CASE REPORT

Rectal Diverticulectomy for Obstipation Induced Rectal Diverticulum in a Cocker Spaniel Intact Male Dog

Bharathidasan Murugan[1], Tarun Vijayakumar[1*], Tamilmahan Paramasivam[1], Gokulakrishnan Marudhamuthu[2], Swathi Moreddy[1], Kishorenandham Sivanandham[1]

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Rectal diverticulum is a blind out-pouching of rectum through the overlying perineal muscle layers, occurring mostly in middle-aged intact male dogs (Saulnier-troff *et al.,* 2008). This condition may occur alone, but mostly it occurs concurrently or as sequel to perineal hernia. The exact cause remains unclear, but it may develop from localized areas of weakness in the rectal wall, which may be either congenital or acquired (Mehrjerdi *et al.,* 2013). If left untreated or inadvertently managed, rectal diverticulum can lead to fecal retention and impaction within the diverticular sac, resulting in impaired defecation and continuous straining, which may subsequently increase the risk of perineal herniation (Lalzawmliana *et al.,* 2019). Various surgical approaches have been described for this condition, such as diverticulectomy, plication, and segmental resection and anastomosis through rectal pull through technique (Maji and Guha, 2012). Diverticulectomy via a lateral perineal approach has demonstrated successful clinical results among those techniques (Lalzawmliana *et al.,* 2019). The present report describes the surgical management of rectal diverticulum via diverticulectomy in a Cocker Spaniel dog.

Case History and Observations

An 8-year old intact male Cocker Spaniel dog was presented to small animal outpatient unit of Madras Veterinary College Teaching Hospital, Chennai with the history of round mass on right perineal region with clinical signs of constipation, tenesmus and dyschezia for past 2 months. No pain evinced on palpation of the mass. On per-rectal digital palpation, a blind cul-de-sac with impacted hardened fecal material was palpated unilaterally in the left lateral aspect of the rectal wall. Plain radiography revealed out-pouching of rectum with fecal stasis upto the level of 7th coccygeal vertebrae (Fig. 1). Haemato-biochemical parameters were within the normal limits. Thoracic radiographs and echocardiography revealed normal study. Based on the clinical examination and plain radiography the case was diagnosed as unilateral left rectal diverticulum and the animal was opted for surgical treatment with rectal diverculectomy.

[1]Department of Veterinary Surgery and Radiology, Madras Veterinary College, TANUVAS, Chennai-600007, Tamil Nadu, India

[2]Department of Clinics, Madras Veterinary College, TANUVAS, Chennai-600007, Tamil Nadu, India

Corresponding Author: Dr. Tarun V., MVSc Scholar, Department of Veterinary Surgery and Radiology, Madras Veterinary College, TANUVAS, Chennai-600007, Tamil Nadu, India. e-mail: drvtarun@gmail.com

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Fig. 1: Rectal diverticulum with fecal stasis upto the level of 7th coccygeal vertebrae

Treatment and Discussion

Preoperatively animal was kept off feed for 72 h and was maintained in intravenous fluid therapy. Sodium phosphate enema was given 3 days before and on the day of surgery for complete rectal evacuation of feces and cleansing.

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The animal was premedicated with Inj. Butorphanol (0.2 mg/kg b.wt.) and Inj. Diazepam (0.25 mg/kg b.wt.) intravenously. Induction was done with Inj. Propofol (3 mg/kg b.wt.) intravenously. Intubation was performed with cuffed endotracheal tube (6 mm) and animal was placed in right lateral recumbency. Maintenance of anaesthesia was achieved with isoflurane and oxygen administered via rebreathing circuit. Spinal anaesthesia was given with 1 mL of 2 % lignocaine in the lumbosacral junction.

The surgical site was prepared and draped aseptically. Skin incision was made about 3-4 inch in curvilinear fashion in left perineal region near to lateral to anus. The fascia was separated and subcutaneous tissues with underlying musculature were bluntly dissected avoiding surrounding vasculature and rectal nerve. Though digital palpation, rectal sacculation was identified, two stay sutures were placed and sacculation was pulled out of the incision and clamped with two atraumatic intestinal forceps carefully to ensure the patency of rectum (Fig. 2). Diverticulectomy was performed above the clamps and blind pouch measuring (4cm× 2 cm) was resected (Fig. 3). Rectal walls were first apposed with horizontal mattress pattern using PDS 3-0 and second layer of cushing sutures were applied and clamps were removed gently as the sutures progresses in parallel fashion to the direction of rectal lumen (Fig. 4). Muscles and subcutaneous tissue were closed in routine manner with simple continuous pattern using PGA 3-0 and skin was apposed with cross mattress pattern using Polyamide 3-0.

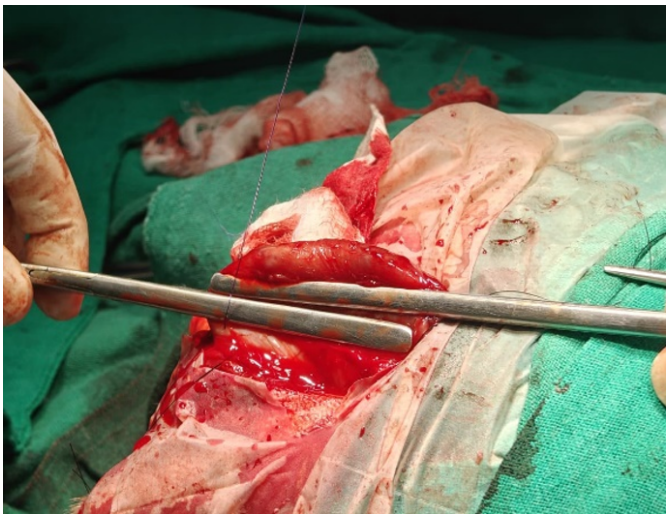


Fig. 2: Rectal diverticulum clamped with atraumatic intestinal forceps

Post-operatively animal was treated with oral antibiotics for 5 days and anti- inflammatory drugs for 3 days and laxatives for 7 days. Owner was advised to feed liquid diet for 3 days, semisolid diet for 4 days followed by solid diet. Skin sutures were removed 15 days after surgery and animal made an uneventful recovery without any post-operative



Fig. 3: Resected rectal diverticulum measuring (4 cm× 2 cm)

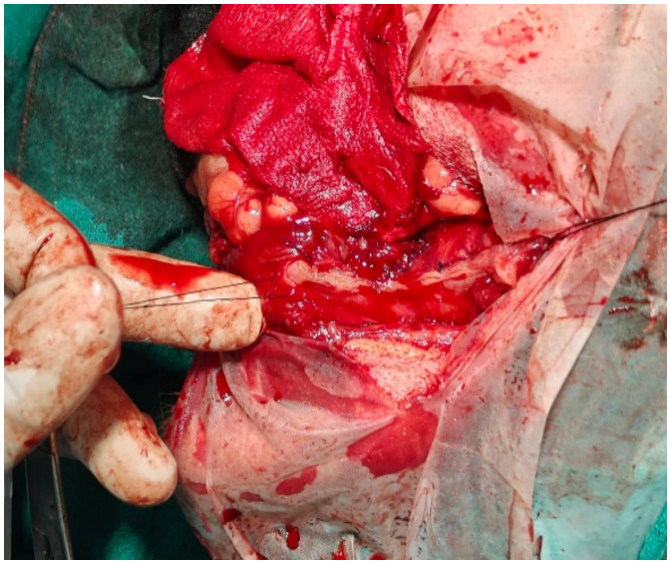


Fig. 4: Double layer suturing in rectal wall following diverticulectomy

complications. Histopathological examination of the resected sac revealed diffuse severe subacute inflammation with hyperplasia of goblet cells and epithelial cells (Fig. 5).

Commonly observed rectal diseases include rectal deviation, dilatation and rectal diverticulum and these frequently coexist with perineal hernia (Krahwinkel, 1983). Rectal diverticulum is often mistaken for perineal hernia as both conditions have similar clinical signs like dyschezia and perineal swelling. In perineal hernias, abdominal or pelvic organs herniate through the weakened pelvic diaphragm whereas rectal diverticulum is pouch like sacculation without rupture of pelvic diaphragm however chronic straining and fecal accumulation may predispose the animals for perineal hernia (Kang *et al.,* 2007). Chronic

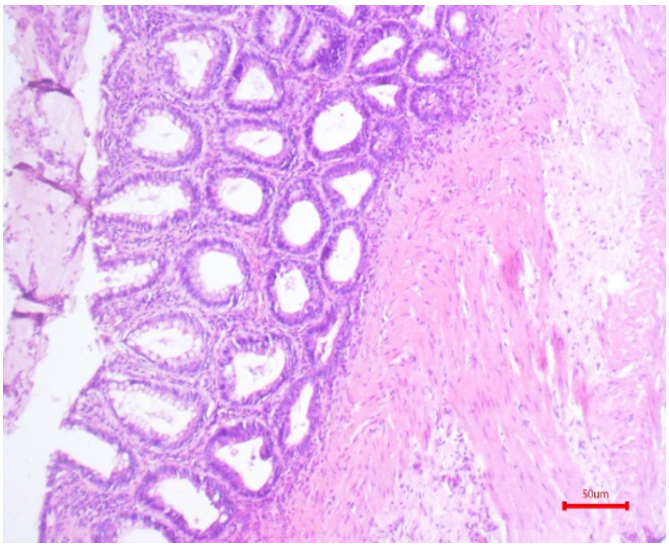


Fig. 5: Severe subacute inflammation with hyperplasia of goblet cells and epithelial cells

constipation and repeated fecal stasis which results in increased rectal pressure may lead to the irritation and weakening of rectal wall progressively resulting in diverticulum formation. In our case histopathological results also revealed sub-acute inflammation with hyperplasia of goblet and epithelial cells which might be due to the chronic irritation caused by the impacted fecal material. According to Hedlund (2002), rectal diverticulum is commonly reported in middle-aged male dogs older than six years of age, which is consistent with the findings observed in the present case. Kang *et al.* (2007) reported two similar cases of rectal diverticulum without perineal herniation. In our case surgical management effectively restored normal defecation and prevented further fecal retention. Prompt presentation, early diagnosis and timely surgical intervention play a vital role in minimizing complications, reducing recurrence, and improving the overall quality of life of affected animals.

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