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## Surgical management of vaginal hyperplasia in canine

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### Abstract

Clinically, vaginal hyperplasia is defined as the protrusion of edematous, hyperplastic mucosa tissue through the vulvar lips. In dogs, it usually appears during the proestrus and estrous phases. In this case a five-years-old, pug bitch was presented with the complaint of prolapse of a large mass through the vulva. On physical examination, all the vital parameters were found normal. During the clinical examination, the case was tentatively diagnosed as type III vaginal hyperplasia. Surgical correction of vaginal hyperplasia with the excision of protruded muscular mass was planned because recurrence was observed, using standard anesthetic protocol.

**Keywords:** Surgical management, anesthetic protocol, vaginal hyperplasia, canine, protruded muscular

### Introduction

One of the significant clinical problems frequently seen in bitches is vaginal hyperplasia (Kumar *et al.*, 2011) [9]. It is frequently mistaken for venereal granuloma and vaginal prolapse. The young bitch most frequently exhibits it during proestrus and estrus. A doughnut- or dome-shaped mass emerges from the vulva when the edematous swelling of the vaginal mucosa cranial to the urethral opening is excessive. Young bitches are most commonly seen to have vaginal hyperplasia during the follicular stage of the first to third estrous cycles, which typically spontaneously regresses during the luteal phase.

Etiologically, it has been described as the high amount of estrogen in young bitches during the follicular phase of their cycles (Arthur *et al.*, 1996, Johnston *et al.*, 2001) [3, 7]. Type I, Type II, and Type III are the three categories recognized in clinical settings. In type I vaginal hyperplasia, the hyperplastic tissue has shifted somewhat toward the base of the vagina but is not visible between the vulvar lips. In type II vaginal hyperplasia, the anterior floor and lateral walls of the vagina protrude beyond the vulvar orifice, forming a pear-shaped projecting mass. In type III vaginal hyperplasia, the vaginal wall is entirely averted and visible outside of the vulvar lips, encircling the entire vaginal mucosa.

The projecting mass of the prolapsed portion may hinder natural mating and is prone to damage, laceration, and ulceration (Gokula *et al.*, 2014) [6]. The urethra may get involved in the protrusion that results from vaginal hyperplasia (Post *et al.*, 1991) [12]. Younger bitches (less than two to three years old) frequently exhibit vaginal hyperplasia during their first three estrous cycles (Ajadi *et al.*, 2016) [1]. It appears that brachycephalic dogs and medium- and large-sized breeds are more likely to have vaginal hyperplasia (Galal *et al.*, 2018) [5].

### History

A five-year-old pug bitch was taken to the Veterinary Clinical Complex (VCC) in Ayodhya because she had been complaining of a big mass prolapsing through her vulva for the past two weeks. Upon clinical examination, a big, semisoft, red, and painless muscle growth was seen emerging out of the vulvar lips (Figure 1, 2). It was discovered that the heart rate, temperature, and respiration rates were all within normal limits. The case was tentatively classified as vaginal hyperplasia based on the clinical examination. Therefore, it was decided to perform radical surgery to remove the prolapsed mass.

**Materials and Methods**

The site was prepared aseptically and surgical excision was done under general anesthesia using atropine sulfate @ 0.04 mg/kg body weight, xylazine @1.5 mg/kg body weight intramuscularly 10 minute post administration of atropine as pre anaesthetics. Maintenance was done using the combination of ketamine and diazepam at 1:1 ratio intravenously. Premedication Inj. Ceftriaxone tazobactam @25mg/kg bwt. IM, Meloxicam @ 0.2mg/kg bwt. SC. Bitch was positioned in dorsal recumbency and a small incision was made above the protruded mass and was removed circumferentially in order to maintain the vaginal cavity intact. A continuous lock stitch pattern suturing with vicryl No 1 was done. Prior to this, the urethral hole was found on the ventral side of prolapsed tissue and catheterized.

Post-operative care included Inj. Ceftriaxone tazobactam @25mg/kg bwt. IM OD, Inj. Meloxicam @ 0.2mg/kg bwt. SC OD, Inj. Conciplex (B- complex) @ 0.8ml slow IV, Tab. Tissue Aid @ 1tab. OD, Syrup Rantac 3ml PO OD, Syrup Multistarpet @ 3ml PO BID was given for 7 days. Antiseptic cream (ANO-metrogyl) was applied regularly on surgical wound. Catheter was removed after 7 days and animal recovered successfully.



**Fig 1 & 2:** Pug with large mass protruding from vulva



**Fig 3:** Catheterization of urethra



**Fig 4:** Incision made over protruding muscular



**Fig 5:** Mass after surgical excision



**Fig 6:** Vulva and vagina after surgery

## Discussion

Vaginal hyperplasia is a clinical condition that usually manifests during the follicular phase of the canine estrous cycle (Kumar *et al.*, 2014) <sup>[10]</sup>. Usually regressing on its own during the luteal phase, it is most frequently observed in young bitches during the follicular stage of the first to third estrous cycles. If the vaginal floor's mucosa folds too much just cranial to the urethral papilla due to an elevated estrogenic response, redundant mucosa may begin to protrude from the vulvar lips (Wykes, 1986) <sup>[14]</sup>. According to some reports, bitches whose vaginal fold prolapses through their vulvar lips respond best to amputation of the prolapsed mass (Post *et al.*, 1991) <sup>[12]</sup>. Boxers and other brachycephalic breeds are the most frequently affected (Jones and Joshua, 1982) <sup>[8]</sup>. Medical intervention is dependent upon the extent of hyperplasia, mucosal injury, and whether the animal is breeding or not. According to Post *et al.* (1991) <sup>[12]</sup>, if the lump is tiny and protrudes occasionally, it will typically diminish during diestrus and no additional therapy is required. Dogs with vaginal hyperplasia, which results in the generation of LH and a rise in progesterone serum concentrations, have also been treated with GnRH. Treatment that raises serum progesterone levels may be helpful in treating these kinds of situations since progesterone is hostile to the effects of estradiol (Wykes, 1986) <sup>[14]</sup>. Except in cases where the mass is huge and apparent from the outside, a little mass may typically go unnoticed. Hormonal treatment, surgical removal (Antonov *et al.*, 2009 & Tiwari *et al.*, 2013) <sup>[2, 13]</sup>, and surgical removal with ovariohysterectomy (Mostachio and *et al.*, 2007) <sup>[11]</sup> have all been used to treat these cases with success, depending on the breed and the severity of condition. Because of the size of the mass, surgical excision was selected in this instance.

## Conclusion

It can be concluded that vaginal hyperplasia can be easily managed by surgical interventions. Post-Surgery, follow-up indicated no recurrences during the estrus cycle, and Ovariohysterectomy (OHE) is recommended to prevent recurrence in future

## Conflict of Interest

Not available

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