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Surgical management of closed cervix pyometra in a bitch

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Abstract

An eight-year-old, intact, non-descript bitch weighing 14 kg was presented with a history of vomiting, anorexia, lethargy, polyuria, dyspnoea and abdominal distension. Hemato-biochemical evaluation revealed marked leukocytosis and azotemia, while ultrasonography demonstrated a severely distended fluid-filled uterus, confirming the diagnosis of closed-cervix pyometra. The bitch was stabilized with fluid therapy, antibiotics, and supportive medications before undergoing ovariohysterectomy through a ventral midline celiotomy. The animal recovered uneventfully with complete clinical improvement. This case highlights the importance of early diagnosis, preoperative stabilization, and timely surgical intervention in the successful management of closed-cervix pyometra in dogs.

Keywords: Closed-cervix pyometra, bitch, canine pyometra, ovariohysterectomy

1. Introduction

Pyometra is a common reproductive disorder in unspayed, middle-aged female dogs, during the luteal phase of the estrous cycle. It involves the buildup of purulent material within the uterus due to uterine infection and is considered one of the most frequently encountered uterine diseases in canines (Hagman, 2018) ^[1]. Pyometra most often develops during or shortly after the diestrus stage, when progesterone levels are high. Increased progesterone promotes changes in the uterus by enhancing glandular secretions, reducing uterine muscle contractions, and weakening the local immune response, thereby creating a favourable environment for bacterial growth and uterine infection (Fieni *et al*, 2014) ^[2]. Clinical manifestations of canine pyometra commonly include polyuria, polydipsia, reduced appetite, lethargy, and vaginal discharge in cases with an open cervix, while a closed cervix may result in abdominal enlargement due to retained uterine contents. If left untreated, the condition can rapidly progress to severe complications such as peritonitis, septicemia, multiple organ dysfunction, and uterine rupture (Jitpean *et al*, 2017) ^[3].

The clinical presentation of pyometra differs according to whether the cervix is open or closed, with the closed-cervix form generally associated with more severe systemic disease. In closed pyometra, the inability to drain uterine contents promotes bacterial toxin absorption, increasing the risk of endotoxemia (Foster and Smith, 2006) ^[4]. Treatment may be either medical or surgical and is selected based on the dog's overall health, reproductive importance, and cervical status. However, ovariohysterectomy is considered the preferred treatment for non-breeding animals because it removes the source of infection and reduces the likelihood of serious complications, including endotoxemia and kidney damage. This report describes the successful surgical treatment of a case of closed-cervix pyometra in a bitch.

Case history and diagnostic work-up

An eight year old, intact, non-descript bitch weighing 14 kg was presented to TVCC, Bihar Veterinary College, Patna with severe systemic illness. It showed symptoms of progressive vomiting, anorexia, lethargy, polyuria and dyspnoea from last 10 days. Abdominal distension was observed on clinical examination. Tentative diagnosis of closed pyometra was made based

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on history and clinical findings. Further, hemato-biochemical and ultrasonographic examination was performed for confirmation. Lab tests revealed severe leucocytosis (98.1×10^3 / μ L) and marked azotemia (BUN -120 mg/dL, 8.78 mg/dL). Large anechoic sacs (figure 1) were found in the abdominal region on USG examination confirming the case to be of closed cervix pyometra.



Fig 1: Anechoic sacs in uterus depicting pyometra

Treatment

Initial medical treatment was done for 3 days with inj Ceftriaxone, inj ondansetron, inj pantaprazole, inj B complex + ascorbic acid, inj furosemide and fluid therapy with Normal Saline and Ringer's Lactate. Further, surgical removal of pus filled uterus along with ovaries - ovariectomy was done by ventral midline celiotomy under general anaesthesia (figure 2). Gentle handling was done to avoid rupture of severely distended thin walled uterus (figure3). Warm saline lavage of abdomen was done to reduce bacterial contamination after excision of infected uterus and ovary. Post-operative management included regular antiseptic dressing of the surgical wound along with antibiotic and supportive therapy – inj Ceftriaxone, inj. meloxicam, inj B complex + ascorbic acid, infusion DNS 5% IV for 3 days, tablet chymotrypsin (1 tab orally once daily for 10 days) and multivitamin syrup (5 ml orally bid for 15 days). The animal recovered uneventfully in two weeks.



Fig 2: Aseptic surgical site preparation in bitch



Fig 3: Exteriorized distended pus filled uterus

Discussion

Development of pyometra is influenced by multiple factors, including bacterial invasion, hormonal imbalances that create a favorable uterine environment, inherited susceptibility, and

underlying pathological changes in the uterus (Xavier *et al*, 2023) [5]. Medical management of canine pyometra may be effective when the disease is diagnosed in its early stages; however, as the condition progresses, it becomes a life-threatening emergency requiring immediate veterinary intervention (Singh *et al*, 2008) [6]. In advanced cases and cases with closed-cervix ovariohysterectomy (OHE) is regarded as the treatment of choice because it eliminates the source of infection and helps prevent serious complications (Vaishnavi *et al*, 2026) [7]. Following removal of the infected uterus and ovaries, most dogs show marked clinical improvement and return to normal health within approximately two weeks as occurred in present case (Xavier *et al*, 2023) [5].

Conclusion

Pyometra is a common reproductive disorder of adult intact bitches over 5 years of age. This case report highlights the importance of early diagnosis, preoperative stabilization, and timely surgical intervention in the successful management of closed-cervix pyometra in dogs.

Conflict of Interest

Not available

Financial Support

Not available

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