Surgical Management of Canine Vaginal Leiomyoma of a Bitch in SAQTVH

A CLINICAL CASE REPORT SUBMITTED BY

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Surgical Management of Canine Vaginal Leiomyoma of a Bitch in SAQTVH

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List of Abbreviations

Abbreviation	Elaboration
SAQTVH	Shahedul Alam Quadary Teaching Veterinary Hospital
CVASU	Chittagong Veterinary and Animal Sciences University
@	at the rate of
mg	milligram
kg	kilogram
i/v	Intravenous
i/m	Intramuscular
DR	Doctor
NaCl	Sodium chloride

Abstract

Vaginal tumors are more common benign, solid tumors in bitch as compared to tumors of upper reproductive organs. A 20 kg, seven years old street dog was admitted to SAQTVH of CVASU, Chittagong, Bangladesh with a gross lesion of large mass around vagina from two years ago and it was increasing day by day. Clinical examination revealed round, solid mass of 20 cm width and 16 cm diameter with 110 gm in weight. After proper diagnosis, the animal was anesthetized with general anesthesia using diazepam and ketamine combination and local anesthetics also used for maintenance. The animal was stabilized with 0.9% Nacl isotonic solution. Surgical correction was performed by total resection of tumor mass and the resected part was transferred to pathology lab for histo-pathological diagnosis resulting leiomyoma of vagina. Post-operative treatment was maintained with antibiotic and the owner was advised to spay her dog to reduce recurrence of tumor. After 10 days the dog was completely recovered from surgical wound and follow up history for five months revealed no recurrence of tumor.

***Key words**:* Intact bitch, leiomyoma, histo-pathology

Chapter 1: Introduction

Bangladesh is a developing country. Day bay day people are getting interested for rearing pet animal. Dog is one of the best companion animals for men from the time being. In Bangladesh day by day keeping a dog as companion animal is going to be a tradition. Although many breeds are available in Bangladesh, but local breed or street dog is kept as watch dog commonly in Bangladesh. These street dogs are suffering from different types dangerous diseases and lipoma is one of them.

Tumors of the female reproductive tract are divided into two categories mainly those arising from the ovaries and those that are derived from the tubular genitalia (Ahuja et al., 2017). Before going to treat the animals, it is very much important to distinguish whether these neoplasms are benign or malignant and to differentiate them from other conditions such as hyperplasia, granulation tissue or abscessation.

Neoplasms of the female tubular genitalia account for 3% of all canine tumors and among these, 85-90% occur in the vagina and vulva (Noakes et al. 2009). Tumors of mesenchymal origin: leiomyomas, fibro- leiomyomas and fibromas occur most commonly and leiomyosarcomas, lipomas, mastocytomas, adenocarcinomas, squamous cell carcinomas and transmissible venereal tumors occur much less frequently (Rollon et al., 2008).

Leiomyoma is a tumor of smooth muscle cells that may arise in any organ with a connective tissue or mesenchymal component andhave been found in many organs including female reproductive tract (James et al., 2012). Leiomyomas of the reproductive tract in the bitch are frequently associated with estrogen secreting tumors or ovarian follicular cysts andcystic endometrial hyperplasia, mammary hyperplasia and/or neoplasia may also be concurrently found (Yuefei et al., 2012).

Previous reports have shown 73-94% vaginal tumours as benign and pedunculated often with a narrow stalk (Salomon et al., 2004). Vaginal leiomyomas may be single or multiple, intraluminal or extraluminal. The tumor is 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).

Leiomyomas must be differentiated from leiomyosarcomas by histological examination and a good prognosis suggests no metastasis has occurred except at the time of not involving any organ. As vaginal leiomyoma is benign, the prognosis is goodi.

1.2 Objectives:

a) To properly diagnose vaginal leiomyoma by different histo-pathological test
b) To manage vaginal leiomyoma by surgical procedure and to find the follow up result

Chapter 2: Case Presentation

2.1 Study area and duration:

The presented case study was conducted at SAQ teaching veterinary hospital, CVASU, Bangladesh on 29 January, 2017.

2.2 Case history:

In SAQ teaching veterinary hospital,a seven years old dog of 20 kg body weight was presented with a gross lesion of large mass around vagina. From history of that dog, it was informed that this dog was suffered from this condition 2 years ago and it was increasing day by day. The dog was facing problem with its locomotion and parturition. Owner noticed that its appetite was normal but body condition was not good or improved.

Fig. 1: Patient before surgical correction

2.3 Clinical Findings:

After clinical examination it was found that a big soft fat like mass was hanging from the outside of vulvar lips and palpation also revealed it's from vagina. The mass was measured as 20 cm in length and 16 cm in diameter with no hernial sign was palpated. The temperature of the mass was normal. No discharge was coming from

it. The bitch was facing trouble in locomotion. Body condition was normal and body temperature was 38.8°C. No abnormalities were noted regarding her appetite, respiration and pulsation values. Heart rate was 45 per minute and pulse rate was 60 per minute.

Fig. 2: Palpation and measurement of tumor mass

Radiological and Histo-pathological findings:

Radiological image revealed white solid mass near vulva, involving vagina.

In presented case, connective tissue coating covered by a thin layer of stratified epithelium was found histo-pathologically and cells were of smooth muscle origin, lying in parallel bundles with collagen fibers interposed.

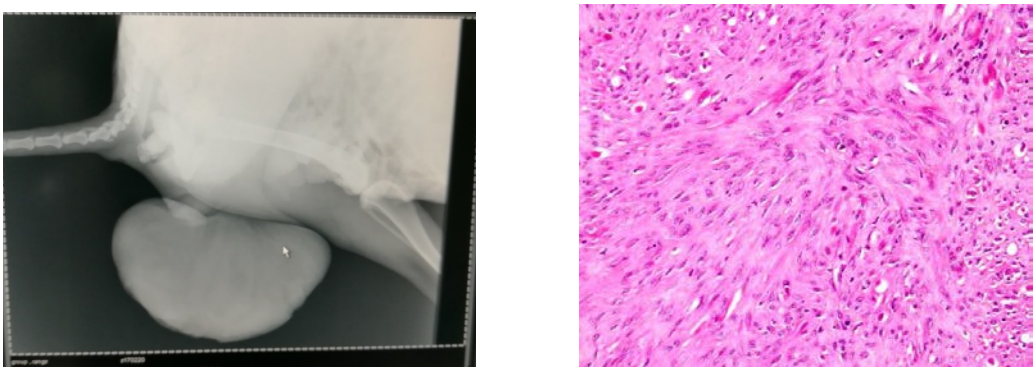

Fig. 3: Radiological and histo- logical picture

2.4Management:

2.4.1Pre-anesthesia and patient preparation:

As premedication, atropine sulphate @ 0.04 mg/kg bodyweight and xylazine @ 1 mg/kg body weight were administered intramuscularly. The surroundings of the tumor site was perfectly shaved and aseptically prepared.

2.4.2Anesthesia: The patient was anesthetized with ketamine and diazepam combination @ 1: 4 ratios and stabilized with 0.9% sodium chloride saline as fluid therapy. In the presented case, local anesthesia was also used in the mid time of the operation as maintenance drug. The animal was placed as dorsal recumbency.

2.4.3Surgical procedure: After aseptic preparation of members of surgery team and surgical site, incision was performed at the base of the tumor. Small blood vessel was sealed by artery forceps and ligation was done in case of larger one. The mass was easily visualized and it was noted that the vagina was extremely dilated. It was firm to the touch and had a well-defined stalk attached to the left ventral vaginal wall.The growth was excised and portions were sent immediately to pathology laboratory for hsito-pathological slide preparation and other portions were fixed in 10% formalin. Closure of the excision site was achieved by approximating the mucosa of the vaginal floor as well as occluding the submucosal dead space using 3-0 chronic catgut. Skin was appositioned by using silk.

Post-operative care: The wound was dressed with povidone iodine for 7 days. The bitch was received antibiotic-Ceftriaxone 3 ml intramuscularly and 1.5 ml of anti-histaminic- Pheneaminmaliet for five days; and 2 ml of meloxicum intramuscularly for five days.

Fig. 4: Aseptic preparation of surgical site

Fig. 5: Incision at base of tumor

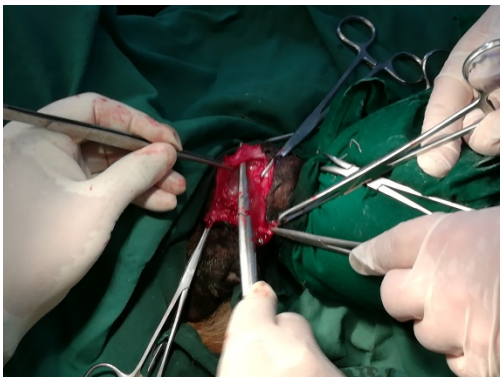

Fig. 6: Blunt dissection to separate subcutaneous tissue

Fig. 7: Hemostasis by clamping and ligation

Fig. 8: Subcutaneous closure by catgut

Fig. 9: Skin closure by silk

Fig. 10: Resected tumor mass

Fig. 11: After surgery tumor area

2.5 Patient care Instruction:

It was advised that animal should be kept in close observation after taking in house. The postoperative treatment should also be continued for 7 days. The patient was advised as to do spaying after complete recovery from this condition not to recur the condition.

.Chapter 3: Results and Discussion

The dog recovered uneventfully from anesthesia and did not develop postoperative complications such as urine retention or incontinence. She was sent home after recovery from anesthesia on treatment with systemic antibiotics for the next five days.

Histo-pathologically the mass had a connective tissue coating covered by a thin layer of stratified epithelium. The tumor cells were of smooth muscle origin, lying in parallel bundles with collagen fibers interposed. Final diagnosis of a leiomyoma was made and the owner was given a good prognosis and the recommendation that the dog should be spayed to prevent regrowth of the tumor. Regrowth or problems associated with the tumor or its removal have not occurred after three months of surgery.

Fig. 12: Old dog after surgery and recovery from anestheisa

About 85% of leiomyomas occurring in the reproductive tract of the bitch arise from the vagina, vestibule and vulva. The incidence of leiomyomas is highest between five

and 16 years of age and in the presented case it was at seven years of age (Koestner and Higgins 2002). The incidence of vaginal leiomyomas in multiparous bitches is considered to be increased by some authors yet other statistics reveal no significant difference in the rate of occurrence between multiparous and nulliparous animals. In canine generally with the exception of canine transmissible venereal tumor, the exact causes of canine vaginal tumors are unknown (Umamageswari et al 2016).

The role of estrogens in the etiology of leiomyomas is unclear. Estrogens are known to be carcinogenic, while the progestational phase of estrus inhibits tumor formation. Hormonal influence on the growth of vulvar/ vaginal tumour has been reported (MacLachlan and Kennedy 2002). In a previous reported case (Sontaş et al., 2010) the tumour was accounted in a hysterectomized poodle dog which had an ovarian remnant, in current case the bitch was intact and hormonal background might have been acted on the formation of the mass detected in the vagina as reported by Sontaş et al., 2010.

Local treatment of vaginal leiomyomas primarily involves surgical excision ofthe mass (Klein, 2001). If few discrete metastatic foci are present, these may also be removed. 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 tumor 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. Prevention and control of the disease is best achieved by ovariohysterectomy (MacLachlan et al., 2002).

Conclusion

In presented case the old unspayed dog was recovered after 10 days of post-surgery and follow-up after five months showed no recurrence of tumor. As the owner was suggested to do overio-hysterectomy as preventive measure it can be practiced by most of the dog owners to prevent one cause of vaginal tumor.

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The author,

November,2017

BIOGRAPHY

I ***Syed Imran,*** the author of this case report would like to introduce as Intern. DR of Chittagong Veterinary and Animal Sciences University (CVASU) have passed four years academic career in faculty of veterinary medicine and attended several clinical training programs on Veterinary Medicine in Bangladesh, India. As a student of Veterinary science, the main mission and vision of my life is to do something better and creative job by dint of my academic knowledge and experience, for the development of livestock as well as development of the economic condition of our country. This case report on vaginal lipoma is the first step to fulfill my dream. I strongly assure that I have done all the works furnished here in this report and I hold entire responsibility of the information given here which are collected from different books, journal and websites.