CHRONIC VAGINAL PROLAPSE IN A BITCH AND ITS MANAGEMENT

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The present communication describes an unusual case of true vaginal prolapse in a Spitz bitch due to obstructive dystocia presented with a type II vaginal prolapse and its successful management. Initial attempts to reduce and contain the prolapse failed and hence resection of the prolapsed tissue was performed and the bitch recovered completely. The bitch showed no signs of recurrence in the subsequent oestrus cycle. This case is unusual because, although vaginal fold prolapse is mainly seen during proestrus/oestrus, but true vaginal prolapse may occur near parturition, as the concentration of serum progesterone declines and the concentration of serum oestrogen increases but this type of true vaginal prolapse is a very rare condition.

Keywords Vaginal prolapse, Dystocia, Bitch

Introduction

Vaginal prolapse is an uncommon condition in the bitch as compared to other vaginal disorders like vaginal neoplasia, and urethral neoplasia protruding into the vaginal vault (Manothaiudom and Johnston, 1991). Vaginal fold prolapse is the protrusion of edematous vaginal tissue into and through the opening of the vulva occurring frequently during proestrus and oestrus stages of the sexual cycle. Oedematous swelling of the vaginal mucosa may develop under the influence of oestrogen (Johnston *et al.*, 2001). This condition has been referred to traditionally as vaginal hyperplasia and vaginal prolapse. However, because it is not true prolapse and hyperplasia and, since the tissue involved is extremely oedematous, it is better to use the term vaginal fold prolapse (Purswell, 2005).

True vaginal prolapse may occur near parturition, as the concentration of serum progesterone declines and the concentration of serum oestrogen increases (Konig *et al.*, 2004; Rani *et al.*, 2004). Vaginal prolapse occurs less commonly in dioestrus, and normal pregnancy (Johnston *et al.*, 2001; Schaefers-Okkens, 2001).

Based upon the degree of vaginal fold prolapse, Schutte (1967) has described a three-stage classification scheme in dogs. Bitches with type I prolapse have slight-to-moderate eversion of vaginal mucosa originating from the vaginal floor cranial to the urethral opening; type II prolapse indicates protrusion of the vaginal mucosa through the vulvar labia, with the base also originating from the vaginal floor; bitches with type III prolapse have complete protrusion of the entire circumference of the vaginal mucosa, often accompanied by exteriorization of the urethral orifice.

Case History and Observations

A primiparous Spitz bitch aged 18 months old was presented with complaint of protrusion of a pear shaped mass from vulva showing variable degree of inflammatory and necrotic signs. Anamnesis revealed that the bitch had difficulty in whelping but it delivered 3 live pups 12 days back after administration of exogenous oxytocin and calcium preparation. However, it was noticed that after delivery of last pup a pedunculated mass was seen protruding out of vulvar lips. The case was managed by application of purse string sutures by the attending veterinarian on first day postpartum after reducing the prolapsed mass manually under general anaesthesia. Five days afterwards, the sutures were removed but the vagina reprolapsed within 12 hours. Another attempt was made to reduce and contain the prolapse, with unsuccessful results.

A 3 to 4 cm diameter mass arising from cranial floor of the vagina forming a pear-shaped structure was noticed protruding through the vulvar lips. The external urethral orifice was identified ventral to the vaginal prolapse. Clinical eaxmination of the patient revealed sub-normal rectal temperature (99.6^0 F), tachycardia (130 beats per minute) and tachypnea (30 breaths per minute). The animal appeared alert and the colour of visible mucous membrane was pinkish. Careful pervaginal examination failed to palpate any sort of foetus like structure in vaginal canal. Abdominal palpation also failed to reveal any palpable fetal like structure. The animal was subjected to abdominal radiography which did

not reveal any fetal skeleton and hence the bitch was confirmed to be non-pregnant. On the basis of history and clinical observations, surgical resection of the prolapse was suggested because of the chronic nature of the prolapse.

Treatment

Preoperative administration of sufficient quantity of fluid (5% DNS 500 ml) alongwith broad spectrum antibiotics (ceftriaxone @ 25 mg/ kg) and analgesic (meloxicam @ 0.5 mg / kg). General anaesthesia was induced using a combination of xylazine hydrochloride @ 1 mg/ kg b. wt. i.m. followed 10 minutes later by ketamine hydrochloride @ 10 mg/kg b. wt. i.m. With the animal positioned in sternal recumbency, hind limbs were draped over the end of the padded table. A purse-string suture was placed around the anus to avoid soiling of surgical field. The tail was taped dorsally and the perineum was prepared for aseptic surgery. Towel clamps were used to retract the labia of the vulva sufficiently to expose the prolapsed vagina without the need for an episiotomy. A urinary catheter was inserted into the urethra prior to the surgical removal of the redundant vaginal fold.

The prolapsed mass was exteriorized as much as possible. A curved needle threaded with PGA No. 1 was inserted into the prolapsed mass in all four sides 1.5 cm away from the urethral orifice. The free ends of the respective threads were tightened segment wise by applying square knot. Another two strings of suture were placed around base of prolapsed mass cranial to previously placed stay sutures as tourniquet and tightened securely. The stay suture knot ends were held with haemostatic forceps to avoid slippage and retraction of vaginal mucosa while making incision. Careful excision of the vaginal prolapse was accomplished in a circumferential pattern followed by suturing of the incised stump in simple interrupted pattern using PGA No. 2-0. The amputated stump was replaced within the vagina after removing both the tourniquets and the four stay sutures. The urinary catheter was removed at the completion of the procedure. Recovery from anesthesia was uneventful and no complications were observed postoperatively. Postoperative antibiotic coverage comprised of ceftriaxone (25 mg/ kg b. wt.) for 5 days while, pain management was achieved by administration of meloxicam (0.5 mg/kg b. wt. i.m.) for 3 days. There was no evidence of recurrence of the vaginal prolapse during the follow up till next oestrus cycle.

Discussion

Vaginal prolapse has been defined as a protrusion of edematous vaginal tissue through the vulva of the sexually intact female during the time of oestrogen stimulation. Earlier reports suggest that vaginal prolapse occur primarily during proestrus or early oestrous stages of the cycle (Johnston, 1989). However, true vaginal prolapse mainly occurs during parturition or shortly after (Schaefers-Okkens, 2001). Excess ante-partum relaxation of pelvic tissues and increased intra-abdominal pressure may be the aetiology of pre-partum prolapse (Markandeya *et al.*, 2004). In the present case, extreme tenesmus arising from dystocia might have predisposed to the vaginal prolapse.

Vaginal prolapse has been reported in various breeds (Alexander, 1961; Johnston, 1989; Gouletsou *et al.*, 2009). Brachycephalic breeds appear predisposed to vaginal fold prolapse and may possess a hereditary weakness of the perivulvar tissue (Wykes, 1986). The cervix is exteriorized in cases of complete vaginal prolapse but not with partial prolapse but this type of true vaginal prolapse is a very rare condition in bitches (Schaefers-Okkens, 2001).

The prolapse typically regresses and resolves at the end of the oestrous cycle even without any treatment but the recurrence rate in affected bitches is very high (Schutte, 1967). In case of prepartum prolapse, the recommended course of action includes removal of the vaginal prolapse, after whelping or possibly in combination with caesarean section (Alan *et al.*, 2007). However in present case, the prolapse did not resolve on its own and moreover, it was unsuccessfully reduced by application of purse string sutures on two occasions.

Suspected causes of vaginal prolapse include excessive oestrogens and their relaxing effect on pelvic and perineal structures (Roberts, 1986). Constipation, forced separation during coitus and size discrepancy between breeding animals may contribute to the development of true vaginal prolapse (Purswell, 2005). Other probable causes of vaginal prolapse include vaginal tumours (Williams *et al.*, 2005) or trauma

(Arbeiter and Bucher, 1994) but this is fairly rare. The condition may be seen in families of purebred dogs, suggesting a hereditary predisposition (Johnston, 1989). It has been recommended that affected bitches should not be bred, and those not required for breeding should be ovariectomized (Troger, 1970). Hence a more detailed follow-up study is needed to ascertain the hereditary aspect of the vaginal prolapse in dogs. However, in the present case the hereditary effect could not be traced unless otherwise mentioned.

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