 mg/dl (reference range 0.5-1.7 mg/dl) and SGPT value was 27.18 u/L (reference range 10-109 u/L).



Fig-1: Vaginal mass protruding from vulva



Fig-2: Ultrasonographic image of cervical leiomyoma

Trans-abdominal ultrasonographic scanning was done in bitches with vaginal discharge. The masses appeared as well-defined solid masses with heterogeneous structure within the myometrium and absence of hypoechoic lacunae within the tumor was suggestive of leiomyoma as a tentative diagnosis (Fig 2). Ultrasonography also revealed presence of anechoic pockets anterior to urinary bladder in 2 cases suggestive of pyometra.

Bitches tentatively diagnosed as having tumor mass in the vagina and cervical region were subjected to surgical excision of the tumor mass and ovario-hysterectomy was done. Pre-operative care including atropine sulphate @ 0.04mg/kg b.wt., I/M, diazepam @ 0.5 mg/kg b.wt., I/V, and anaesthesia was induced using propofol @ 2-5 mg/ kg b.wt., I/V,. The excision was done using episiotomy incision for the masses isolated in the vagina. When the leiomyoma was associated with pyometra as in 2 cases with vaginal discharge or cervical tumor mass, it was removed by mid-ventral incision along with ovario-hysterectomy. All bitches were treated with

post-operative antibiotics and alternative day wound dressing on the surgical site.

Results and Discussion

All animals recovered uneventfully after treatment. Encapsulated masses varied in size from 2-10 cm in length and weighed from 10 gm to 250 gm (Fig 3). Macroscopically the masses were capsulated and hard in consistency. The number of masses varied from one to six. The extramural masses were pedunculated with a prominent mass. The histopathological results were diagnostic of leiomyoma in all samples.

The masses were round to oval, encapsulated, well defined and varied in number in the cases studied. The intra-luminal masses seen were pedunculated. These physical characteristics were similar to the findings described by Kang and Holmberg, 1983. In this study the cases of leiomyoma were seen in older intact females than in younger neutered dogs. According to Millan *et al.*, 2007, this could be due to repeated exposure of the reproductive tract to estrogen and progesterone hormones.



Fig-3: Gross appearance of vaginal leiomyoma

In this study non-pedunculated tumor masses were found in extra-luminal region in bitches presented with perennial swelling. They grow in concentric way, either towards the vestibular area or towards the cervix. This growth can locally affect the function of other organ, manifested as clinical signs of leiomyoma including dysuria; constipation and tenesmus based on extend of obliteration of urethra or rectum by the intraluminal mass. Bitches also exhibit signs like vaginal discharge, vulvar licking, anorexia, weight loss, polyuria and polydipsia. Among these the most common sign was vaginal discharge in our study, 61.9% of bitches having vaginal tumors showed bloody vaginal discharge, while 33.33% and 4.76% bitches showed pus and mucoid vaginal discharge respectively. In our study also 2 bitches showed pyometra and were treated accordingly. In almost all bitches the mean blood parameters like haemoglobin, platelet count, packed cell volume, creatinine and SGOT were all in the normal physiological reference ranges whereas the mean total leukocyte count was found to be as high. A course of antibiotic therapy was administered as all bitches had an elevated leukocyte count. Ultrasonography was done to diagnose concurrent pyometra and cervical or uterine masses. Ovariohysterectomy was also done in all bitches to reduce the chance of recurrence. Treatment for vaginal leiomyoma is usually surgical excision as they are benign. Chemotherapy is said to have less efficiency in complete regression of the mass. The bitches studied and treated recovered uneventfully and no recurrence was reported. Leiomyomas usually have good prognosis as they are benign.

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