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Surgical management of recurrent perineal hernia using cone shaped polypropylene mesh in a dog

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Abstract

A case report of 8 year old, uncastrated Labrador male dog, weighing about 22 kgs was presented to the Veterinary Clinic with the condition of difficulty in urination and swelling on the left perineal region and the condition was diagnosed as the reducible hernia and corrected surgically by using cone shaped polypropylene mesh to avoid the recurrence.

Keywords: Dog, hernia, polypropylene mesh

Introduction

Perineal hernia is protrusion of the abdominal organs in to the perineal area through the weak pelvic diaphragm and it is most commonly occurred in uncastrated old male dogs characterized by constipation, obstipation, dyschezia, perineal swelling and occasionally urination problems. The cause of pelvic diaphragmatic muscle weakening includes muscular atrophy, myopathies, hormonal include and prostatic hypertrophy [1]. Rectal disease plays a major role in perineal herniation include rectal deviation, rectal sacculation and rectal diverticulum [5]. A number of alternative surgical techniques have been developed, especially in humans to strengthen the repair and decreases the chance of recurrence [4, 6]. The present case report describes the successful repair of perineal hernia using cone shaped polypropylene mesh in a male Labrador dog.

Case History and Observations

A 8 year old, uncastrated Labrador dog was presented to veterinary clinic, history of vomiting, difficulty in urination and swelling on the left perineal region (Fig.1). The animal had the history of perineal hernia 3 months ago and surgical correction made with herniorrhaphy. On the palpation of swelling, it was found to be doughy in consistency with a few hard masses and reduced in to the pelvic cavity when we apply the pressure. Thus the condition was diagnosed as the reducible hernia. Physical parameters like temperature, respiration and pulse were within the normal range and the case was subjected to correct the condition surgically by using cone shaped polypropylene mesh to avoid the recurrence.



Fig 1: Left perineal swelling.

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Surgical Technique

The dog was prepared for surgery after aseptic preparation of peri-anal area. The dog was preanesthetised with atropine sulphate @ 0.04 mg/kg, Xylazine hydrochloride @ 1 mg/kg and maintained with combination of Ketamine hydrochloride and Diazepam @ 5 mg/kg and 0.5 mg/kg respectively. The dog was positioned in sternal recumbence with tail pulled sideward's and tied to the edge of operation table. A purse string suture was applied around the anus to prevent accidental contamination of the surgical site. A slightly curved dorsoventral skin incision extending from the base of the tail to the medial angle of the ischial tuberosity is made. The incision was deepened through the hernia sac. Hernial contents were found to be bladder, retroperitoneal fat and intestine were return to their normal anatomic positions. The muscles of the pelvic diaphragm were unable to be identified individually due to fibrous tissue formation. A cone shaped structure was prepared with polypropylene mesh to suit the hernia ring (Fig. 2).

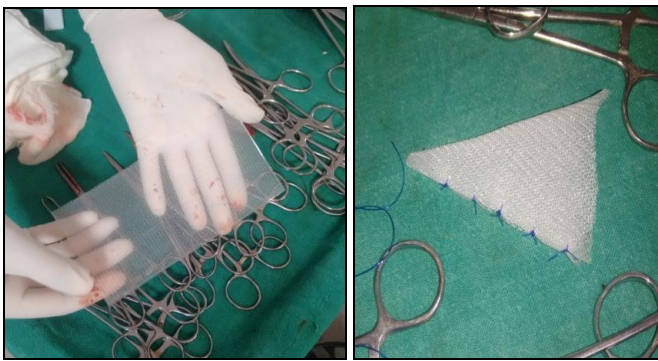


Fig 2: Cone shaped polypropylene mesh

The cone shaped polypropylene mesh was inserted in hernia ring and fixed with simple interrupted sutures ventrally to periosteal of *tuber ischi*, laterally to the sacro-ischiatic ligament, *coccygeus* muscle and *lavatory ani* muscle and finally to the external anal sphincter medially using 3-0 polypropylene suture material (Fig. 3). The mesh was covered by subcutaneous tissue using 4.0 metric polyglactin 910 and the skin was opposed using 2-0 polypropylene in horizontal mattress pattern followed by castration was done in the pre-scrotal site. Postoperative antibiotic treatment was constituted using Ceftriaxone @ 20 mg/kg for five days, Meloxicam @ 0.5 mg/kg for three days and oral administration of stool softening agent cremaffin @ 2 teaspoonful twice daily. Suture line was dressed daily with betadine. Skin suture were removed on 12th postoperative day (Fig. 4).

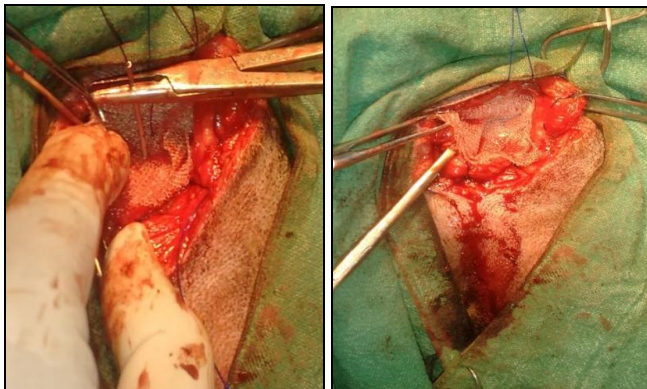


Fig 3: Fixing of polypropylene mesh with simple interrupted suture pattern



Fig 4: Recovered animal on 20th Postoperative day

Discussion: The animal had good recovery from the surgery. A study by Bowman [2] with polypropylene mesh implanted to repair hernias in dogs and cats reported immediate postoperative complications such as incisional infections and seroma formation. However, postoperative complications were not noticed in current case. As the animal was maintained with laxative diet, chance of dehiscence of sutures was reduced. Additionally, polypropylene mesh, which is a network of non-absorbable monofilament, thought to prevent bacteria from trapped and making them less likely to become infected than any other synthetic mesh as reported [3]. Castration helped in reducing the relaxation effects of androgens on the peineal musculature. The use of cone shaped polypropylene mesh provided better strength to repair of perineal hernia. Thus, it was concluded that cone shaped polypropylene mesh can be used successfully for surgical management of recurrent perineal hernia in dogs.

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