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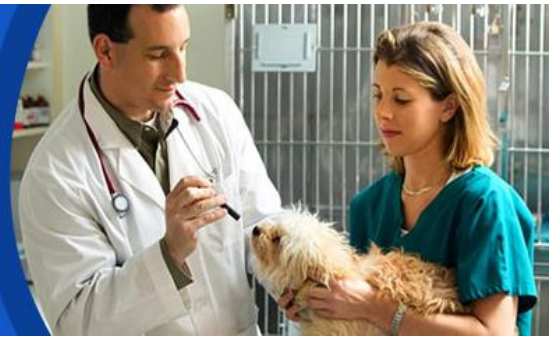

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Vaginal hyperplasia in a dog: Successful surgical management-a case report

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Abstract
A female Labrador dog of 3 years old was presented to the Department of Veterinary Gynaecology and Obstetrics, Veterinary College, Hebbal, with a history of vaginal mass protruding out of the vulva since 6 days, and the animal had proestral bleeding 15 days back. On thorough examination, it was found to be second degree vaginal hyperplasia and it was successfully managed through surgical correction.

Keywords: Vaginal hyperplasia, estrus, doughnut, dog, surgical correction

Introduction
Vaginal hyperplasia in bitches represents an exaggerated estrogen-driven response of the vaginal lining during the proestrus-estrus stages, often leading to protrusion through the vulvar lips (Bucci *et al.,* 2022) [1]. In the early estrous cycle, rising estradiol levels stimulate proliferation and keratinization of the vaginal epithelium, accompanied by pronounced tissue edema (Concannon, 2011) [2]. In some cases, the swelling is so extensive that the mucosa everts outward, a condition termed vaginal mucosal prolapse (Ortega *et al.,* 2012) [3].
Vaginal hyperplasia is categorized into three types based on the extent of protrusion. Type I is characterized by slight to moderate eversion of the vaginal floor that does not extend beyond the vulvar margin. In Type II, a portion of the vaginal floor or walls protrudes through the vulvar opening, typically forming a tongue-like mass with a narrow attachment. Type III represents complete prolapse, where the entire vaginal circumference protrudes through the vulvar rim, creating a doughnut-shaped mass (Bucci *et al.,* 2022) [1].

Materials and Methods
A nulliparous female intact Labrador dog of 3 years old was presented to the Department of Veterinary Gynaecology and Obstetrics, Veterinary College, Hebbal, with a history of vaginal mucosa protruding out of the vulva since 6 days and animal was having proestral bleeding 15 days back. Similar mass was observed by the owner in the last two cycles and it regressed as diestrous phase approached. Careful examination of the mass revealed tongue shaped hyperplastic vaginal mucosa attached to the floor and lateral wall of vagina with a stalk indicating second degree or type II vaginal hyperplasia (Figure 1). Vaginal exfoliative cytology revealed 90% superficial and cornified cells, indicating the animal is in the estrus phase of the estrous cycle.
The protruded mass was washed with normal saline and applied K-Y Jelly®, then it was posted for surgery. On the day of surgery animal was presented after 12 hours of fasting. Premedications used were Atropine sulphate @ 0.04 mg/kg S/C, Xylazine 1mg/kg I/M, Butarphanol @ 0.1 mg/kg. General anaesthesia used was Thiopentone sodium @ 12.5 mg/kg, 1/3rd of the total dose was given for induction and as required for maintenance. Then the surgical site was prepared aseptically, hyperplastic mass was cleaned with Normal saline and povidone iodine solution. Urinary meatus was secured by inserting AI sheath (Figure 2).

Two artery forceps were applied posteriorly away from the urinary meatus, then hyperplastic mass was incised by using B P blade (Figure 3). Simultaneous excision and continuous suturing were done using catgut no. 0 in a simple continuous pattern (Figure 4). Adrenaline-soaked gauze was applied to the vaginal wall to check bleeding, then gauze was removed and povidone iodine ointment was applied on surgical site.

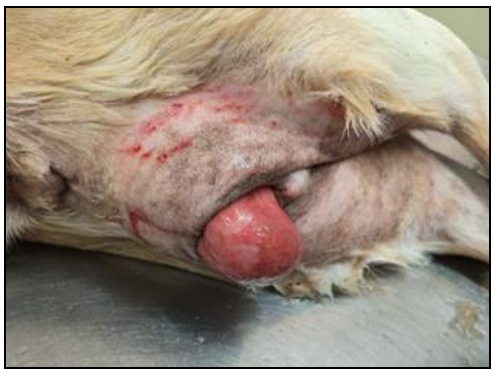

Fig 1: Second degree vaginal hyperplasia in a labrador dog

Fig 2: insertion of AI sheath to secure urinary meatus

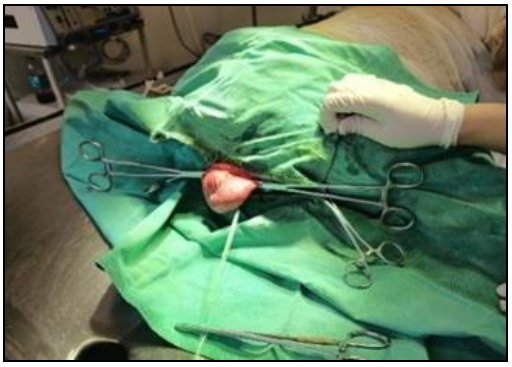

Fig 3: Surgical excision of hyperplastic mass

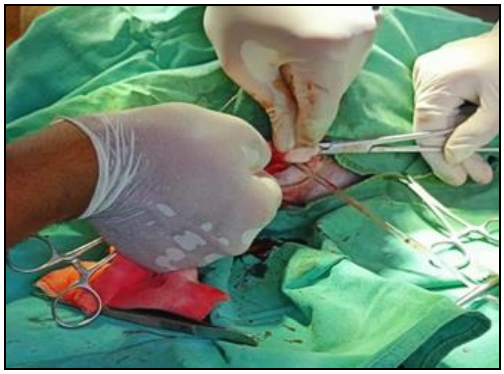

Fig 4: Suturing the mucosa in simple continouos pattern

Fig 5: After excision of hyperplastic mass

Results and Discussion

Post operatively animal was kept under observation for 24 hours. Fluid therapy with lactated Ringer's solution and normal saline was provided to maintain hydration and correct potential metabolic disturbances. Then treated with cephalexin @ 25 mg/kg P.O, bid for seven days, multivitamin syrup was given for 15 days and povidone iodine pessaries were placed once in a day for seven days in the vaginal cavity and the animal eventually recovered.

Vaginal hyperplasia is most commonly seen in young bitches during the follicular phase of their first to third estrous cycles and typically regresses spontaneously in the luteal phase (Devarajan *et al.*, 2024) [4]. The hereditary basis of vaginal prolapse or hyperplasia in dogs remains unclear, though the condition appears to be more prevalent in brachycephalic breeds such as Boxers, Bull Mastiffs, and Neapolitan Mastiffs (Schaeferes-Okkens, 2001) [5]. An exaggerated estrogenic response may lead to excessive folding of the vaginal floor mucosa cranial to the urethral papilla, causing the redundant tissue to protrude through the vulvar lips (Wykes, 1986) [6]. Surgical removal of the mass combined with ovariohysterectomy is generally favored over medical management due to its higher success rate (Mostachio *et al.*, 2007) [7]. However, in this case, surgical resection was performed without ovariohysterectomy, as the owner wished to preserve the bitch's breeding potential. This aligns with Wykes (1986) [6], who emphasized that surgical excision is the preferred treatment for vaginal fold prolapse in breeding animals, as the exposed hyperplastic tissue is not only cosmetically undesirable but can also interfere with mating.

Conclusion

Though spontaneous regression is common, certain cases necessitate medical or surgical management. Surgical intervention provides a definitive resolution and reduces the risks linked to untreated prolapsed tissue, such as self-mutilation, infection, and necrosis. Though surgical resection of mass along with ovariohysterectomy is preferred, in this case only resection of prolapsed mass was performed to preserve the breeding ability of the animal.

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Conflict of interest

Not available

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Not available

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