

PERINEAL HERNIOPLASTY USING POLYPROPYLENE MESH IN A DOG

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A 12 year old, uncastrated Spitz male dog, weighing 18 kg was presented to the TVCC & RVP, IVRI with the history of dysuria and swelling on the right perineal region. The condition was diagnosed as the perineal hernia and corrected surgically by using a polypropylene mesh. The animal showed uncomplicated recovery without recurrence.

Keywords: Dog, Perineal hernia, Polypropylene mesh.

Perineal hernia is protrusion of the abdominal organs in to the perineal area through the weak pelvic diaphragm. It is most commonly found in uncastrated aged male dogs and characterized by constipation, obstipation, dyschezia, perineal swelling and occasionally urination problems. This condition is the result of weakness of pelvic diaphragm muscle due to muscular atrophy, myopathies, hormonal and prostatic hypertrophy (Bellenger *et al.*, 2003). Rectal anomalies like rectal deviation, rectal sacculation and rectal diverticulum play an important role in development of perineal herniation (Mann, 1993). Various surgical techniques have been developed, especially in humans to strengthen the repair and reduce the chance of recurrence (Frankland, 1986; Szabo *et al.*, 2007). The present case report describes successful repair of perineal hernia using polypropylene mesh in a male Spitz

dog.

Case History and Observations

A 12 year old, uncastrated Spitz dog was presented to TVCC & RVP with history of vomiting, difficulty in urination and swelling on the right perineal region (Fig.1). On palpation the swelling was found to be doughy in consistency with a few hard masses. The swelling was reducible on application of the pressure. Ultrasonography confirmed the presence of urinary bladder and prostate gland as the hernial contents (Fig.2). Thus the condition was diagnosed as a reducible perineal hernia. Physical parameters like temperature, respiration and pulse rate were within the normal physiological range and the case was subjected to hernioplasty using a polypropylene mesh to avoid the recurrence.



Fig.1. Bulge of hernial content through right pelvic diaphragm



Fig.2. Ultrasound revealed prostate and urinary bladder as hernia contents

Surgical Treatment

The dog was prepared aseptically for surgery and premedicated with atropine sulphate 0.04 mg/kg s/c, midazolam 0.2 mg/kg and butorphanol 0.2 mg/kg i/v followed by induction with thiopental sodium i/v. The anaesthesia was maintained with isoflurane in 100% oxygen. The dog was positioned in sternal recumbency with tail pulled cranially and tied to the edge of operation table. A purse-string suture was applied around the anus to prevent contamination of the surgical site. A slightly curved skin incision extending from the base of the tail to the medial angle of the ischial tuberosity was made and deepened through the hernia sac. Hernial contents were found to be urinary bladder, retroperitoneal fat and prostate gland. The contents were returned back to their normal anatomic positions. The muscles of the pelvic diaphragm were easily identified individually. A small piece of polypropylene mesh was prepared to suit the

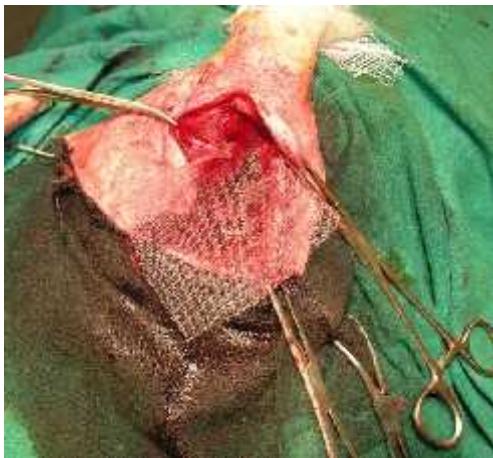


Fig.3. Inlay placement of polypropylene mesh over the ruptured pelvic diaphragm

Results and Discussion

The animal had good recovery from the surgery. Similar study by Bowman *et al.* (1998) with polypropylene mesh implanted to repair hernias in dogs and cats reported. Postoperative complications were not noticed in current case. As the animal was maintained with laxative diet, chances of dehiscence of sutures were reduced. Additionally, polypropylene mesh, which is a network of

hernia ring.

Polypropylene mesh was inserted in hernia ring and fixed with simple interrupted sutures ventrally to periosteum 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 apposed using 1-0 polypropylene in horizontal mattress pattern (Fig. 4). Following hernioplasty castration was done through the prescrotal incision in a standard manner. Postoperative antibiotic treatment was constituted using Ceftriaxone 20 mg/kg, i/m for five days, Meloxicam 0.5 mg/kg, i/m for three days and oral administration of stool softening agent cremaffin 2 tea spoonful twice daily. Suture line was dressed daily with povidone iodine. Skin suture were removed on 12th postoperative day.



Fig. 4. Repositioned hernial contents after hernioplasty

non-absorbable monofilament, has been thought to prevent bacteria trapped and making it less likely to become infected than any other synthetic mesh. Castration might have helped in reducing the relaxation effects of androgen on the perineal musculature. The use of polypropylene mesh provided adequate strength for repair of perineal hernia.

Thus, it was concluded that polypropylene mesh can be used successfully

for surgical management of large perineal hernia in dogs.

References

- Bellenger, C.R., Canfield, R.B. and Slatter, D.H. (2003). Textbook of small animal surgery. 3rd edn., WB Saunders, Philadelphia, U.S.A. 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**(3): 225-233.
- Frankland, A.L. (1986). Use of porcine dermal collagen in the repair of perineal hernia in dogs-a preliminary report. *Vet. Rec.*, **119**(1): 13-14.
- Mann, F.A. (1993). Perineal herniation. Disease mechanisms in small animal surgery, Bojrab, M.J. (Eds.). 2nd edn., Lea & Febiger, Philadelphia, U.S.A. Pp. 92-96.
- Szabo, S., Brent, W. and Robert, M.R. (2007). Use of polypropylene mesh in addition to internal obturator transposition: a review of 59 cases (2000–2004). *J. Am. Anim. Hosp. Assoc.*, **43**(3): 136-142.