

# **SURGICAL MANAGEMENT OF PYOMETRA IN QUEEN: A CASE REPORT**



**A Clinical Report Submitted in Partial Fulfillment of the  
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# SURGICAL MANAGEMENT OF PYOMETRA IN QUEEN: A CASE REPORT



A Clinical Report Submitted as per approved styles and contents

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## **ABSTRACT**

The most common uterine disease affecting cats is pyometra. A six-year-old local cat was presented to Chittagong Veterinary and Animal Sciences University's Teaching and Training Pet Hospital and Research Centre in Dhaka, Bangladesh, with history of anorexia, chronic emaciation, and vaginal pus discharge before antibiotic therapy. A general physical examination was performed initially, followed by a particular investigation. The uterus felt firmer and more extensive than usual when palpated the abdomen. Then ultrasound examination was performed, which revealed radio-opaque fluid-filled structures in the caudal area of the abdomen. History and the findings confirmed the cat was suffering from pyometra. Then the case was surgically managed by ovariohysterectomy under general anesthesia. Ovarian cysts were found during the surgery. The cat had an uneventful recovery.

**Keywords:** Cat, Pyometra, Ultrasonography, Ovariohysterectomy

## INTRODUCTION

Pyometra in a cat is an acute or chronic suppurative inflammatory condition of the uterine wall. The condition of a cat (queen) marked by purulent material buildup in the uterine cavity (Hollinshead and Krekeler, 2016). Pyometra is frequently caused by the effect of the hormone progesterone, which induces hyperplasia and increased secretory activity of the endometrial glands (Lawler, 1995) Again, the bacterial invasion may cause pyometra in a cat (Smith, 2006).

The presence of ovarian cysts is also correlated with prolonged exposure to higher P4 level or E2 level (Mir *et al.*, 2013) The clinical appearance of pyometra in cats and dogs is similar.

A blood-stained, purulent vaginal discharge may be the only clinical symptom of 'open-cervix pyometra.' Animals with 'closed-cervix pyometra' may not have vaginal discharge and are more likely to become systemically unwell. Non-specific clinical indicators include anorexia, vomiting, lethargy, weight loss, and an untidy look (Nak *et al.*, 2005).

The most effective diagnostic tool in a pyometra case is abdominal ultrasonography. The uterine horns are typically distended with hypoechoic to hyperechoic fluid with or without coagulation The uterine wall frequently appears thicker, with uneven margins and minor hypoechoic regions, which is consistent with cystic endometrial gland alterations. (Verstegen and Incline, 2006) Restoration of fluid deficits, effective administration of antibiotics against bacterial organisms, and extraction of contaminated uterine contents are all part of the treatment.

Other treatments include surgical removal of the ovary and uterus (ovariohysterectomy) or the use of PGF<sub>2</sub>. (Nak *et al.*, 2005). In the study cat (queen), Amoxicillin and PGF<sub>2</sub> were used to treat twenty-four days prior. Unfortunately, there found no satisfactory result for the affected queen. So, we planned to perform the surgical management of pyometra in that queen.

## **MATERIALS AND METHODS**

### **Case History:**

A six-year-old cat (queen), weighing 4.4 kg, was taken to Chittagong Veterinary and Animal Sciences University's Teaching and Training Pet Hospital and Research Centre in Dhaka, Bangladesh, with a history of anorexia and chronic emaciation. This cat was treated with amoxicillin and PGF<sub>2</sub> twenty-four days prior. Physical examination revealed that the body temperature was 101.5° C, the heart rate was 168 beats per minute, and the respiration rate was 38 breaths per minute.

### **Diagnosis:**

When the uterus was palpated in the abdomen, it felt firmer and larger than usual. The abdomen ultrasonography revealed an anechoic fluid-filled region with no flocculation. A lateral X-ray imaging revealed several tubular, radio-opaque fluid-filled structures in the abdomen's caudal region. The structures seemed independent and different from the intestinal loops.

### **Restraining and Anesthesia:**

Initially, the cat was held on its side, back opposite to the handler, with the handler grasping the front and back legs and a forearm over the cat's neck. Xylazine hydrochloride (Inj. Xylazine®, Indian Immunologicals Ltd, India, 1mg/kg BW intramuscularly) was used as a muscle relaxant. Ketalar® (Inj. Ketalar®, Popular Pharmaceuticals Ltd., Bangladesh, 15 mg/Kg body weight intravenously) was used as general anesthesia.

During the surgical procedure, the maintenance dose of anesthetic was half the first dose. The operative area was prepared by following shaving and hair removal. Again, scrubbing the skin surrounding the surgery region was performed with 70% alcohol, followed by povidone-iodine and 70% alcohol.

### **Surgical Procedures:**

The cat was then positioned so that she was lying on her back, and a sterile draper was put over her, except for the surgical region, which remained exposed. The patient's blood pressure, heart rate, temperature, gum color, pulse strength, and anesthesia level were all closely monitored during the procedure.

An incision was made in the midline of the abdomen, just below the umbilicus along the length of the abdomen. Laparotomy was used to expose the abdominal cavity, and then adequate closure was applied to the uterine and ovarian blood arteries. There were multiple ovarian cysts found. Along with the cysts, uterine horns and uterus were completely removed. The abdominal wall, followed by the muscular layer was closed with catgut® (size: 1-0). The skin was then closed with a cosmetic suture pattern using vicryl® suture material.

### **Post-operative Care:**

Ceftriaxone, at a dose of 20 milligrams per kilogram of the patient's body weight (Injection Ceftron 250mg®, Square Pharmaceuticals, Bangladesh), was injected intramuscularly once per day for seven days. Antihistaminic chlorpheniramine maleate @1mg/ Kg body weight (Injection Alerin®, SK+F Pharmaceuticals Ltd., Bangladesh) was injected daily intramuscularly for seven days.

Analgesic (Injection meloxicam @40 mg/Kg body weight and Injection Melvet®, Acme Laboratories Ltd., Bangladesh) was administered subcutaneously daily for 5 days for pain management. The patient was placed in a sterile environment for seven days and monitored. There were no complications, and the queen recovered without issue. On the 14th day, the surgical site was totally healed and the queen was healthy.



## PICTURE GALLERY

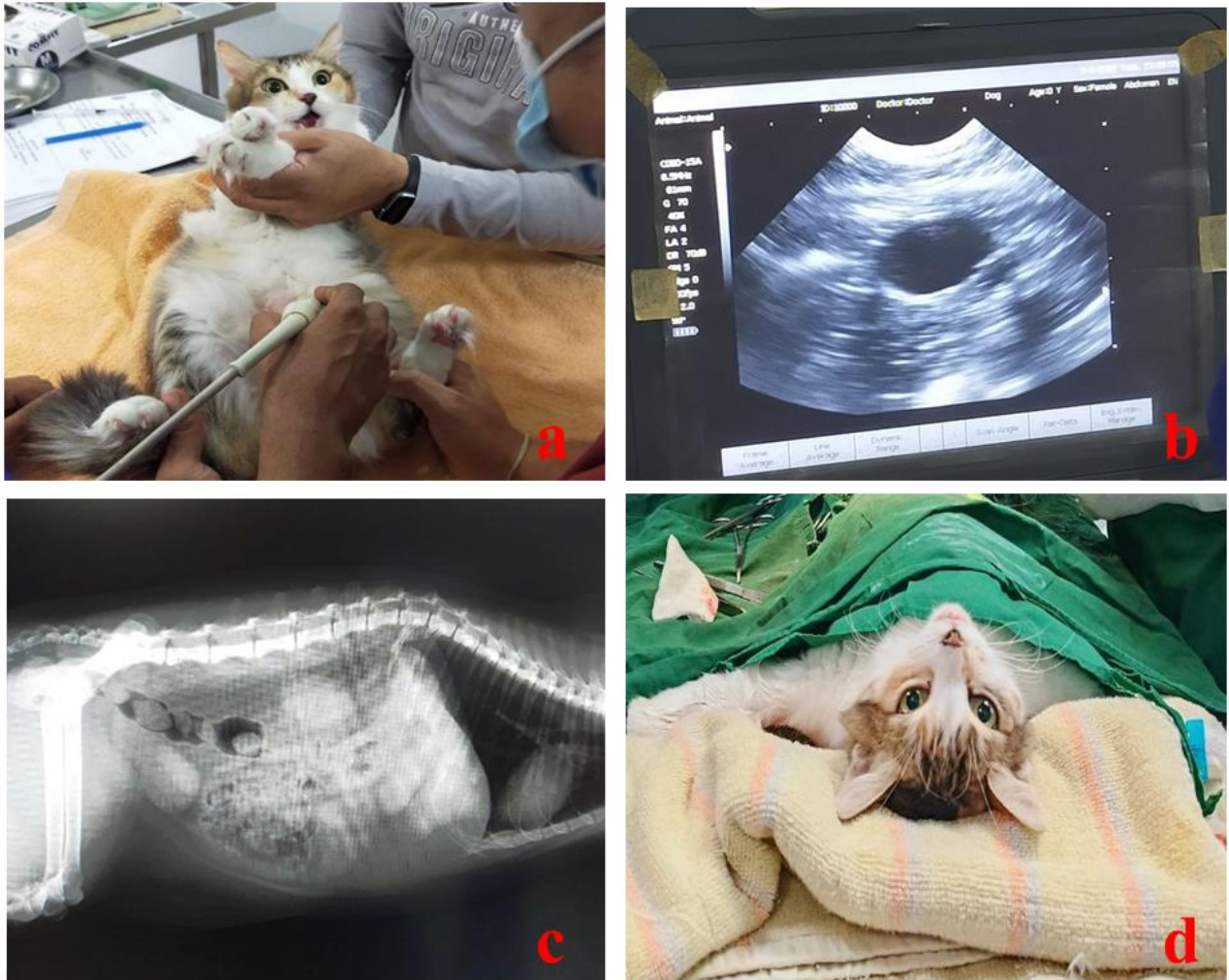


Figure 1: Surgical Management of Pyometra in Cat; a) Performing Ultrasound on the cat, b) Anechoic fluid filled pocket, c) Multiple tubular radio-opaque fluid-filled structures, and d) Patient under general anesthesia.

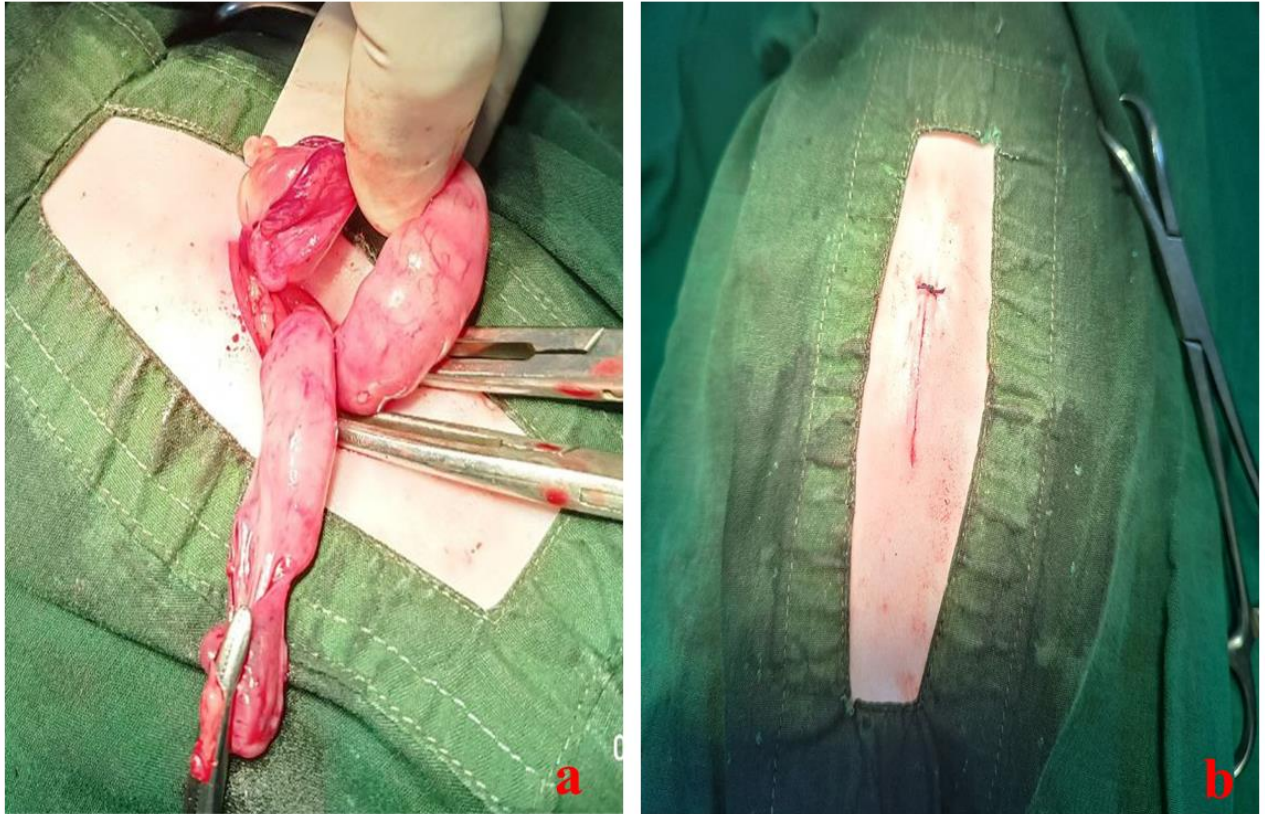


Figure 2: Surgical Procedure of ovariectomy; a) Uterus after exposing, and b) Incision closed with cosmetic suture pattern

## RESULT AND DISCUSSION

Pyometra in cats is a unique condition caused by low progesterone dominance owing to seasonality and forced ovulation (Hagman *et al.*, 2014). This cat had received amoxicillin and PGF2 as treatment twenty-four days before coming to the Teaching and Training Pet Hospital and Research Center.

As there were ovarian cysts found during the surgery, it can be a possible reason for this pyometra (Sugiura *et al.*, 2004). Though no complications occurred throughout the surgery. Some surgeons use intramuscular administration of atropine sulfate as premedication before anesthesia; however, that was not used in case of this surgery, and neither was needed. Ketoprofen was used as a painkiller in post-operative medication before, but Meloxicam was the preferable choice to use in this case due to its availability, though no significantly different effects were noted. (Biswas *et al.*, 2012)

As an antibiotic choice in post-operative medication, Amoxicillin was used in some cases, but Ceftriaxone was used due to its broad-acting nature (Sudheesh *et al.*, 2021).

The key to saving the patient's life is early ovariohysterectomy instead of antibiotics and hormonal treatment. Ovariohysterectomy is the most successful treatment option since it removes the source of infection and bacterial products while preventing recurrence (Hardy and Osborne, 1974). In this case, a quick ovariohysterectomy and precise antibiotic medication saved the cat's life.

## **CONCLUSION**

The current case study found that treating pyometra in a queen using ovariohysterectomy was straightforward and successful. Post-operation morbidity is affected by the surgical procedure and the postoperative therapy chosen. Successful surgical management of pyometra with ovarian cysts by ovariohysterectomy in a cat was reported and recorded. It is recommended to use the utmost aseptic condition to perform the surgery.

## **LIMITATIONS**

There are several limitations to this study. Because this was a retroactive clinical study, several complications, such as post-operation management, complication management, and timings for galvanization and/or disintegration, were included. As a result of the owner's lack of understanding, post-operative conditions and radiological pictures were not documented for this research, which is the study's most significant weakness.

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**The Author, August 2022**

## **BIOGRAPHY**

This is **Md. Shafinul Islam**, son of Md. Rashedul Islam and Alish Akhter Shahnaj Parvin. I was born in Pabna District and raised in the Gazipur District. I graduated from Rani Bilash Moni Govt. Boys High School in 2013 with an SSC and Gazipur Cantonment College with an HSC in 2015. In the 2015-16 academic year, I was accepted into Chattogram Veterinary and Animal Sciences University's Doctor of Veterinary Medicine (DVM) program. As a future veterinarian, I hope to devote the remainder of my life to animal welfare. I want to work as both a field veterinarian and a professional practitioner.