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**Anand VM**  
Veterinary Officer, Department  
of AHVS, Koppal, Govt. of  
Karnataka, Karnataka, India

**Balagoni Hanuman**  
Veterinary Surgeon, Urban Paws  
Veterinary Hospital, Bangalore,  
Karnataka, India

**Anil**  
Veterinary Officer, Department  
of AHVS, Koppal, Govt. of  
Karnataka, Karnataka, India

**Akash**  
Karnataka Veterinary, Animal  
and Fisheries Sciences  
University, Bidar, Karnataka,  
India

**Prashant Gujjalkar**  
ICAR-National Dairy Research  
Institute, Karnal, Haryana,  
India

**Pruthviraj**  
Veterinary Officer, Department  
of AHVS, Koppal, Govt. of  
Karnataka, Karnataka, India

**Corresponding Author:**  
**Anand VM**  
Veterinary Officer, Department  
of AHVS, Koppal, Govt. of  
Karnataka, Karnataka, India

## Successful surgical management of inguinal herniation of uterus in a pug

**Anand VM, Balagoni Hanuman, Anil, Akash, Prashant Gujjalkar and Pruthviraj**

### Abstract

A 11 months old intact female pug was presented with progressive swelling over right inguinal region in the last 3 months. Dog was having mild limping and problem while sitting on back legs. Estrus signs were observed 4 weeks prior to presentation of case. Animal was undergone physical examination and it revealed all vital parameters were normal. Swelling was painless on palpation and soft in consistency. A tentative diagnosis of inguinal hernia was made based on physical examination and surgical correction was planned. Uterine herniation was observed during surgery. Hernial contents were reduced inside and ovariohysterectomy was performed under general anaesthesia. Herniorrhaphy was done and animal was recovered uneventfully.

**Keywords:** Hysterocele, inguinal hernia, herniorrhaphy

### Introduction

Inguinal hernia is defined as protrusion of abdominal viscera through canalis inguinalis which lies just besides the vaginal process [1]. During embryonic development parietal peritoneum outpouching forms vaginal process. Female dogs are only animals to have vaginal process [2]. Inguinal hernias categorized as ventro caudal abdominal hernias [3] and may occur by congenital deformity in inguinal canal or by trauma [4]. Herniation of gravid or non-gravid uterus is called hysterocele [5] and inguinal region is most common site for it. Non traumatic inguinal hernias are most commonly reported especially in intact and middle-aged bitches and in male dogs less than two years age [1]. However, occurrence was more in old bitches in a study [6]. Most commonly herniated organs include omentum, uterus, ovaries and urinary bladder [1, 3-5]. Unilateral hernias are common than bilateral. Left sided inguinal hernias are more common (Fossum). However, in present case the right sided herniation was observed. Among breeds, Basenji and West highland terrier breeds have excess predisposition for inguinal hernia. Clinical signs vary based on organ of herniation and incarceration. In non-incarcerated hernias, non-painful swelling at inguinal hernia with reducible or non-reducible contents can be seen [2, 4].

### Materials and Methods

A 11 months old female pug was reported with history of soft swelling at right inguinal area (Fig 1). Swelling was progressively increasing in size in the last 3 months. Physical examination of dog revealed normal temperature, pulse and respiratory rate. Feeding, water intake, defecation and urination were normal. Upon palpation, the swelling was soft, non-reducible and painless. A tentative diagnosis of chronic inguinal hernia was made. Hematological parameters were within normal range. Herniorrhaphy was planned. Dog was placed on dorsal recumbency and surgical site was aseptically prepared. For pre anaesthesia Xyazine @ 1mg/kg and Atropin sulphate @ 0.045 mg/kg bwt, induction and maintenance was done with propofol at the dose rate of 4mg/kg bwt. Incision was given above the swelling. Subcutaneous tissue and mammary tissues were bluntly dissected. Hernial sac was incised ventrally. Herniated uterus was found along with omentum (Fig 2). Ovariohysterectomy was attempted from initial incision site but both ovaries were out of reach from incision site. So, hernial contents were reduced to abdomen and internal ring of hernia was closed with simple interrupted pattern by using Vicryl No 0. Subcutaneous tissue and skin were closed in routine manner. Another incision of mid ventral abdomen was given for ovariohysterectomy. Abdomen and skin closure was done in routine manner. Sutures were removed after 12 days (Fig 3). Animal recovered uneventfully.



**Fig 1:** Right side swelling at inguinal area



**Fig 2:** Uterus and omentum were herniated



**Fig 3:** Skin incision was healed after 12 days

### Discussion

Inguinal hernia can be congenital or acquired. In males, it is congenital and more frequently seen than in females [1]. If it is congenital, dogs will be presented before 4 months of age. However, in few dogs it will not be identified in early stages. In present case, age of dog and progressive swelling from 3 months can support the congenital etiology. At the same time, estrus signs 4 weeks before presentation of case should be considered for effect of estrogen on rapid progression of swelling in past 2 weeks. Inguinal hysterocele with pyometra during diestrus stage was reported [7]. Pregnancy, pyometra, nutritional, obesity related increase in abdominal pressure,

short and dilated vaginal process are few predisposing factors for hysterocele [2, 3, 7]. Incarcerated inguinal hysterocele during pregnancy was reported and ovariohysterectomy was advised for non-reducible and incarcerated uterine horn in inguinal hernia [2]. Diagnosis of inguinal hernia can be done with radiography where gas loops are visible if intestines are involved and fetal skeleton can be seen if pregnant uterus is involved. However, ultrasonography will give good idea about organ which is herniated [1]. In present case physical examination (palpation) played key role in absence of radiography and ultrasonography. Soft, reducible or irreducible and non-painful swelling can be observed upon palpation. Differential diagnoses like mammary tumors, abscesses and mastitis should be ruled out. Clinical signs in intestinal incarceration includes vomiting and constipation. However, in chronic inguinal hernia in intact females, uterus in hernial sac will not allow small intestines into hernia [8]. This was the reason behind absence of gastrointestinal signs in present case. Similar case of inguinal hysterocele was reported in dachshund. Early presentation and careful physical examination in present case were reasons behind favorable outcome from surgery. In conclusion, the swelling over inguinal region in intact female dog should be considered for hysterocele as one of differential.

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