

SUCCESSFUL SURGICAL MANAGEMENT OF TYPE III VAGINAL HYPERPLASIA IN A BREEDING LABRADOR RETRIEVER: A CASE REPORT

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ABSTRACT

Vaginal hyperplasia is a common reproductive disorder in intact female dogs, primarily occurring during the follicular phase of the estrous cycle due to elevated estrogen levels. This case report describes the successful surgical management of Type III vaginal hyperplasia in a nulliparous, one-year-eight-month-old Labrador Retriever; kept for breeding purposes. The dog was presented with a protruding vaginal mass and stranguria for 12 days. Clinical examination revealed a hyperemic, edematous, and ulcerated doughnut-shaped mass protruding from the vulvar rim. Hematological findings showed a mild leukocytosis, and vaginal cytology confirmed the late estrus stage. Given the need to preserve reproductive function, radical excision of the prolapsed vaginal mass was performed under general anesthesia, avoiding ovariohysterectomy. Postoperative care included antibiotic and analgesic therapy, wound management, and the use of an elizabethan collar. The patient exhibited an uneventful recovery, with normal urination restored the day after surgery. Histopathological examination confirmed vaginal hyperplasia without evidence of malignancy. The dog successfully conceived following estrus 25 weeks post-surgery, demonstrating the efficacy of surgical excision in maintaining reproductive potential. This case emphasizes the importance of individualized treatment strategies in breeding animals, ensuring both reproductive preservation and clinical resolution of vaginal hyperplasia.

Key words: Canine reproduction, histopathology, prolapse, surgical excision, vaginal hyperplasia.

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INTRODUCTION

Reproductive tract anomalies are significant contributors to morbidity and infertility in dogs, with vaginal hyperplasia being one of the most common clinical disorders affecting bitches during their

reproductive cycle. This condition primarily occurs during the follicular phase and can often be mistaken for other vaginal pathologies such as neoplasia, transmissible venereal tumors, or venereal granulomas (Kumar *et al.*, 2011). Despite extensive studies, the exact etiology of vaginal hyperplasia remains unclear, though elevated estrogen levels during proestrus and estrus have been implicated as key factors in its pathogenesis (Schaefers-Okkens, 2001).

Vaginal hyperplasia in bitches is characterized by an exaggerated estrogenic response of the vaginal mucosa, which leads to varying degrees of vaginal tissue protrusion, typically occurring during the proestrus–estrus stages of the canine reproductive cycle (Post *et al.*, 1991). Based on the degree of prolapse, the condition can be categorized into three types: Type I involves mild to moderate vaginal floor eversion without protrusion through the vulvar rim, Type II is marked by partial protrusion through the vulvar rim forming a tongue-shaped mass, and Type III is a complete prolapse of the vaginal circumference, creating a ring-shaped mass (Manothaiudom and Johnston, 1991). The exposed tissue is highly prone to trauma, laceration, and ulceration, which can impede natural mating and exacerbate the clinical challenges (Krishnan *et al.*, 2014).

Vaginal hyperplasia commonly affects younger bitches, particularly those under two to three years of age, and is more prevalent during their initial estrous cycles (Ajadi *et al.*, 2016). While the condition often resolves spontaneously during diestrus,

recurrence rates during subsequent estrous cycles are high, ranging from 66% to 100% (Johnston *et al.*, 2001; Alan *et al.*, 2007). The management of vaginal hyperplasia is influenced by factors such as the severity of prolapse, the reproductive status of the affected bitch, and the owner's breeding intentions. Treatment approaches vary from conservative medical management to surgical interventions, including mass excision or ovariohysterectomy, the latter being a definitive measure to prevent recurrence (Babu *et al.*, 2020). However, in breeding dogs, surgical treatments must be carefully considered due to the potential impact on reproductive capabilities, often making these cases complex and challenging for veterinary practitioners.

CASE HISTORY AND CLINICAL OBSERVATIONS

A nulliparous, intact, one-year-eight-month-old Labrador Retriever female, kept for breeding purposes, was presented at Pet Life Care Animal Hospital by Sarvodaya Foundation in Faridabad, Haryana. The primary complaint was a protruding mass from the vulvar region, accompanied by straining during urination for the past 12 days (Fig. 1).

Clinical examination revealed a non-reducible, doughnut-shaped, hyperemic, and edematous mass with a semisolid consistency, attached to the vaginal floor by a stalk and protruding beyond the vulvar rim. The mass exhibited ulceration due to traumatic wounds and was associated with purulent discharge (Fig. 2). Abdominal

palpation indicated a distended urinary bladder, with urine being expressed through the urethral meatus upon external abdominal compression.

According to the owner, the dog had experienced proestrus bleeding approximately 15 days prior, with no similar protrusion observed in previous estrous cycles. Despite the condition, the animal appeared healthy, with a good body condition and normal physiological parameters. Hematological analysis showed a slight elevation in total leukocyte count (21×10^3 ; reference range: $6-17 \times 10^3/\text{cu. mm}$), while other parameters remained within normal limits. Exfoliative vaginal cytology confirmed that the dog was in the late estrus stage of the estrous cycle, leading to a diagnosis of Type III vaginal hyperplasia.

Given the breeding intent, preserving the dog's reproductive function was a priority, making ovariohysterectomy an unsuitable option. Instead, the condition was managed surgically through radical excision of the prolapsed vaginal mass under general anesthesia.

Surgical Intervention and Perioperative Management

Premedication was administered using atropine sulfate (0.04 mg/kg b.w., i/m) and butorphanol tartrate (0.2 mg/kg, i/m), followed by induction with propofol (4 mg/kg, i/v). Maintenance of anesthesia was achieved with isoflurane (2–3%) in oxygen following endotracheal intubation.

The patient was positioned in sternal recumbency with the hindlimbs off the table, and a soft padding was placed beneath the pelvis to prevent nerve compression. Pre-surgical preparation included clipping the hair around the perineal region, securing the tail, and scrubbing the area with 0.3% chlorhexidine gluconate solution. To protect the urethral orifice and maintain its patency, urinary catheterization was performed using a 10FG infant feeding tube.

To control hemorrhage, circumferential ligatures were placed from the outer vaginal wall through the vaginal lumen using polyglactin-910 sutures (size 1-0) with a round needle, effectively ligating the major blood vessels of the vaginal wall. Throughout the procedure, vaginal lumen patency was continuously monitored using a sterile syringe. The prolapsed mass was carefully excised using a combination of a scalpel blade and electrocautery, while a simple interrupted suture pattern with the same suture material was used to appose the incised edges of the vaginal wall. The vaginal stump was thoroughly cleaned of blood clots and carefully inspected for hemorrhage before being repositioned (Fig. 3). Urethral patency was confirmed by free urine flow through the catheter before its removal.

A sample of the excised vaginal tissue was fixed in 10% phosphate-buffered formalin and submitted for histopathological examination. The findings confirmed hyperplasia of the stratified squamous keratinizing epithelium with ulceration, covered by a dense acute inflammatory

exudate composed of degenerated and intact neutrophils and congested blood vessels (Fig. 4). The underlying tissue exhibited mild chronic inflammation with no signs of granuloma, dysplasia, or malignancy.

Postoperative care involved daily wound cleaning and medical management with antibiotics, analgesics, and multivitamins. Ceftriaxone (20 mg/kg, i/m) and meloxicam (0.2 mg/kg, i/m) were administered once daily for five days as an antibiotic and analgesic respectively, along with 1.5 ml of multivitamins. An elizabethan collar was placed to prevent self-inflicted trauma.

The patient exhibited an uneventful recovery, with normal urination restored the day after surgery (Fig. 5). There was no recurrence of the condition, and the dog entered estrus 25 weeks post-surgery, successfully conceiving after breeding.

CONCLUSION AND DISCUSSION

Babu *et al.* (2020) reported that Labrador Retrievers exhibited the highest incidence of vaginal hyperplasia (48.94%) among dog breeds, whereas the lowest occurrence was observed in German Shepherds, Spitz, and Dachshunds (2.13%). The condition was most prevalent in dogs aged one to two years (43.62%), with the lowest incidence in those over four years old (13.83%). Additionally, vaginal

hyperplasia was found to be more common in nulliparous (60.71%) and intact (100%) dogs. Previous studies have also documented a high recurrence rate (66%–100%) in affected bitches that underwent conservative treatment (Sontas *et al.*, 2010; Galal *et al.*, 2018).

The successful management of Type III vaginal hyperplasia in this nulliparous Labrador Retriever demonstrates the effectiveness of radical surgical excision in preserving reproductive function. Timely intervention, meticulous surgical technique, and comprehensive perioperative care ensured an optimal outcome, preventing recurrence and allowing the dog to conceive successfully in a subsequent estrous cycle. This case highlights the importance of individualized treatment approaches in breeding animals, balancing reproductive preservation with surgical resolution of pathological conditions.

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CONFLICT OF INTEREST

There is no conflict of interest.



Fig. 1: The female Labrador Retriever dog presented with protruding mass from the vulvar region.

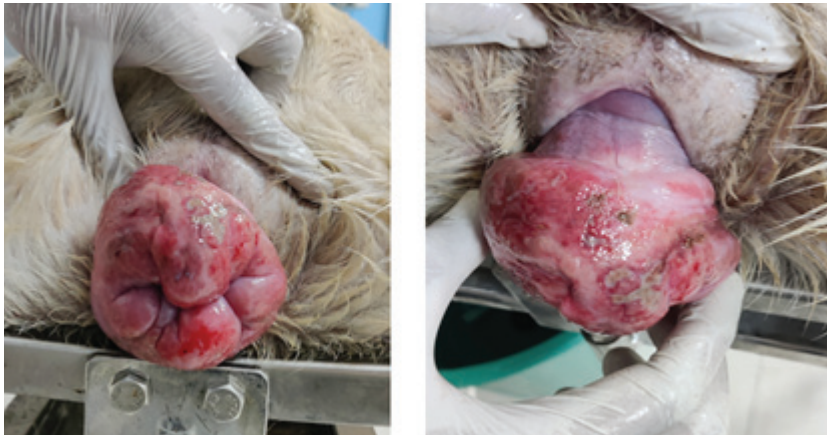


Fig. 2: Photographs showing doughnut-shaped, hyperemic, and edematous mass with ulceration due to traumatic wounds.

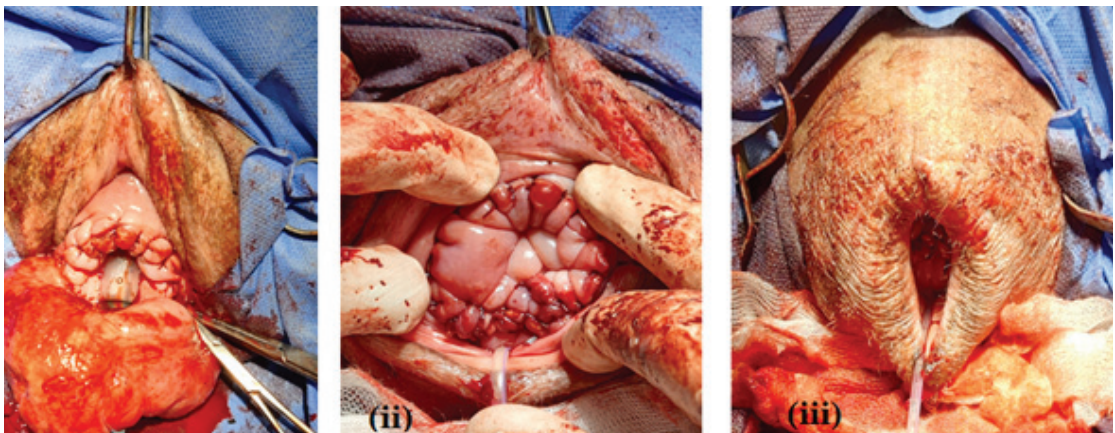


Fig. 3: A series of photographs depicting: (i) ligation of major vessels and incision of the mass, (ii) apposition of the incised edges vaginal lumen using an interrupted suture pattern, and (iii) repositioning of the lumen following the surgical procedure.

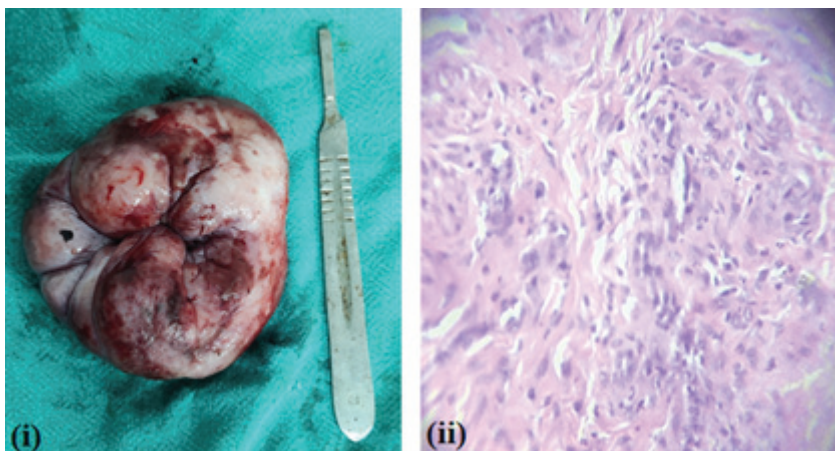


Fig. 4: Photographs displaying (i) the excised mass and (ii) a histopathological examination revealing hyperplasia of the stratified squamous keratinizing epithelium, along with inflammatory exudate and congested blood vessels.

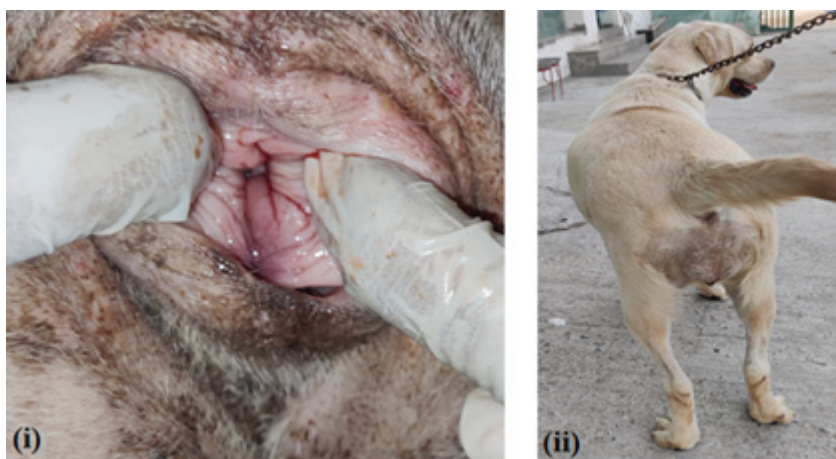


Fig. 5: Photographs from the 7th post-operative day showing (i) a glistening, pink vaginal mucous membrane with no signs of intraluminal stricture formation and (ii) the dog exhibiting no signs of inflammation or postoperative complications in the external genital region.

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