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Surgical Management of Vaginal Leiomyoma in Bitch

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ABSTRACT

Vaginal tumors are more common in bitch as compared to tumor of upper reproductive organs. Vaginal leiomyomas are benign solid tumors of the vagina. Two bitches were presented to Teaching Veterinary Clinics, College of Veterinary Sciences & A.H., Selesih with a gross lesion of large mass around vagina in one dog and other one having swelling on external genitalia. Clinical examination revealed round, solid mass of 5-7 cm diameter. A complete surgical excision was performed by vaginal route. Animal recovered uneventfully with no relapse of tumorous growth on the incision site till report. On the basis of gross and histopathologic findings, a diagnosis of leiomyoma was made.

Keywords: Bitch, leiomyoma, vagina and surgical resection

Dog is one of the best companion animals for men from the time being. In Mizoram, day by day keeping a dog as companion animal is going to be a tradition. These dogs are suffering from different reproductive diseases and leiomyoma one of them (Ahuja *et al.*, 2017). Before going to treat the animals, it is very important to distinguish whether these neoplasms are benign or malignant and to differentiate them from other conditions such as hyperplasia, granulation tissue or abscessation.

Neoplasia of reproductive system in bitch is more common in lower reproductive tract i.e. vagina and vulva, as compare to uterus and ovaries. Tumors of tubular genital tract of female accounts for 3 % of all canine tumors and of this 85-90% occur in vulva, vagina and vestibule (James *et al.*, 2012). Majority of the canine vaginal or vulvar neoplasms are leiomyoma, leiomyosarcoma, fibroma, and transmissible venereal tumor (MacLachlan and Kennedy, 2002) and Leiomyoma is a major tumor of smooth muscle cells that may arise in any organ with a connective tissue or mesenchymal component and have been found in many organs including female reproductive tract (James *et al.*, 2012; Singh *et al.*, 2014). These types of tumors are usually seen in medium aged non-spayed dogs (Koestner and Higgins, 2008). Vaginal leiomyomas may be single or multiple, intraluminal or extraluminal and usually round or oval, well defined and encapsulated.

The size and consistency may vary depending upon duration of growth, becoming firmer due to an increase in connective tissue. Large intraluminal tumors may protrude through the vulva, while extraluminal tumors tend to cause perineal swelling (Umamageswari *et al.,* 2016). In association of leiomyomas of the reproductive tract, the estrogen secreting tumors or ovarian follicular cysts is also established by scientists. The present report is planned to execute the properly diagnosis of vaginal leiomyoma and manage by surgical procedure to find the follow up result.

Case history and clinical observations

Two bitches were presented in Teaching Veterinary Clinics, College of Veterinary Sciences & A.H., Selesih, Aizawl, Mizoram with red mass in between the vulva lips in one and other one having swelling on external genitalia.. There was foul smelling discharge from vagina in both the cases. There was gross distortion of the perineal area caused by a swelling between the anus and the vulva. After clinical examination it was found that a big soft fat like mass was protruded from the outside of vulvar lips in one dog and in another dog it was remain inside and palpation revealed that it was from vagina. The skin and tissue overlaying the mass were intact and appeared normal (Fig. 1, A, B). The bitch was facing trouble in locomotion. Body condition was normal and body temperature was 39.8°C. No abnormalities were noted regarding their appetite, respiration and pulsation values. Heart and pulse rate were within the normal ranges in both the cases. Preoperative evaluation consisted of physical examination, vaginal and rectal palpation, a serum chemistry profile and ultrasonographic examination of the entire abdominal cavity including the lower urogenital tract, and thoracic - abdominal radiographs for evidence of metastasis and the examination of the reproductive tract revealed, in the both cases, multinodular masses extending caudally to the vagina. At other bitch, ultrasonographic and radiographic examinations revealed a heterogeneous mass that compressing the rectum. The chest and abdominal radiographs showed no evidence of metastasis.

The serum chemistry profile and haematological parameter were near to normal range. Animal was not having and difficulty in urination and defecation.

TREATMENT

After giving preanaesthetic Atropine Sulphate @ 0.04 mg/kg S/C, animal was sedated using combination of Xylazine @ 2mg/kg B.W and Ketamine @ 10 mg/kg B.W. Catheterization of urinary bladder was done by using sterilized urinary catheter. Prepared the surgical site aseptically and the mass was cleaned. Incision

Fig. 1: Vaginal Leiomyoma in two Bitches. **(A)** Leiomyoma at external genitalia, **(B)** Leiomyoma inside the genitalia

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was giving due concern to the urinary meatus and considering involvement of all tumorous part. The growth was excised and closure of the excision site and underlying skin and tissue was sutured with the wall of vagina to give good aesthetic look (Fig. 2 -1A-D).

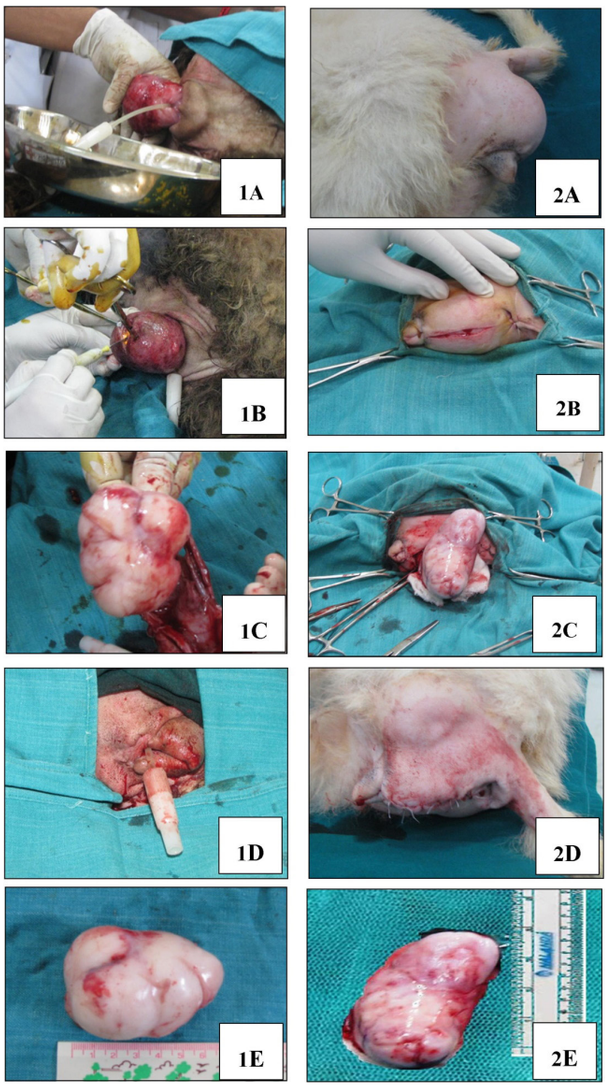

Fig. 2: Surgical Management of Vaginal Leiomyoma in bitch

In second case incision was put over the swelling part of vulva and the mass was exteriorized and skin was sutured (Fig. 2-2A-D). Both the dogs were put on antibiotic cover with Inj. ceftriaxone @ 20mg/kg intravenously and meloxicam @ 0.1mg/kg per orally. This treatment was continued for five days. Sutures were removed after 14 days and bitch recovered uneventfully and did not develop any post-operative complications. Postoperative examination of the resected tumour confirmed that it had been totally excised. There were no recorded postoperative complications. The size of mass in both the cases was approximately 5-7 cm in diameter (Fig. 2-1E & 2E)

Further both the masses were sent to the Dept. of Veterinary Pathology, College of Veterinary Sciences & A.H., Selesih, Aizawl, Mizoram for histopathology and the result revealed that leiomyoma masses were capsulated and composed of smooth muscle cells, similar to the normal vaginal tissue (Fig. 3).

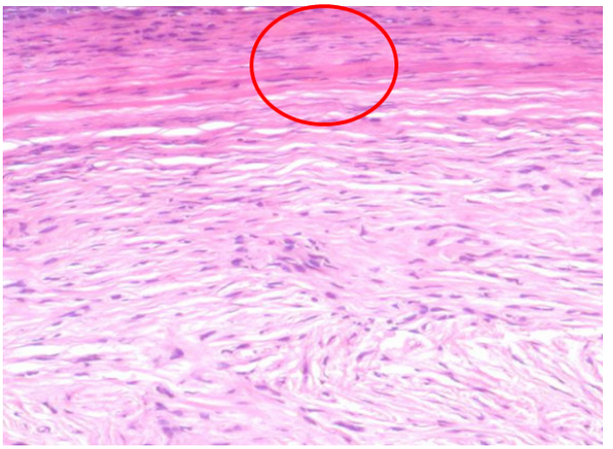

Fig. 3: Histopathological examination of vaginal leiomyoma mass showed clear capsule (H&E staining; Magnification, x200)

DISCUSSION

Leiomyoma is a tumor of smooth muscle cells that may arise in any organ with connective tissue or mesenchymal component (Ashley, 1978). Surgery is the best option for treatment of vaginal tumors (Brodey and Roszel, 1967; Klein, 2001) and radical surgical excision is the

treatment of choice (MacLachlan and Kennedy, 2002). As seen in these cases, local treatment of vaginal leiomyomas primarily involves surgical excision of the mass was very effective (Klein, 2001). Because most tumors arise from the vestibule or the smooth muscle wall of the vagina, they are usually removed per vulva (Withrow *et al.,* 2013). An episiotomy may be necessary for larger tumors (Rollon *et al.,* 2008). Radiation therapy may be considered if surgical removal of the tumour and/or its metastatic foci is not possible. Iatrogenic damage to the urethra or accidental injury to other perineal structures is possible surgical complications. Urethral catheterization will greatly assist in avoiding damage to this structure. Some scientist suggests steroidal hormone play a role in the pathogenesis of tumour and its reoccurrence so for prevention and control of the disease is best achieved by ovariohysterectomy (MacLachlan and Kennedy, 2002). Histopathological examination is necessary to identify the vaginal tumours, as all the vaginal tumours grossly look almost identical. Confirmatory diagnosis with histological examination will not only aid in accurate diagnosis but also for taking decision on treatment.

CONCLUSION

In conclusion, vaginal masses are asymptomatic unless protruded from the vulva and they can only discover by chance during vaginal examination. In present report the cases were confirmed the presence of mass at caudal vagina by vaginal palpation. So, vaginal palpation is an important diagnostic tool for confirmation of leiomyoma present underneath the vaginal mucosa and surgical management of vaginal leiomyoma of bitch revealed that no recurrence of tumour again.

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