

## Rupture of Uterus in a Bitch Leading to Pyoabdomen and its Surgical Management: A Case Report

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### ABSTRACT

The successful surgical management of pyoabdomen due to uterine rupture at whelping in a bitch is reported here.

**Keywords:** Bitch, pyoabdomen, surgical management, uterine rupture, whelping

The rupture of the uterus in bitches is an acute, life-threatening condition observed by the end of pregnancy or during parturition that appears most commonly as a result of dystocia (Hajurka *et al.*, 2005) and is one of the rarely diagnosed clinical entities in canines. The main causes that could lead to uterine rupture are trauma, uterine torsion (Stone *et al.*, 1993; McEntee 1990), pathological alterations of the uterine wall, inadequate obstetric care, application of high doses of oxytocin or prostaglandin F<sub>2α</sub> (Allcock and Penhale, 1952; Oelzner and Munnich, 1997; Noakes *et al.*, 2001; Jackson, 2004), consequence of dystocia or because of fragility of the uterine walls in pyometra (Johnston *et al.*, 2001) and forced extraction of an oversized fetus. In the bitch, rupture of the uterus during labour has also been commonly associated with very large litters, causing marked stretching and thinning of the uterine wall (Davidson, 2003). Symptoms and prognosis of uterine rupture varies individually and with the portion of the genital organ involved, the size and the nature of the rupture (horizontal or transversal) and the amount of uterine material

that escapes into the abdominal cavity (Roberts, 1970). Therefore, inappropriate obstetrical technique is suggested as a potential cause of canine uterine rupture.

### CASE HISTORY AND OBSERVATIONS

A five years old age bitch was presented with a history of whelping 5 days back with gradually distended abdomen just after assisted whelping and intermittent foul smelling vaginal discharge. Bitch was dull and depressed, pale mucus membrane, general debility and anorectic. Hematological examination revealed Hb and TLC level as 6.5 g/dL and 32300/mm<sup>3</sup>, respectively. Depending upon history, clinical examination and blood profile; case of open pyometra was tentatively diagnosed. Bitch was treated with injection ceftriaxone plus tazobactam, meloxicam, chlorpheniramine maleate, iron tonic and metronidazole for 5 days. But there was no improvement after this treatment and animal also started vomiting. It was decided to conduct diagnostic exploratory laparotomy.

### TREATMENT AND DISCUSSION

Bitch was premedicated with atropine sulphate @ 0.04mg/kg b.wt. and general anesthesia was achieved using xylazine @ 2.2mg/kg b. wt. and ketamine @1.1mg/kg b. wt. Skin incision was given at mid ventral line site i.e. linea alba. Muscle layers were incised and about 4 to 5 liters of pus sucked using suction apparatus (Figs. 1 & 2).



**Fig. 1 & 2:** Pus sucked using suction apparatus during exploratory laparotomy

After thorough cleaning of abdominal organs using normal saline solution and metronidazole a small sized 2mm × 2mm rupture was seen on uterine horn through which pus escaped from uterine horn to abdomen that caused severe adhesion of various organs like small intestine, large intestine, mesenteries, uterine horn, spleen and kidney etc. A thick layer of pus was removed very gently using sterile mop and gentle massage of organs. As all organs were jam packed and ovariohysterectomy could not be

performed otherwise it would have resulted into extensive bleeding and adhesions. The rupture was freshened and sutured with Cushing and Lembert suture pattern with catgut no. 1.

Hence, it was decided to close the incision site after fixing the Foley's two-way catheter for performing abdominal lavage (Fig. 3). The closure of abdominal muscles and skin was done in a routine manner.



**Fig. 3:** Foley's two-way catheter fixing for performing abdominal lavage

Post operatively bitch was kept on fluid therapy and inj. Intacef-Tazo 562 mg (Ceftriaxone plus tazobactam, Intas Animal Health Ltd), Melonex 2 ml (Meloxicam, Intas Animal Health Ltd), Avil 1 ml (Chlorpheniramine maleate), Tribivet 1.5 ml (Vitamin-B complex, Intas Animal Health Ltd), antiemetic, iron tonic and daily abdominal lavage using normal saline solution mixed with metronidazole with gentle massage of abdominal cavity from outside.

After 10 days of abdominal lavage turbid lavage fluid started changing to clear fluid and animal started taking liquid diet. Abdominal lavage and parental therapy continued for 12 days and Foley's two-way catheter was removed. Animal showed full recovery after 15 days of exploratory laparotomy.

Uterine rupture is a catastrophic event and majority of cases are undiagnosed due to concurrent serious injury or fatality (Hayes, 2004) of which majority is caused by hypovolemic shock (Olu and Olamijulo, 1998). Humm *et al.* (2010) reported a clinical case of a Great Dane with ruptured uterus and septic peritonitis secondary to administration of high doses of oxytocin and manual assistance during parturition.

However, several reports found in literature agree with association of such complications with erroneous oxytocin or prostaglandin application or manually assisted whelping (Jackson, 2004; Hajurka *et al.*, 2005) or trauma during late pregnancy or even during normal whelping (Linde-Forsberg, 2010). Various workers have suggested ovariectomy for treatment of uterine rupture in canine patients (Hayes, 2004) while others have recommended repair of uterine defect followed by abdominal lavage and postoperative antibiotic therapy (Thilagar *et al.*, 2004). Repeated dystocia and repeated assisted manual delivery of pups each time may further turn the small incomplete uterine rupture to large complete rupture in polytocous species. The recovery in the present case was remarkable, which might be due to early reporting of the case, diagnosis, emergency stabilization of patient and immediate surgical intervention.

## CONCLUSION

The present clinical case provided the evidence of small uterine rupture at the time of assisted whelping and subsequent pyoabdomen. Although, such conditions are rarely observed in clinical practice. Therefore, proper diagnosis and timely correct surgical intervention is very important.

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*N* Niwas *et al.*

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