

# UTERINE RUPTURE FROM OXYTOCIN OVERDOSE AND SUCCESSIVE MANAGEMENT OF POST SURGICAL COMPLICATIONS IN A DOG

Sophia. Xavier, Laiju M.P., Jayakumar C. and Abhilash R.S.

Department of Animal Reproduction, Gynaecology and Obstetrics, College of Veterinary and Animal Sciences, Mannuthy, Thrissur (Kerala).

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A Labrador retriever bitch, treated for presumed partial primary uterine inertia with repeated doses of oxytocin, was diagnosed with uterine rupture and a retained dead foetus in the peritoneum. The dog underwent a cesarean section and a complete wound dehiscence and septic peritonitis followed. An ovariohysterectomy was performed and laparotomy wound closed under sterile conditions. Recurrence of wound dehiscence with peritonitis followed the third day of ovariohysterectomy. Stainless steel sutures were used for abdominal wall apposition and peritoneal effusion managed with peritoneal drainage and lavage with a Foley's catheter. Animal recovered uneventfully after two weeks of post operative care.

**Keywords:** Dead puppies, Laparotomy, Obstetrical technique, Uterine rupture.

Periparturient uterine rupture is an uncommon complication in dogs. However, rupture during or after birth occurs when the uterine wall is compromised; such as in the presence of infection, a dead fetus, uterine torsion, or inappropriate obstetrical technique. Excessive doses of oxytocin are also suggested as a potential cause of uterine rupture (Davidson, 2001). The dog under report was administered with large doses of oxytocin that resulted in uterine rupture and this report also highlights the successful management of wound dehiscence and septic peritonitis.

## Case report

A Labrador retriever, aged 1.5 years was presented to University Veterinary Hospital, Kokkalai a day following the birth of 3 live and 2 dead puppies. The dog was administered with a total of 50 IU of oxytocin in two doses intramuscularly (IM) by the owner during the whelping process. On presentation, the animal was dull, depressed and anorectic. Radiographic examination of abdomen revealed single retained foetus and trans-abdominal sonography confirmed death of the foetus. Laparotomy under propofol induction and isoflurane maintenance revealed a serosanguinous fluid and a dead foetus in peritoneum as well as a full thickness uterine rupture in left uterine horn.

As the owner declined performing an ovariohysterectomy, the dead foetus was extracted; devitalized uterine area was removed and reconstructed with cushing and lembert suture pattern. Laparotomy wound closed under standard procedures after abdominal lavage. Post surgical antibiotic and fluid therapy was provided. Two days later animal was presented with surgical wound dehiscence and reluctance to stand. Clinical assessment revealed a tachycardia (200 bpm), tachypnea (42 breaths/min) and pyrexia (103.4<sup>0</sup>F). Hematology revealed a degenerative left shift with a neutrophil count of  $5.32 \times 10^9/L$  and 54% band cells. Plasma volume expanders and antibiotics were intravenously administered. Laparotomy under general anaesthesia revealed necrotizing metritis and septic peritonitis and an ovariohysterectomy was performed. Peritoneal lavage with warm normal saline and resuturing of laparotomy wound was done. Postoperative antibiotic and fluid therapy was continued.

On third day of ovariohysterectomy, animal was presented again with complete dehiscence of laparotomy incision and evisceration of omentum and intestine (*Fig. 1*). Under general anaesthesia, wound edges were scarified and to promote abdominal drainage and lavage, a two way Foley's catheter was placed by tunneling of abdominal muscles and fixed in position. The

bulb of the foley's catheter was filled with normal saline and daily drainage and lavage promoted (Fig. 2&3). Laparotomy wound closed with polypropelene size 1 and stainless steel sutures of size 21 were passed through full thickness of skin and muscle to reduce tension on interrupted polypropelene sutures. Culture of the abdominal fluid yielded growth of *Escherichia coli* which was sensitive to enrofloxacin and metronidazole and therapy

was continued on enrofloxacin (5 mg/kg) q 24 hours and metronidazole (20 mg/kg) q 12 hours for 10 days. Abdominal lavage with saline and metronidazole continued daily for ten days. When the turbid abdominal lavage fluid became clear, Foley's catheter was removed. Wound healing and marked clinical improvement was evident and animal made an uneventful recovery in two weeks.



**Fig.1. Wound dehiscence**



**Fig. 2 & 3. Foley's catheter for abdominal lavage**

## Discussion

Oxytocin is used therapeutically to relieve non-obstructive dystocia in bitches. Intramuscular doses as low as 0.25 IU of oxytocin may stimulate effective contractions while, doses of 5 IU or more are associated with uterine tetany. Over dosage leads to hypertonic or tetanic contractions, tumultuous labor, uterine rupture and fetal death as also reported by Davidson, 2001. Uterine rupture in this dog could be attributed to the repeated high doses of oxytocin. A severe diffuse necrotizing metritis and septic peritonitis with subsequent wound dehiscence followed the cesarean section in this dog. Post-cesarean metritis as well as the majority of wound infections are ascending in nature and caused by normal vaginal microorganisms entering the uterus as also mentioned by Orfanou *et al.*, 2010. Prolonged labour and dystocia, followed with oxytocin induced uterine rupture could have caused colonization of normal vaginal bacteria in the uterus. During surgery, bacteria can be transported by foetal fluids not only to uterine incisions, but also to abdominal incisions as also reported by Normand *et al.*, 2001. Suture material rejection may be enhanced by the presence of infection as a promoting cause of suture

dehiscence. Hayes (2004) suggested ovariohysterectomy for treatment of uterine rupture in canine patients while Thilagar *et al.* (2004) recommended repair of uterine defect followed by abdominal lavage and postoperative antibiotic therapy. In the dog under report, necrotizing metritis and presence of infection would have instigated the wound dehiscence, following which OHE became inevitable.

## Conclusions

The present case report highlights the need for proper diagnosis of cause of dystocia in dogs and judicious use of oxytocin in canine dystocia. Also it illustrates the benefit of peritoneal drainage and lavage promoted with the use of foley's catheter in management of septic peritonitis in dogs.

## References

- Davidson, A.P. (2001). Uterine and foetal monitoring in the bitch. *Veterinary Clinics of North America: Small. Anim. Pract.*, **31**(2): 305- 313
- Hayes, G. (2004). Asymptomatic uterine rupture in a bitch. *Vet. Rec.*, **134**: 438-439.
- Normand, M.C. and Damato, E.G. (2001). Post-cesarean Infection. *J. Obstet.*,

- Gynecologic, & Neonatal Nursing*, **30**(6): 642-648.
- Orfanou, D.C., Ververidis, H.N., Boscas, C.M. and Fthenakis, G.C. (2010). Post-partum pathological condition in the bitch – Part II. *European J. Companion Anim. Practice.*, **20**(2): 119-126.
- Thilagar, S., Zurin, M.J. and Loh, P.K. (2004). Uterine rupture in a Dachshund bitch. *Indian J. Vet. Surg.*, **26**: 116.