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Rectal diverticulum and perineal hernia in dogs: A review of four cases

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Abstract

A report of perineal hernia in four dogs is reported. All four were male uncastrated dogs. In all four cases, there was a history of obstipation. In case 2 there was perianal fistula. There was cystocele in two cases (case 3 & 4). Prostate was also enlarged and herniated due to abscess. Radiographic examination revealed rectal diverticulum in all three cases and soft tissue opacity was noticed in the cystocele cases. Ultrasonography revealed the presence of anechoic and hypoechoic areas responding to bladder and constipated faecal material mass in case three. Following perineal herniorrhaphy, the rectal diverticulum was managed by tacking sutures to obstruct the excess lumen diameter in three cases. In the case 3 and 4, cystocentesis was performed to empty and reduce the bladder into the pelvic cavity through the perineal tear. The rectal diverticulum was very large that diverticulectomy and enteroanastomosis was performed in case 3. In case 1, case 3 and case 4, herniorrhaphy was performed by suturing the pelvic diaphragm. In case 2, the perineal herniorrhaphy was re-enforced by elevation and rotation of the internal obturator muscles. All the dogs were castrated to reduce the recurrence rate.

Keywords: Rectal diverticulum, perineal hernia, cystocele, perianal fistula

Introduction

Perineal hernia is common in olduncastrated male dogs. The weakness of the levator ani and lateral coccygeus muscles contribute to the formation of perineal hernia. The weakness of these muscles arises from increased tenesmus associated with gonadal hormonal imbalances, rectal abnormalities, prolonged constipation, chronic prostatic disease or myopathy. The weakness of the pelvic diaphragm in turn may cause loss of support to the rectal wall causing a rectal diverticulum. In male dogs, perineal herniorrhaphy and castration are suggested for preventing recurrence as hormonal imbalance is found to have a role (Ragni and Moore, 2011)^[4]. The common hernial contents in perineal hernia in male dogs are urinary bladder, prostate, perineal fat and rectum (Gill and Barstad, 2018)^[1]. The treatment may vary depending on the organ involved and the strength of the pelvic diaphragm. The present report discusses four cases of perineal hernia with rectal diverticulum alone and with concurrent conditions like cystocele, prostatic abscess and perianal fistula.

Materials and Methods

All the cases were prepared pre-anaesthetically, by food and water withdrawal a day before the surgery. Oral laxatives were given two days before the surgery. Before surgery, manual emptying of the rectum was performed.

Case 1: Presented with swelling in the right side of the anal sphincter. There was history of obstipation and dyschezia. Rectal examination revealed that there was weakening and a pronounced pouching of the rectal mucosa on the right side. (Fig. 1). Laxatives diet and drugs didn't give any improvement in the condition. The dog was aggressive and needed weekly emptying of rectum under sedation. The faces was dry and hard. Radiography revealed rectal diverticulum and faecal accumulation. Positive contrast radiography using barium sulphate enema revealed a solitary left rectal wall diverticulum (Fig. 2). Case 2: Presented with rectal diverticulum and perianal fistula.

The anal sphincter was malpositioned and the faeces passed through the perianal fistula. Per-rectal examination revealed weakening and moderate pouching of the rectal mucosa on the right side. Laxative diet and drugs were advised and the faeces became semisolid. Plain radiography confirmed accumulation of faecal material in the swelling (Fig. 3.).

Case 3: There was history of obstipation and anuria. The dog became recumbent a day before surgery. Per-rectal examination revealed that there was hard faeces in the rectum which was pressed from behind by a fluid filled organ i.e., bladder which was confirmed by an ultrasonography. Ultrasonography revealed a hyperechoic mass and an anechoic bladder. Radiography showed fluid opacity cranial to the faecal accumulation.

Case 4: The case was brought with a history of obstipation and anuria. Pre-rectal examination revealed hard faeces in the rectum. Ultrasonography revealed hyperechoic mass in the rectum, anechoic bladder and hypoechoic enlarged prostate gland.



Fig 1: Rectal diverticulum in a dog



Fig 2: Positive contrast enema in rectal diverticulum



Fig 3: Plain x-ray showing accumulation of faecal material in the rectal diverticulum

Surgical Treatment

Case 1: Perineal incision followed by plication of the rectal diverticulum and suturing of the pelvic diaphragm using polyamide no: 1. Castration was performed.

Case 2: Perineal incision followed by debriding and suturing the fistulous tract on the rectal wall followed by plication of the rectal diverticulum. The pelvic diaphragm was re-enforced by rotating a flap of the obturator internus muscle (Fig. 4.) which was sutured to the levatorani and coccygeus muscles. Polyamide no: 1 was used for the herniorrhaphy. Castration was performed.

Case 3: Catheterization of the bladder could not be performed. The perineal incision revealed a large thin walled rectal diverticulum (Fig. 5.). An incision was made on the distended rectum to removed impacted hard faecal ball. The rectal diverticulum was emptied. The distended bladder was seen cranial to the rectal diverticulum. The bladder was emptied by cystocentesis and replaced into the abdomen. The weak portion of the rectum was excised and sutured to the healthy portion using 4-0 PGA sutures in continuous pattern followed by a layer of interrupted catgut 3-0. was done. The pelvic muscles were atrophied and hence polyamide sutures were applied to the pelvic area in a mesh like manner so as to close the perineal ring. Castration was performed.

Case 4: The perineal incision revealed rectal diverticulum, bladder and prostatic abscess (Fig. 7.). An incision was made on the distended rectum to removed impacted hard faecal ball. The rectal diverticulum was emptied. The incision was sutured using polyglycolic acid no: 0. Plication of the rectal diverticulum was performed. The distended bladder cranial to the rectal diverticulum was emptied by cystocentesis. The prostatic abscess was also aspirated and evacuated. The pelvic muscles were atrophied and hence polyamide sutures were applied to the pelvic area in a mesh like manner so as to close the perineal ring. Castration was performed.

All cases were given antibiotics and analgesics post-operatively for five days and three days respectively. Laxatives (if needed) and dietary management were also advised for a month post-operatively to prevent the recurrence.

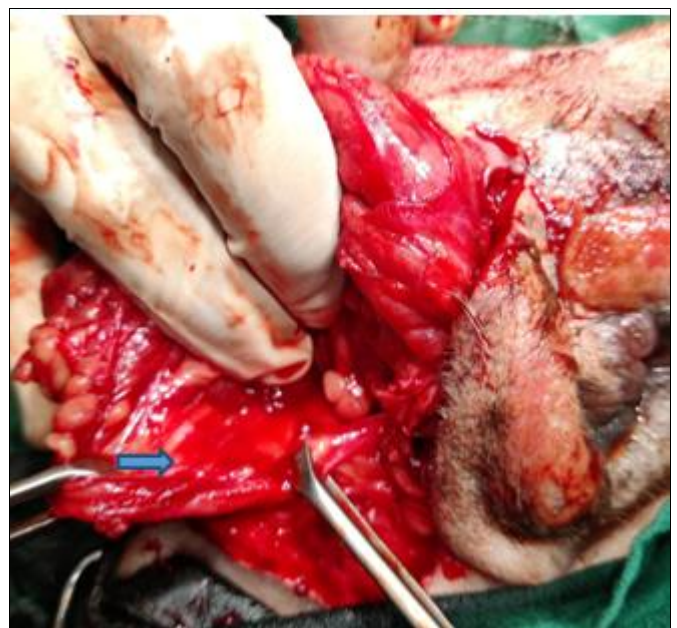


Fig 4: Rotating a flap of internal obturator muscle (arrow) for closure of the hernia ring



Fig 5: Showing the distended rectal diverticulum in case 3



Fig 6: Proctectomy and anastomosis of the rectum in case 3.

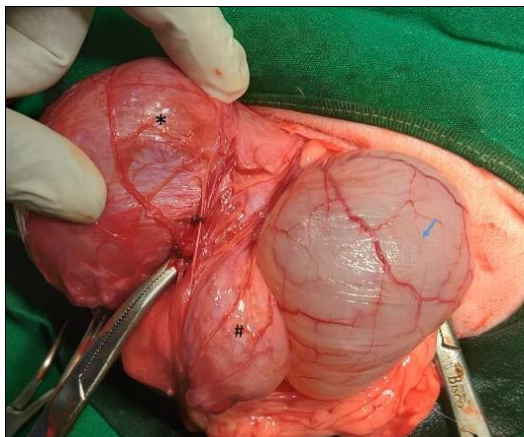


Fig 7: * Rectal diverticulum, # Prostatic abscess and bladder (blue arrow) in case 4.

Results and Discussions

Skin suture dehiscence due to self-mutilation was the main complication noticed. All the animals were maintained on laxative diet. No recurrence was reported in three cases. In case 3, recurrence was reported and re-operated. Rectal diverticulum is often a chronic condition accompanied by perineal hernia and the clinical signs may include constipation, obstipation, dyschezia, tenesmus, rectal prolapse, stranguria, or anuria. The definitive diagnosis of perineal hernia is based on clinical signs and findings of weak pelvic diaphragm musculature during a per-rectal examination. In dogs, perineal hernias are mostly treated by surgical intervention. Appositional herniorrhaphy is sometimes difficult to perform as the levator ani and coccygeus muscles are atrophied and unsuitable for use. Internal obturator muscle transposition is the most commonly used technique. Additional techniques include diverticulectomy, plication of the diverticulum, use of grafts like autologous tunica vaginalis, small intestinal submucosa allograft, bovine pericardium, superficial gluteal and semitendinosus muscle transposition, in addition to the use of synthetic implants for perineal herniorrhaphy (Lee *et al.*, 2012; Mehrjerdi *et al.*, 2013; Guerios *et al.*, 2020)^[3, 2].

Conclusion

It could be concluded that the management of perineal hernia and rectal diverticulum with concurrent conditions like perianal fistula, cystocele, and prostatic abscess in four dogs managed by plication of rectum/enterectomy and enteroanastomosis, perineal herniorrhaphy without or with transposition of obturator internus muscle is discussed. Castration was performed in all cases to prevent the recurrence. The temperament of the dogs, use of E-collar, dietary management, duration and extent of involvement of the rectum and the strength of the pelvic diaphragm or the repair technique and the appropriate management of the concurrent conditions were important factors that determined the outcome of the surgery.

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