

Case report

Perineal herniorrhaphy along with anal saccullectomy in dog: Case report

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Abstract

A perineal hernia may occur unilateral or bilateral to the perineum. This may be due to the weakening and disassembly of the pelvic floor muscles, leading to abdominal visceral herniation to the perineal region and needing surgical reconstruction of the pelvic floor. The purpose of this case report is to describe the surgical correction of unilateral perineal hernia along with anal saccullectomy using transposition of internal obturator muscle. After aseptic preparation of the surgical site, an elliptical skin incision over the hernia swelling was performed. From there, the presence of the sac, contents, and adhesion were evaluated, the contents were relocated and the opening was closed with a layer. In the same manner, the anal gland was excised by surgical means. Clinical outcomes including postoperative complications and recur are assessed. Upon regular follow-up, for two months the case didn't recur and suddenly died later for unrelated reasons.

Introduction

A perineal hernia is one of the most common hernias found in dogs in the perineum, and rupture of the pelvic diaphragm causes the abdominal or pelvic organs to herniate into the ischiorectal fossa, especially in intact middle-aged or older male dogs [1-3]. It can appear unilateral or bilateral. Some research findings have documented 59% unilateral and 41% bilateral. This condition is associated with sanctification, enlargement, diversion, and diverticulation of the rectum, bladder resorption, or bladder obstruction [4,5]. Large rectal sacculcation and rectal diverticulum can compress stool excretion and cause rupture of the perineal hernia, repair the surgical correction of the rectal diverticulum, or require a large sac to prevent recurrence of the perineal hernia [2,6].

Other factors such as hormonal imbalance, enlarged prostate, fatigue, and congenital or acquired muscle wasting or weakness are also associated with this condition [5,7]. Some

scholars recommend the effects of testosterone or relaxin and the perianal musculature on the prostate gland during castration of perineal herniorrhaphy [6,7]. To date, many surgical repairs have been used simply in dogs, including the simplest positional technique, transposition of the vascular muscle flap (internal obturator muscle, peripheral gluteal muscle, semitendinosus muscle), and the use of implants or graft techniques [8]. The rare repair of complex perineal hernia can be performed by laparotomy for colopexy and/or cystopexy in combination with any technique [7,8]. This particular case report describes the surgical correction and management of perineal hernia along anal saccullectomy in the dog by using transposition of internal obturator muscle.

Case description

History and clinical examination

A 6-year-old, intact, exotic male dog, weighing 18 kg, was

admitted to the Addis Ababa University veterinary teaching hospital in Ethiopia with unilateral edema on the right side of the perineal region (Figure 1a). The owner reported intermittent vomiting, decreased food intake, frequent constipation, and intermittent fecal impaction for 6 months. Physical examination revealed mild dehydration (4%), indifference, swelling of the stool, asymmetric edema of the perineum, constipation, frequent tenesmus and tachycardia, pain in the abdominal cavity on palpation, slightly reducible, firm and voluminous intestinal loops through the. Dry feces were removed during the examination of the rectal opening. Based on medical history and clinical data, the patient was diagnosed with a unilateral perineal hernia and decided to perform perineal herniorrhaphy.

Preoperative preparations

As there may be infection due to prior normal physiological derangement of GIT, the antibiotic; penicillin (24mg/kg) and dihydrostreptomycin sulfate (30mg/kg) (pen & strep® Northbrook Uk) IM was administered the first day before undergoing surgical procedure following the day and sent back home for withholding of feed and water for 24hrs after removing fecal impaction and performing rectal enema to reduce the possibility of surgical site contamination during surgery as well as for temporary relief. The next day, the patient was admitted to the Addis Ababa University Veterinary Teaching Hospital for perineal herniorrhaphy. Before undergoing a

surgical repair, the surgical area including perineal swelling and its surrounding was aseptically prepared by clipping the hair, washed with water, soap, and diluted antiseptics after deep sedation as shown in (Figure 1b). Pen strip of the same dose was also administered through IM one hr before launching surgery. During the whole surgical procedure, the lactated ringer solution was infused through the cephalic vein at a 10ml/kg/hr drip rate to restore and maintain the blood volume in addition to fluid and electrolyte loss.

Anesthesia and animal control

The dog was premedicated with diazepam (manufactured by Intas pharmaceutical ltd., India) @0.3mg/kg i.v to provide adequate muscle relaxation. Later the animal was induced by the combination of diazepam (manufactured by Intas pharmaceutical ltd., India) at 0.15mg/kg and ketamine (ketamine hydrochloride manufactured by Germany) at 5mg/kg IV, and the dog was kept in sternal recumbence for surgical procedure. Finally, the dog was maintained by propofol (Aulife health care Pvt. Ltd, Gujarat, India) @4.5mg/kg iv.

Surgical correction and treatment

After aseptic preparation of the surgical field, a purse-string suture was first applied around the anal opening using non-absorbable suture material to protect the surgical field from contamination (Figure 1b). Then sterile drape was placed over the surgical area and fixed to the animal body using towel clumps. A steeply curved skin incision was placed on the swollen mass of the perineum from the base of the tail to the midpoint between the sciatic and sciatic nodules and returned to the proximal midline of the scrotum [5]. A blunt incision was then continued through the same opening, the subcutaneous tissue was folded for further identification and examination of the hernia sac, replacing the hernia structure with part of the pelvis and abdomen by using retractors. The adhesion, content, and strangulation of the hernia content were then evaluated. Fortunately, little adhesion was observed between the hernia contents and the omentum, and then it was gently loosened and peeled off, gently detached, and replaced with sterile gauze (Figure 1c). Besides, there was an abnormal enlargement of the anal gland and sac. The abnormally enlarged gland was surgically excised and discarded. After proper repositioning and manual replacement, an incision was made in the caudal aspect of the medial aspect of the internal obturator muscle and raised from the sciatic bone with the peritoneal elevator to reflect the caudal aspect of the external anal sphincter muscle.

Then, seriously interrupted sutures were placed with polyglycolic acid 910 (vicryl) 2-0 starting from the dorsal to the ventral aspects, with the caudomedial edge of the internal obturator muscle sutured to the external anal sphincter and the caudolateral border of the internal obturator muscle sutured to the cruciate ligament. After all of these sutures were correctly placed in the ligament and muscle, the subcutaneous tissue was continuously sutured using the polyglycolic acid 910 (vicryl) 2-0. Finally, the skin was closed subcuticular with the same suture material and size.



Figure 1: Perineal Herni and its surgical correction progression dog. (a) unilateral perineal hernia (b) surgical site scrubbed (c) replacement of herniated organs on progress (d) animal in drowsy after few minutes of surgical correction (e) outcome at the seventh day of follow up.

Post operative care and outcome

Systemic antibiotics by using penicillin (24mg/kg) and dihydrostreptomycin sulfate (30mg/kg) (pen & strep® Northbrook UK) for five days. The animal is also recommended with a less residue diet, application of an Elizabethan collar, and lavage of the wound once daily by using saline solution. Moreover, tramadol (tramadol hydrochloride, Sakar health care Pvt. Ltd, Gujarat, India) @2mg/kg IM q 12 hr for pain management was also prescribed. The owners were also instructed to subjectively assess surgical site pain, discomfort, and inflammation at the surgical site, and defecation and urination behaviors. One week after the operation, he came into the Veterinary Teaching Hospital with bright eyes (Figure 1e) and had no signs of recurring. Ten days after surgery, the skin sutures were removed. The owner informed us that his appetite had subsided a bit. Two months after surgery, the patient died due to an unrelated reason.

Discussion

Several therapeutic approaches have been used to correct perineal hernia in dogs, including standard herniorrhaphy [2,10], internal obturator muscle [11]; semitendinosus muscle apposition technique [2]. Transposition of the internal obturator muscle is used in this particular hernia repair [12] although the recurrence rate of 17.4% was reported in six intact male dogs in their study out of 34 cases.

In cases of lateral perineal hernia, the defect can be partially corrected by connecting the two sides of the internal obturator muscle, at the midline, while ventral rectal support has been effectively provided by muscle transposition techniques [1,9]. Sometimes, colopexy, cystopexy, and vas deferent pexy have been recommended before perineal repair to reduce the risk of relapse, resolve rectal distances, and facilitate herniorrhaphy [1,12,13], but in current surgical management, these techniques have not been performed. Perineal surgery can be treated successfully.

The contents of the hernia were easily reconstructed during the surgery and no recurrence was seen. However, some authors have observed and reported partial wound healing in 3 to 21% of cases after the repair of perineal hernia [13,14]. Although this case has been recovered from this surgical procedure without significant postoperative complications in addition to some symptoms of inflammation in the surgical field in the early stages, other studies have reported 11-45% wound infection [15,16] and perineal neuralgia [17]. The main causes of postoperative wound dehiscence from such surgical interventions [8,18] are associated with wound disease, infection contamination, extensive surgical separation, and previous local infections. In this case, the absence of wound infection can be attributed to the application of prophylactic and postoperative antimicrobial therapy. Thus, the author strongly recommends that the matter be dealt with before the perineal hernia worsens.

Availability of data

The data that support the findings of this study are available from the corresponding author upon reasonable request.

Conflict of interest

The author declares that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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