



REPAIR OF RECURRENT PERINEAL HERNIA USING POLYPROPYLENE MESH IN A DOG*

K. D. John Martin¹, Sherin B. Sarangom²,
Susannah Bijee Philip³ and Ashay P. Kankonkar⁴

Department of Veterinary Surgery and Radiology
College of Veterinary and Animal Sciences
Mannuthy-680 651, Thrissur, Kerala

Received - 31.12.2011

Accepted - 18.09.2012

Abstract

A 12 year old sexually intact Spitz male dog was presented with a swelling on the right perineal region. The animal showed periodic difficulty in defecation and stranguria. On physical examination, the condition was diagnosed as perineal hernia. The animal had the history of perineal hernia four months back and had undergone herniorrhaphy. On account of its recurrence, surgical correction by hernioplasty using polypropylene mesh and orchiectomy was done. The animal had an uneventful recovery and the skin sutures were removed on the 9th post-operative day.

Keywords: *Perineal hernia, polypropylene mesh, hernioplasty*

Perineal hernia results from weakness, separation and eventual failure of the muscles of the pelvic diaphragm, with subsequent displacement of pelvic and occasionally abdominal contents into the perineal area (Burrows and Harvey, 1973). The standard surgical procedure for perineal hernia involves re-apposition of the muscles of pelvic diaphragm using non-absorbable suture materials (Bellenger and Canfield, 2003). But there are chances of recurrence with the use of this technique especially if the muscles of

pelvic diaphragm are atrophied. A number of alternative surgical techniques have been developed, especially in humans, to strengthen the repair and decrease the chance of recurrence (Frankland, 1986; Szabo *et al.*, 2007). This paper reports the successful repair of perineal hernia using polypropylene mesh in a male Spitz dog.

Materials and Methods

Case history and Observations

A 12 year old sexually intact male Spitz dog was presented to the Kerala Veterinary and Animal Sciences University Hospital, Kozhikode with a swelling on the right perineal region (Fig. 1). According to the owner, the swelling was noticed initially one month back which increased in size gradually. The animal had the history of perineal hernia four months back and had undergone correction with herniorrhaphy. The animal showed periodic difficulty in defecation and stranguria. On palpation of the swelling, it was found to be generally doughy in consistency with a few hard masses in between and could be reduced into to the pelvic cavity on applying moderate pressure. The urinary bladder was catheterized and the urine was relieved. On reduction of the contents, edges of damaged

1. Associate Professor

2. 3 & 4 M.V.Sc. Scholars

pelvic diaphragm could be palpated. Thus the condition was diagnosed as reducible perineal hernia. Taking on account of its recurrence, surgical correction by hernioplasty using polypropylene mesh was resorted to.

Surgical Technique

The animal was pre-medicated with Atropine sulphate^a at the rate of 0.04 mg/kg body weight followed by Xylazine hydrochloride^b at the rate of 1.5 mg/kg body weight, both given intramuscularly at 10 minutes interval. The perineal region was shaved and prepared for an aseptic surgery. General anaesthesia was induced with Ketamine hydrochloride^c given at the rate of 5 mg/kg body weight intramuscularly. Anaesthesia was maintained by intravenous administration of a combination of Xylazine hydrochloride and Ketamine hydrochloride, equal quantity by volume and Diazepam^d to effect, along with 5% Dextrose - Normal saline. Body of the animal was covered with sterile laparotomy sheets excluding the site and the site was painted with Tr. iodine. A curvilinear incision, beginning ventral to the coccygeus muscle, curving over the hernial bulge and lateral to the anus was made on a ventro-medial direction. The incision was deepened through the hernial sac. Hernial contents were found to be retroperitoneal fat, which contained small, firm nodular masses (Fig. 2). The enlarged prostate was also noticed to herniate partially. All the contents were severely congested. The hernial contents were reduced after ligating and removing the excess fat. The muscles of the pelvic diaphragm were unable to be distinguished individually due to fibrous infiltration. A polypropylene mesh^e of size 6 cm x 3 cm was cut into a size and shape to suit the hernial ring and was fixed with interrupted sutures ventrally to the periosteum of *tuber ischi*, laterally to the sacro-ischatic ligament, coccygeus muscle and *levator ani* muscle and finally to the external anal sphincter medially using 4.0 metric Polypropylene^f suture material (Fig. 3). The mesh was covered by subcutaneous tissue using 4.0 metric Polyglactin 910^g and the skin was apposed

using monofilament nylon in vertical mattress pattern. Orchiectomy was done in the pre-scrotal site.

Post-operatively, the animal was administered with Amoxycillin-Dicloxacillin^h 250 mg intravenously. The antibiotic course was continued orally for six more days and the owner was advised to feed the animal with laxative diets. The skin sutures were removed on the ninth post-operative day.

Results and Discussion

The animal had an uneventful recovery. Because of the location of perineal hernia, incisional infection rates associated with hernia repair in dogs were found to be high (Hosgood *et al.*, 1995). A study by Bowman *et al.* (1998) with polypropylene mesh implanted to repair hernias in dogs and cats reported immediate postoperative complications as incisional infections and seroma formation. However, post operative complications were not noticed in the present case (fig. 4). As the animal was maintained in a laxative diet, chance of dehiscence of sutured wound in the perineal region was also reduced. Additionally, polypropylene mesh, which is a network of non-absorbable monofilaments, are thought to prevent bacteria from being trapped within the fibres, making them less likely to become infected than any other synthetic mesh as reported by Brown *et al.* (1985). The recurrence of perineal hernia in the present case can be attributed to the higher degree of atrophy of the muscles of the pelvic diaphragm at the time of previous repair, senile deterioration of perineal tissue, endocrine imbalances or prostatic enlargement. Since prostatic enlargement was noticed, orchiectomy was done. Orchiectomy helped in reducing the relaxation effects of androgens on the perineal musculature and to reduce the size of the prostate. The use of polypropylene mesh provided better strength to the repair.

A case of recurrent perineal hernia in a male Spitz dog and its successful management by hernioplasty using polypropylene mesh is placed on record.

^aAtropine Sulphate, Morvel; ^bXylaxin, Indian Immunologicals; ^cKetmin 50, Themis Pharmaceuticals; ^dCalmPose, Ranbaxy; ^eBard Mesh, Davol; ^fProlene, Ethicon; ^gVicryl, Ethicon; ^hIntamox-D, Intas Pharmaceuticals.



Fig. 1: Animal before surgery



Fig. 2: Hernial contents

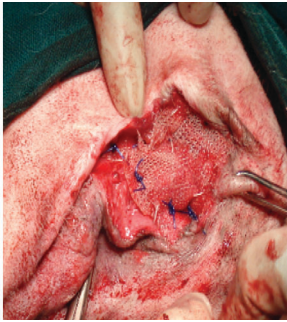


Fig. 3: Polypropylene mesh fixed



Fig. 4: Animal on third post-operative day

References

- Bellenger, C. R. and Canfield, R. B. 2003. *Text Book of Small Animal Surgery*. 3rd ed. WB Saunders, Philadelphia. pp. 487 – 498
- Bowman, K. L., Birchard, S. J. and Bright, R. M. 1998. Complications associated with the implantation of polypropylene mesh in dogs and cats: a retrospective study of 21 cases (1984 - 1996). *J. Am. Anim. Hosp. Assoc.*, **34**: 225 - 233
- Brown, G. L., Richardson, J. D., Malangoni, M. A., Tobin, G. R., Ackerman, D. and Polk, H. C. 1985. Comparison of prosthetic materials for abdominal wall reconstruction in the presence of contamination and infection. *Ann. Surg.*, **201**: 705 - 711
- Burrows, C. F. and Harvey, C. E. 1973. Perineal hernia in the dog. *J. Small Anim. Pract.*, **14**: 315 - 332
- Frankland, A. L. 1986. Use of porcine dermal collagen in repair of perineal hernia in dogs – a preliminary report. *Vet. Rec.*, **119**: 13 - 14
- Hosgood, G., Hedlund, C. S., Pechman, R. D. and Dean, P. W. 1995. Perineal herniorrhaphy: perioperative data from 100 dogs. *J. Am. Anim. Hosp. Assoc.*, **31**: 331 - 342
- Szabo, S., Wilkens, B. and Radasch, R. M. 2007. Use of polypropylene mesh in addition to obturator transposition: A review of 59 cases (2000 - 2004). *J. Am. Anim. Hosp. Assoc.*, **43**: 136 - 142

