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Case Report

Surgical Correction of Perianal Hernia in Dog: A Case Report

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Abstract

Perianal hernia is characterized by protrusion of the abdominal or pelvic organs, through a weakened pelvic diaphragm. In current case report, a seven-year-old intact male dog was presented to VTH with a history of unilateral swelling around the anal region. The patient had undergone thorough physical examination and revealed the presence of few hard masses with reducible and doughy in consistency beside the presence of hernial ring. Following complete physical and clinical examination, surgical site was aseptically prepared and undergone perneal herniorrhaphy. Then, the dog was recovered uneventfully from the condition in fifteen days of operation. Therefore, herniorrhaphy along with good post-operative care is effective for successful management of perianal hernia.

Keywords: Intact Male Dog; Pelvic Diaphragmatic Muscles; Perennial Hernia

Introduction

Perennial hernia is characterized by protrusion of the abdominal or pelvic organs mainly due to weakening of pelvic diaphragmatic muscles and its surrounding tissue) resulting in a fluctuant swelling on either side or rarely below the anus [9,15] The weakening may also occur due to acquired muscle weakness, trauma and straining [4]. The pelvic diaphragm consists of the external anal sphincter muscle, the levator ani muscle, coccygeus muscle, internal obturator muscle and the sacrotuberous ligament [1]. On other hand, hernial sac usually made of perennial fascia, subcutaneous tissue and skin from interior to exterior [14].

Perianal hernia (PH) is most commonly occurred in middle-aged or aged intact male dogs [5,9]. Gokulakrishnan., *et al.* [4] also reported that short-tailed dogs and aged animals are more prone for perineal hernia. Intact male dogs over the age of 7-9 years are most likely to develop a perineal hernia [2]. But perineal hernia is much less likely developed in female and neutered male dogs, and cats [2,15]. Most patients present with swelling on one side of the anus, though some patients present with bilateral hernias, one on either side of the anus [1]. The common clinical sign of perineal hernia is perineal swelling either bilaterally or unilaterally, tenesmus, dysquesia, fecal incontinence, constipation, and straining to defecate [6]. Diagnosis is mainly made by history, clinical signs and per rectal examination. Confirmation of diagnosis must be supported through contrast radiography or ultrasonography [2,11].

Basically, treatment of perineal hernia can be achieved by using either conservative treatments or surgical herniorrhaphy. Conservative treatment of perineal hernia including the use of stool softeners, periodic enemas and digital fecal removal but it gives temporary alleviation [10]. There are several surgical treatment approaches used for the repair of perineal hernia including the standard herniorraphy [1,7,15], transposition of theinternal obtu-

rator muscle [3,9,15], semitendinosus muscle or superficial gluteal muscle [12], autogenous fascia lata graft [5], and polyproplene mesh [1,8,12]. Combined techniques have also been proposed such as colopexy, cystopexy or vas deferens pexy as -2-step protocol‖ was developed, in which laparotomy was performed as the initial stage of repair in bilateral or complicated perineal hernia and followed by perineal herniorraphy [3]. In intact dogs, castration is recommended along with perineal hernia repair in order to prevent the effects of testosterone or relaxin influence on the prostate gland and perianal musculature [13].

Case Presentation

- **Case history and examination:** A seven years old intact male dog weighing 16kg was presented to the Veterinary Teaching Hospital, College of Veterinary Medicine and Agriculture, Addis Ababa University with a history of unilateral swelling around the anal region. The owner complained that the dog decreased feed intake, straining during defecation, and the bulged mass was seen 3 months before and increased in size from time to time gradually. Upon clinical examination, there was swelling on left side of anal sphincter, a few hard masses reducible and doughy in consistency, in the perineal region. There were also mild dehydration, fecal bulge, and dried fecal content in the rectum. All the vital parameters were also assessed and found within the normal range. Based on history and physical examination the mass was diagnosed as perineal hernia and admitted for perineal herniorrhaphy.
- **Pre-operative animal preparation:** The dog was withheld from feed and water for 12 hours before coming to the clinic for next day appointment. Upon arrival on the day of the appointment, the dog was rechecked for its vital sign parameters. After controlling the animal, the caudal part of the rectum was evacuated manually by index finger and anus was plugged by using clean surgical gauze (Figure 1A). The perianal region and surrounding area was prepared aseptically by washing with soap and tap water. Then, the hair was shaved from the intended surgical site and surround area (Figure 1A). The area was again washed by using antiseptic solution (savlon) to remove any fall of hair. Finally, surgical site was scrubbed with 1% povidone iodine in circular manner starting from the center to outward.
- **Anesthesia and animal control:** The dog was controlled in sternal recumbent position and the four legs were tied to the surgical table with tail fixed over the back. The dog was tilted up caudally by putting drapes under the dog. The general anesthesia was achieved by administering xylazine @ 1.5 mg/kg (IM) as premedication dose, and ketamine hydrochloride @ 5mg/kg and Dazepam @ 2 mg/kg in single syringe as induction dose intravenously (IV). Intravenous fluid at a rate of @ 3ml/kg/hr. was administered using 20 G IV cannula. The dog was maintained using the same anaesthetic agent's ketamine @ 5 mg/kg and diazepam 2mg/kg with half of induction dose intravenously (IV) throughout the surgical procedure. Then, surgical site was draped with sterile drape in single put and secured to the skin with towel forceps and given a final scrub with 1% povidone iodine in circular manner starting from the center to prefer prior to proceeding to surgery.
- **Surgical procedure and techniques:** A slightly curved dorso-ventral skin incision was made 1 to 2 cm laterally on the left side of anus extending from the base of the tail to the medial angle of the ischial tuberosity (Figure 1B). Subcutaneous tissue became bluntly dissected till identification of the hernial sac. The incision was deepened through the hernia sac and the herniated organs such as: retroperitoneal fat and intestine were identified and replaced to normal anatomical position manually (Figure 1C). After proper positioning and location of the herniated organ anatomic structures, the base of hernial sac (Figure 1D) was resected and herniorrhaphy was done using a conventional method by suturing the internal obturator muscle to the external anal sphincter, followed by re-apposition of external anal sphincter and the levator ani muscle in an interrupted suture pattern with No. 2-0 Vicryl. Finally, subcutaneous tissues in a simple continuous pattern using No. 2- 0 chromic surgical Catgut to eliminate dead space and the skin incision was closed using No. 2-0 nylon in a simple interrupted suture pattern (Figure 1E and F).
- **Post-operative care and outcome:** Postoperatively, the dog was administered anti-pain drug diclofenac sulfate @ 2 mg/kg through IM for three days to prevent straining as it may predispose to recurrence A course of antibiotic (Fortified Procaine Penicillin @ 22,000 IU/kg) was administered through IM for five days. Local made similar to an Elizabethan collar was placed to prevent self-mutilation. Advising of the owner to give laxative (Bisacodyl 5mg, Orally) along with a bland, low-fat diet mixed with vegetables for 2 weeks to softening the stool to ease the defecation without straining and allowed

Figure 1: Surgical correction of perineal hernia in intact male dog.

(A) Placement of sterile gauze in anal canal (B) Curved dorso-ventral skin incision in progress (C) On progression of herniated organ repositioning (D) Inspection of herniated organ and its ring after replacement (E) Closure of the opening in progress (F) After complete herniorrhaphy.

the animal to gradually reintroduced to a normal diet until it could finally eat and defecate normally. After 5th days follow-up information was provided through phone call communication with the owner. Finally, skin suture was removed after 15 days and the dog recovered uneventfully without any complications.

Discussion

Perineal hernia is a condition which occurs mainly when the pelvic cavity muscles rupture due to weakened pelvic diaphragm to support the rectal wall, through which there is caudal displacement of some of the anatomical structures, such as rectal and pelvic or abdominal contents, resulting the swelling of the perineal region and impair defecation [7]. Although, the exact cause of perineal hernia is unknown, a multitude of factors have been incriminated, such as neurogenic, congenital predisposition, prostatic disease, chronic constipation, myopathies and hormonal alterations that result the weakness of pelvic diaphragm [3,15]. In present case report, the most clinical sign observed up on presentation and examination, were chronic constipation, fecal impaction, straining to defecate and perineal swelling. This in close agreement with Al-Akraa [1]; Guerios., *et al.* [6] and Vnuk., *et al*. [15] stated that the most clinical sign, which are detectable up on presentation, are constipation and perineal swelling, but the symptom may present individually or in combination.

According to Vnuk., *et al*. [15] report the median values of animal age was 8.17 ± 1.78 (range, 5-13) years. This agrees with the present case, where the age of animal was 7 years. Perineal hernia can be diagnosed accurately based on history, clinical signs and symptoms, physical examination, digital palpation and radiographic findings [1,7]. This also agrees with present case, where history, clinical signs and symptoms, physical examination and digital palpation were used. Radiographic examination aid in assessment of the condition of the rectum and outline the hernial content [9], although in present case, radiographic examination was not used. The contents of perineal hernia reported by Guérios., *et al.* [5] and Nanaboina., *et al.* [8] are urinary bladder, rectum, prostrate and retroperitoneal fat. The same is true in present case, where the identified herniated contents were retroperitoneal fat and rectum. According to the retrospective study conducted by Pekcan., *et al.* [9] on forty-one dogs with perineal hernia at Ankara University, Turkey, out of the total 11 (26.8%) dogs had bilateral while the other 30 (73.2%) had unilateral with 17 (56.7%) right and 13 (43.3%) left perineal hernia. In present case report, the patient was presented with developed left unilateral hernia.

There are several surgical treatments methods have been suggested to repair of perineal hernia [1,3,5-8,10,15]. Among that, muscle appositional techniques (standard herniorrhaphy) is one of the most commonly recommended procedures to repair the early and unilateral diagnosed cases of PH hernia with success rate 94.6% [1]. This agrees with present case in terms of techniques was used.

In present case report, post- operative analgesia was achieved by administering diclofenac sulfate @ 2mg/kg of animal body weight for 3 days and stimulant laxatives (bisacodyl) orally for softening tool for two weeks. This agrees with the report of Pekcan., *et al.* [9] who stated that postoperative analgesia have important role in mitigation of straining as a result of pain; whereas, prevention or relief of straining could have a role in preventing the reoccurrence of perineal hernia. The study conducted by Al-Akraa [1] reported that local sepsis, partial dehiscence, suture sinus, reoccurrence and seroma were the most post- operative complication encountered. However, postoperative complications were not noticed in current case.

Conclusion

In conclusion, clinically identified perennial hernia presenting with the complication of inability to defecate due to constipation must need surgeon to consider the surgical manipulation of the case. Therefore, early management of perineal hernia by internal obturator muscle transposition along with good post-operative care is found to be important for the successful management without significant post-operative complications.

Conflict of Interest

The authors declare no conflicts of interest regarding to publication of this article.

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