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Surgical Management of Entero-Hystero-Cystocele in a bitch

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Abstract: *A 7 year-old, intact non descriptive bitch was presented with a history of inguinal mass progressive over a period of six-month which was operated for mammary tumour 4 years back. On physical examination a non-painful irreducible, soft tissue mass in the inguinal region was noticed. Radiographic evaluation of the abdomen demonstrated air filled loops of intestines ultrasonography revealed anechoic fluid structure bladder. A tentative diagnosis of an enterocystocele was made and herniorraphy was performed. During the surgery, it was identified that intestinal loops, urinary bladder, uterus were herniated. Following midline celiotomy manual reductions of the herniated uterus, a routine ovariohysterectomy, entero-entero plication, cystopexy were performed. Another incision was made over hernial mass of inguinal region and herniorraphy performed. The bitch made an uneventful recovery with no recurrence of further disease.*

Keywords: *Enterocele, cystocele, Hysterocele, Radiography, Ultrasonagraphy, Dog*

I. Introduction

Inguinal hernia refers to a swelling on the caudal abdomen region that occurs as a result of protrusion of abdominal contents through a defect in the ventral abdomen. Inguinal hernia are frequently documented in female dogs and are most often diagnosed in intact, middle aged bitches (Waters *et al*.,1993 and Serrin *et al.,* 2009) and are mostly due to trauma that weakens the abdominal musculature resulting in abnormality of the inguinal ring. Clinical signs reflect the size of the hernia and the hernia contents and ranges from a painless inguinal mass to signs related to incarcerated or nonviable small intestine (Alireza et al., 2009). Diagnosis of hernia is accomplished by radiography and ultrasonagraphy (Abdin and Ramadan, 2001).This report describes the diagnostic and surgical treatment of inguinal hernia and abdominal inguinal region in an intact non descriptive bitch.

II. Case History and Observation

A 7year-old, 14.4kg, nondiscriptive bitch was presented to the surgery outpatient unit of Teaching Veterinary Clinical Complex, Veterinary College and Research Institute Orathanadu with history of progressive inguinal mass on the left inguinal region for last six months which was operated for mammary tumour 4 years back (Fig1). On physical examination a soft, irreducible and non painful mass noticed in the ventral aspect of the abdomen at the inguinal region. Intestinal loops were felt hernia ring was noticed. Contrast radiography revealed presence of intestinal loops, bladder, and anechoic bladder and hyperechoic uterus was visualized through ultrasonagraphy (fig.2). General condition of the bitch was normal except dysuria was noticed.

III. Treatment and Discussion

The bitch was premedicated inj. Atropin sulphate at the dose rate of 0.02mg/kg s.c. inj.xylazine 1mg/kg i.m. and induction with inj. ketamin 5mg/kg i.v. Diazepam 0.2mg/kg i.v. and maintain with 2% isoflurane. The bitch was placed in dorsal recumbency through midline laparotomy intestine, uterus, and urinary bladder were reduced. Panhysterctomy followed by enteroenteroplication and than the urinary bladder was repositioned to its normal anatomical position, and cystopexy was performed using 2.0 PGA in a simple interrupted pattern. The midline incision was closed by using 1.0 PGA in cruciate pattern and than skin closed no.1 silk in a simple interrupted suture pattern.

The second incision was made over the inguinal ring and herniorraphy by overlapping suture pattern with non absorbable no.1 polyamide was performed and than skin closed with no.1 silk in simple interrupted pattern. Post operative antibiotic therapy with inj.Intacef Tazo 375mg i.v., inj.Meloxicum 0.2 mg/kg i.v. and supportive therapy Tribivet1ml i.m. for seven days was administered. The animal had an uneventful recovery after three months periods.

Hernia is a protrusion of an organ or tissue through an opening that may be caused by a tear in the abdominal wall or it may a natural opening like the inguinal canal or femoral canal (Jettennavar et al., 2010). The dog discussed in this report was 7 years old, and the history of a progressive enlargement of an inguinal swelling suggests an acquired cause of the hernia.

Inguinal hernia in adult dogs are relatively common (Waters et al., loc cit). Several theories have been proposed to explain the pathogenesis of inguinal hernias and their freguent occurrence in females than males. These

theories include anatomical, hormonal (especially estogen in females) and metabolic factors. Anatomically the inguinal canal is both shorter and larger in diameter in females than in males (Smeak, 1993). Sex hormones in particular estrogen, could also be involved in the pathogenesis of inguinal hernia, because the majority of inguinal hernia appear during esturus or preganancy and have not been reported in neutrated females (Hayes, 1974). Estrogen could change the strength and character of the connective tissue, ligamentous structure, and muscle in the inguinal area. Diagnosis of inguinal hernia can be achieved using radiography and ultrasonography were in intestinal loops appeared radiolucent in plain radiography and anechoic circular areas in ultrasonagraphy. Surgical management of inguinal hernia consists of identification of the hernia sac, assessment of the viability of the hernia contents, surgical resection of nonviable tissue, herniorrhaphy and in some instances, neutering (Alireza et al *loc cit* 2009).The surgical approaches have been described in management of inguinal hernia in dogs and they include midline approach (Smeak, *loc cit*).Incision over the inguinal ring (Waters *et al loc cit*) and incision on the lateral aspect of hernia parallel to flank fold (Smeak, *loc cit*).The surgical approach in this case was through a midline incision and incision over the inguinal rings for more exposure of the hernia sac. The uterus with in a hernia may also protrude in the sac and limit the movement of the small intestine in the sac such hernia is likely to be large, and large hernias are associated with less risk for incarceration (Alireza *et al.,loc cit*).The intestine, along with omentum, were present in the inguinal sac in this case, without any signs incarceration or adhesion to the sac. Complication in dogs treated surgically for inguinal hernia include incisional infection, wound dehiscence,hematoma,seroma,excessive post operative swelling, hernia recurrence, sepsis peritonitis and death (Alireza *et al., loc cit*).The only complication encountered in this case was post operative edema during the first one week which resolved subsquently. Due to the absence of incarceration and intestinal perforation or leakage in this reported case, the prognosis was evaluated to be good.

IV. Summary

Radiography and ultrasonagraphy are excellent diagnostic tools that can be used in assessing the organs involved in an inguinal hernia. Knowledge of the organs involved is important as it helps in planning for surgery and determining the prognosis of a case. Herniorraphy, panhysterectomy, was performed for successful surgical management and prevention recurring enteroplication and cystorraphy.

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Fig.1 Inguinal mass

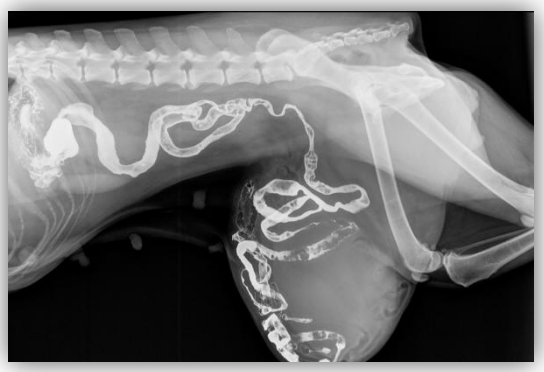

Fig.2 Barium

Fig.2 Anechoic structure Bladder