

CASE REPORT

Surgical Intervention for Open Cervix Pyometra in a Rottweiler: A Case Report

Manjusha G Patil¹, Devashish A Bawaskar², Damini S Mankar³, Pankaj B Hase⁴

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ABSTRACT

Pyometra is a life-threatening uterine infection in intact female dogs, commonly caused by *Escherichia coli*. This report presents a case of open cervix pyometra in a six-year-old intact female Rottweiler, which was presented to the Department of Veterinary Gynaecology and Obstetrics at the College of Veterinary Science, Parbhani, MAFSU, with a 10-day history of anorexia, lethargy, depression, vomiting, polydipsia, polyuria, and sanguinopurulent haemorrhagic vaginal discharge, with no history of mating. Clinical examination revealed dehydration, abdominal distension, leucocytosis (58,000 cells/mm³), neutrophilia, thrombocytopenia (78,000 cells/mm³), and elevated blood urea nitrogen (56.7 mg/dL), indicating systemic involvement. Ultrasonography confirmed a fluid-filled, distended uterus. Based on the history, clinical signs, and ultrasonographic findings, the case was diagnosed as open-cervix pyometra. The dog was stabilized with intravenous fluids, antibiotics (ceftriaxone-tazobactam), and NSAIDs before undergoing ovariohysterectomy under general anaesthesia. The pus-filled uterus was surgically removed, and post-operative management included antibiotics and analgesics. The patient recovered uneventfully, with sutures removed on the 15th postoperative day. This case highlights the importance of early diagnosis, medical stabilization, and surgical intervention in managing pyometra. Ovariohysterectomy remains the gold standard treatment, preventing recurrence and improving survival outcomes.

AUTHOR'S AFFILIATION:

¹Professor, Department of Veterinary Gynecology and Obstetrics, College of Veterinary Science, Parbhani 431402, Maharashtra, India.

²M.V.Sc. Scholar, Department of Animal Reproduction Gynecology and Obstetrics, College of Veterinary and Animal Sciences, Parbhani 431402, Maharashtra, India.

³M.V.Sc. Scholar, Department of Animal Reproduction Gynecology and Obstetrics, College of Veterinary and Animal Sciences, Parbhani 431402, Maharashtra, India.

⁴Assistant Professor, Department of Veterinary clinical Medicine, Ethics and Jurisprudence, Mumbai Veterinary College, Parel, Mumbai 400012, Maharashtra, India.

CORRESPONDING AUTHOR:

Manjusha G. Patil, Professor, Department of Veterinary Gynecology and Obstetrics, College of Veterinary Science, Parbhani 431402, Maharashtra, India.

E-mail: drmanjushapatil121@gmail.com

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KEYWORDS

- Dog • Open pyometra • Ovariohysterectomy • Endometritis • Laparotomy
- Pyometra • Sanguinopurulent

INTRODUCTION

Pyometra is a prevalent reproductive disorder in intact, dioestrus female dogs, affecting nearly 24% before they reach 10 years of age. This condition is characterized by the accumulation of pus within the uterus and typically occurs during or shortly after periods of elevated progesterone levels (Kumari *et al.*, 2010). The bacteria isolated from the uteri of dogs with pyometra belong to diverse species; *Escherichia coli* is most frequently isolated (Chotimanukul *et al.*, 2010). Closed-cervix pyometra is more severe due to toxin absorption from accumulated pus, leading to toxæmia. In contrast, open-cervix pyometra results in less systemic illness. Cystic Endometrial Hyperplasia (CEH) frequently precedes pyometra but can also be present in many older bitches without signs of the disease. Severe pyometra can occasionally lead to fatal systemic infection and infertility in some bitches. Additionally, pyometra has been reported as a secondary condition to postpartum metritis (Brain *et al.*, 2012). The pathogenesis of pyometra is only partly understood, but it is generally recognized that primary hormonal imbalance or an abnormal response to normal concentrations of oestrogen and progesterone affects the epithelial cells of the uterus and facilitate bacterial adhesion, colonisation and growth (Noakes *et al.*, 2001). Pyometra

is a medical emergency requiring immediate treatment. Without prompt intervention, the infection can be fatal. Mostly canine pyometra is closely associated with other conditions of the uterus like mucometra, and hydrometra. Ovariohysterectomy is the preferred treatment for pyometra, especially in the early stages, due to its low surgical risk and high success rate. In toxæmic cases, the success rate may be lower. Before surgery, the bitch should be stabilized with fluid therapy and broad-spectrum antibiotics. However, surgical treatment also has limitations when it is dangerous due to anaesthesia and surgical intervention, which is life-threatening (Kumari *et al.*, 2010)

CASE HISTORY AND OBSERVATIONS

A 6-year-old female Rottweiler weighing 41.80 kg was presented with a 10-day history of anorexia, lethargy, depression, vomiting, increased thirst (polydipsia), and increased urination (polyuria). A Sanguinopurulent haemorrhagic discharge oozing from the vagina was observed. Physical examination revealed a distended abdomen. Clinical assessment showed a temperature of 102.3°F, heart rate of 72 beats per minute, respiratory rate of 45 breaths per minute, and dry, congested conjunctival membranes, indicating sepsis and dehydration.



Fig. 1: large sized uterus with pus after exteriorization through caudal midventral abdominal incision in a dog



Fig. 2: Enlarged uterus with convoluted, tubular horns filled with anechoic to hypoechoic fluid

Previously the case was treated by local vet by several time but no significant response to the treatment and bitch was not recover. Ultrasonography revealed an enlarged uterus with convoluted, tubular horns filled with anechoic to hypoechoic fluid as shown in (fig-2). Haematological evaluation showed a decreased platelet count (78,000 cells/mm³), leucocytosis (58,000 cells/mm³), and neutrophilia with a significant left shift. Blood urea nitrogen (BUN) and serum creatinine levels were 56.7 mg/dL and 2.3 mg/dL, respectively, indicating severe kidney damage. Prior to surgery, the patient was stabilized with fluid therapy, and administered injections of pantoprazole at 1 mg/kg, ceftriaxone-tazobactam at 20 mg/kg, and flunixin meglumine at 2.2 mg/kg.

Treatment and Results: The dog was premedicated with Inj. Atropine sulphate @ 0.04mg/kg body weight intramuscularly. Sedation was induced by of inj. Xylazine hydrochloride @ 1.0 mg/kg and induction done by Inj. Ketamine hydrochloride @ 5.5mg/kg intravenously and maintained with Ketamine@10 µg/kg/min. Ovariohysterectomy was performed through caudal mid ventral abdominal incision. With the patient positioned in dorsal recumbency, a ventral midline skin incision starting near the xiphoid process and extending caudally to the pubis, then sharply incised the subcutaneous tissues to expose the external fascia of the rectus abdominis muscle. Throughout the procedure it was taken care to ligate any small subcutaneous bleeding vessel and identify the Linea alba. To enter the abdominal cavity, a tent was made on the abdominal wall and made a sharp incision into the Linea alba with a scalpel blade. Pus filled uterine horns and body were carefully exteriorized as shown in (Fig-1). The abdominal wall and skin were closed by standard procedures. After disinfecting the wound with an antiseptic solution, it was protected with an adhesive dressing. Postoperatively, the animal was fed moist food and received daily parenteral antibiotics include Ceftriaxone +tazobactam @ 20mg/kg and NSAIDs for seven days. Sutures were removed on the 15th postoperative day. No significant complications were observed during anaesthetic recovery or wound healing.

DISCUSSION

According to (Verstegen *et al.*, 2006), common clinical signs of pyometra include vaginal discharge, lethargy, increased thirst (polydipsia), increased urination (polyuria), vomiting, and an initial rise in body temperature (hyperthermia) followed by a drop (hypothermia). (Singh *et al.* 2008) have also noted these symptoms in their studies. The therapeutic management of canine pyometra is successful in the early stages and ovariohysterectomy (OHE) is the choice of treatment in late phases of pyometra (Roberts *et al.*, 1971). It has been reported that inoculation of *E. coli* into the uterus on days 11 to 20 and 20 to 30 after the luteinizing hormone peak caused canine pyometra because at that time the uterus is most susceptible to infection (Smith *et al.*, 2006). A lack of vaginal discharge causes pus to build up inside the uterus, which results in more systemic symptoms in closed cervix pyometra. In open cervix pyometra, the vaginal discharge is pale cream, sometimes slightly pink (Baithalu *et al.*, 2010). The prognosis for pyometra largely hinges on the extent of endometrial damage, which is influenced by factors such as the severity of uterine pathology, the duration of the condition prior to diagnosis, the effectiveness of treatment, and the likelihood of recurrence. Preventing pyometra poses challenges due to natural age related changes in the uterus, primarily resulting from prolonged progesterone exposure during oestrous cycles. Notably, the risk of developing pyometra increases with the number of oestrous cycles a female dog experience.

CONCLUSION

Despite significant advancements in veterinary research and development, an effective treatment for canine pyometra remains elusive. This challenge is partly due to the complex nature of the disease and a lack of comprehensive understanding of its etiopathogenesis. Early diagnosis and appropriate intervention are crucial for successful treatment. Additionally, incorporating immunotherapy alongside specific pyometra therapies may enhance disease prognosis.

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