

MANAGEMENT OF THREE CATEGORIES OF VAGINAL FOLD PROLAPSE IN BITCHES

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[Received: 01.5.2018; Accepted: 05.11.2018]

{DOI 10.29005/IJCP.2018.10.2.127-130}

Vaginal fold prolapse in dogs is an infrequent condition occurring in the young bitch during the first or second follicular phase under the influence of oestrogen, with high recurrence at subsequent oestrus. The present paper discusses the clinical presentation of three different categories of the condition; its conservative, therapeutic and surgical management practiced in four clinical cases. The value of a simple surgical technique for treatment of second degree vaginal fold prolapse is also described.

Keywords: Dog, Vaginal hyperplasia.

Vaginal hyperplasia is one of the important clinical conditions commonly observed in young bitches of less than 2 to 3 years of age. It occurs because of an accentuation of the estrogenic response of the vaginal mucosa (hyperemia, edema) normally seen during proestrus and estrus in the bitch. An exaggeration of this estrogenic response can result in excessive mucosal folding of the vaginal floor just cranial to the urethral papilla such that redundant mucosa begins to protrude through the vulvar labia (Soderberg, 1986). The exposed tissue rapidly becomes edematous and inflamed and is easily traumatized. It's most frequently observed during the first estrous period and usually spontaneously regresses during the luteal phase. However, recurrence is common during successive estrous periods. Though, this condition has been traditionally referred to as vaginal hyperplasia and vaginal prolapse, it is in fact not a true organ prolapse and hyperplasia and since the involved tissue is extremely edematous, it is better to use the terms vaginal edema and vaginal fold prolapse (Schaefer-Okkens, 2016). Treatment depends on the extent of the fold prolapse, breeding or non-breeding bitch and the prolapse is present during estrus or at the end of pregnancy. Three categories of vaginal fold prolapse and its therapeutic and surgical management is discussed.

Materials and Methods

The present report describes the evaluation and management of four bitches diagnosed with vaginal fold prolapse brought to University Veterinary Hospital, Kokkalai, KVASU. Three dogs aged 2 to 3 ½ years, was presented with complaint of mass hanging from vagina while one aged 1 ½ years was presented with complaint of breeding difficulty.

Case-1:

A Labrador retriever aged 1 ½ years, was presented with complaint of difficulty during natural mating in the previous cycle and consequently for a pre-breeding evaluation in the current cycle with a history of proestral bleeding since 9 days. Vaginal examination revealed the presence of small bulging, suggestive of moderate eversion of vaginal mucosa cranial to the urethral opening which prevented a normal vaginal inspection. Exfoliative vaginal cytology revealed predominance of superficial cells and RBC's indicative of late pro-oestrus. The case was diagnosed as first degree vaginal fold prolapse and was advised follow up two days later to identify the progression of oestrous cycle stage. On review, vaginal examination revealed spontaneous regression of the vaginal swelling and exfoliative vaginal cytology revealed predominance of superficial anuclear cells suggestive of oestrus stage. Natural mating was advised on alternate days after application of lubricating jelly. Successful breeding was reported after

moderate application of lubricating jelly in the vaginal tract.

Case-II:

A three year old pug that exhibited proestrual bleeding for 10 days was presented with complaint of a mass protruding from vagina since three days. Clinico-gynaecological examination revealed protrusion of the vaginal mucosa through the vulva labia which appeared in the form of a tongue. Exfoliative vaginal cytology revealed predominance of superficial anuclear cells suggestive of oestrus stage. Neutrophils were also detected in cytology owing to vaginitis from the exposure of the tissue. The condition was diagnosed as second degree vaginal fold prolapse (Fig.1a) As recurrence of the condition is common during successive estrous periods which is likely to interfere



Fig. 1a

In case II and III of second and third degree vaginal hyperplasia, medical management with 500 I.U of human chorionic gonadotropin to induce ovulation and oral antibiotic medication with Tab. Cefalexin @20 mg/kg b.wt, BID for 5 days was provided. On review after five days, exfoliative vaginal cytology indicated a met-oestrous stage and surgical amputation of the prolapsed vaginal mass was performed. Following pre-anaesthetic medication with Inj. Atropine sulphate and Inj. ylazine, anaesthesia was induced with Ketamine @ 5mg/kg body weight and maintained with 2% Isoflourane. In second degree vaginal hyperplasia, the bladder was catheterized and a large needle threaded with two strands of

with the breeding act, surgical excision of the prolapsed mass was decided.

Case-III:

A two year old pug was presented with a history of spotting since 11 days and a complaint of large mass protruding through vulva that progressed concurrently with spotting. Clinico-gynaecological examination revealed a complete protrusion of the entire circumference of the vaginal mucosa with exteriorization of the urethral orifice and prolapsed mass was visible as a dough nut. Exfoliative vaginal cytology revealed predominance of superficial anuclear cells suggestive of oestrus stage and also neutrophil response to vaginitis. The condition was diagnosed as third degree vaginal fold prolapse (Fig. 2) and a surgical excision of the prolapsed mass was decided.



Fig. 2

heavy suture material was inserted and transverse about 1.5 cm distal to urethral orifice through the base of the fold prolapse. Individual sutures were tied on both sides of the base of the prolapse (Fig. 1b). Further, both the sutures were brought around the whole prolapse and were secured again and amputation of the prolapsed mass carried out (Fig. 1c).

In third degree vaginal hyperplasia, after catheterizing the bladder, and maintaining the patency of vaginal cavity with a 20 ml disposable syringe, circumferential excision of the prolapsed vaginal mass was carried out. In both the cases, following amputation, apposition of the vaginal wound edges with 1-0 polyglactin

suture material in a continuous pattern was performed. Post-surgical antibiotic and supportive therapies were provided for 5



Fig. 1b

Case-IV:

A pug aged 3 ½ years, which exhibited proestrous bleeding two months back, was presented with complaint of a mass hanging from the vagina since then. A local practitioner had advised conservative management of the condition expecting a reduction of the mass on progression from proestrous to diestrous stage. The regression of the mass didn't happen as expected. A complete protrusion of the entire circumference of the vaginal mucosa was



Fig. 3

Results and Discussion

Vaginal prolapse occurs in several species, with involvement of the entire vaginal wall; but in bitches, it occurs as an edematous swelling of the vaginal mucosa immediately cranial to the urethral orifice and expanding caudally over the urethral orifice. Hence, the condition is more referred as vaginal fold prolapse which may occur in the young bitch under estrogen influence with

days. All the three dogs had an uncomplicated recovery and none of these dogs exhibited vaginal prolapse in the subsequent oestrus.



Fig. 1c

noticed and was confirmed as third degree vaginal fold prolapse. As it became inflamed, ulcerated with maggot infestation (Fig. 3) and the owner not prepared to maintain the breeding status of the dog, surgical excision of the prolapsed mass along with ovariectomy was decided. Under standard anaesthetic and surgical procedures, excision of the prolapsed mass and apposition of vaginal wound edges done (Fig. 4) as detailed for case III, and an ovariectomy performed.



Fig. 4

recurrence at each subsequent estrus, if the bitch is not properly treated as also reported by Antonov *et al.* (2009) and Schaefer-Okkens (2016). The young age of the dogs under report, the period of occurrence of the condition in all these cases during the proestrus phase and the higher incidence in brachycephalic breeds corroborates with these reports. The clinical manifestations of the condition varies from a small bulge to a

tongue shaped or pear shaped mass and in extreme cases, a dough nut shaped structure protruding from the vulva. The dog in case I had a first degree prolapse indicated by only a small bulge of ventral floor palpable at vaginal examination, while in case II, a tongue shaped prolapse was noticed suggestive of a second degree prolapse relating to ventral floor of vagina and in cases III and IV, the entire vaginal circumference was involved appearing as a dough nut shaped structure confirmative of a third degree prolapse as also narrated by Schutte (1967). A differential diagnosis of the condition from tumour was basically possible in all these dogs reported, from its incidence at a younger age in contrast to older age for tumours, as well as the time of occurrence during the follicular phase with partial regression during the luteal phase, which is not likely in tumours. Treatment depends on the extent and duration of the condition as well as whether intended for future breeding or not. If the condition is barely visible outside, it will normally recede during the luteal phase. The interference during breeding act as in case I can be managed with assistance and application of lubricating jellies. In bitches with a second or third degree vaginal fold prolapse, which extends outside the vulvar lips, amputation is the treatment of choice as also recommended by Antonov *et al.* (2009) and Tiwari *et al.* (2013). Treatments with hCG was provided in case II and III to induce premature ovulation to obtain advantage of early exposure to

progesterone that might lessen the bleeding at the time of excision of the mass, if otherwise in an oestrogenic phase. Compounds like mibolerone though hastens shrinkage of the mass are not recommended in the breeding bitch as also mentioned by Post *et al.* (1991). No recurrence and also no constrictions of the vaginal tract were noticed in the dogs that underwent an excision of the mass indicating the safety of the procedure that could be practiced in the breeding dogs.

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