

Surgical Management of Dystocia due to Secondary Uterine Inertia in Dog- Case Report

Anjan Kumar Sahoo^{1*}, I Nath², A Nahak³, SS Behera², D Parija⁴ and SP Nayak⁴

¹Department of Teaching Veterinary Clinical Complex, College of Veterinary Science and Animal Husbandry, OUAT, Bhubaneswar, Odisha, India

²Department of Veterinary Surgery and Radiology, College of Veterinary Science and Animal Husbandry, OUAT, Bhubaneswar, Odisha, India

³Department of Veterinary Gynecology and Obstetrics, College of Veterinary Science and Animal Husbandry, OUAT, Bhubaneswar, Odisha, India

⁴MVSc Scholar, Department of Veterinary Surgery and Radiology, OUAT, Bhubaneswar, Odisha, India

***Corresponding Author:** Anjan Kumar Sahoo, Assistant Professor, Department of Teaching Veterinary Clinical Complex, College of Veterinary Science and Animal Husbandry, OUAT, Bhubaneswar, Odisha, India.

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Abstract

Dystocia due to secondary uterine inertia leading to stinking of dead fetus in cervical canal are occasional in companion animals. Two cases of secondary uterine inertia leading to stinking of dead fetus in cervical canal have been presented with surgical correction for removal of fetus. Cases were presented to Teaching Veterinary Clinical Complex (TVCC) with history of dystocia for 36 hours after whelping. Computed Radiography of the abdomen reveals presence of fetus stucked in the birth canal and cervix of the bitches. On per-vaginal palpation the fetus were found dead and emphysematous. Putrid smelling lochial discharges were coming out through the vagina. The animals were showing frequent labour pain, licking the hind part, pyrexia and had gone for off feed since twenty four hours. Supportive measures to relieve dystocia were made by administering oxytocin, calcium and glucose therapy but were futile. Hence, left flank laparotomy incision was chosen for surgical correction. Then, dead emphysematous fetus stucked in the birth canal was milked out through Vagina without incising the uterus in case I and mid cervical incision was performed to exteriorize the fetus in case II. Resuscitative measures were taken to stabilize the animals after operation. Abdomen was closed routinely with PDS-1. The wound was healed without any postoperative complication.

Keywords: Dystocia; Secondary Inertia; Emphysematous Fetus; Bismuth Iodoform Paraffin Paste (BIPP)

Abbreviations

BIPP: Bismuth Iodoform Paraffin Paste; NS: Normal Saline; DNS: Dextrose Normal Saline; PDS: Polydioxanone; TVCC: Teaching Veterinary Clinical Complex; Hb: Haemoglobin; TLC: Total Leukocyte Count

Introduction

Dystocia (difficult parturition) is a condition where by the dam becomes unable to expel the fetus (live or dead) during parturition through the birth canal and needs manual assistance. The incidence of dystocia varies according to the breed of dog i.e. the brachycephalic (short-faced) breeds such as the Bulldog and Boston terrier, for example, have a higher incidence than crossbred dogs due to large fetal head size [1,2]. Bitches of 2 - 4 years age were found to be more affected according to a survey [3] than adult one. The cause for dystocia in bitch may be fetal or maternal origin and the incidence being higher on fetal side (75.3%) than maternal (24.7%) [3]. The various fetal

causes of dystocia includes fetal malposition, fetal oversize, malformation, monstrosities, fetal death, emphysematous fetus etc [4]. One of the primary cause of dystocia from maternal side is primary uterine inertia approaching 75% of the cases [3]. This may be due to anatomical abnormalities or disturbances of the physiological interaction between hormones (oxytocin) and electrolytes (low plasma calcium concentration). Secondary uterine inertia is most commonly the result of uterine exhaustion following obstructive dystocia [2]. This may occur due to an obstruction in the birth canal or may happen spontaneously during second stage parturition. Timely and appropriate interventions for dystocia, either medical, surgical or both are crucial for both maternal and fetal survival. When all the option for medical management of dystocia has failed or is inadvisable, prompt surgical intervention is recommended.

This article describes an one method of correction of dystocia happened due to secondary uterine inertia through partial modification of traditional methods for caesarian section where after left flank incision, fetus is milked out of birth canal instead of incising and avoiding extra stress on patient.

Methods

Two dogs were selected in the present case study depicting dystocia due to secondary uterine inertia.

Case I

A 2.5 year old German shepherd bitch weighing 24.5 kg was presented to Teaching Veterinary Clinical Complex (TVCC), College of Veterinary Science and AH (CVSc and AH) with history of anorexia, dull, depressed, frequent licking of perineal area, putrid smelling black to greenish discharges from vagina (indicating placental separation and fetal distress). It has been already treated with Oxytocin (10 units I/V), Ceftriaxone (500 mg) IM, Fevastin (paracetamol I/V), Ringer's lactate and calcium Sandoz IV. On clinical examination the animal was found dehydrated, pyretic (104.5°F) with Hemoglobin values 12.5% and TLC count 18,000. The animal had already given birth to two live pups 30 hours before. On per vaginal examination, the birth canal was found dry and only posterior limb extremities could be palpated at deep pelvic inlet. The bitch had been straining intermittently and very slowly to deliver the next pup without any progress. Right lateral radiographic examination of the pelvis revealed presence of a fetus with posterior presentation stuck in the cervical canal and head extending into body of uterus. Free gas was seen accumulated within the fetus with overlapping of bones of fetal skull confirming dead fetus. As there was clear symptom of toxemia with dead emphysematous fetus which could not be delivered normally emergency surgery was attempted with adequate resuscitation measure taking utmost care not to spare the life of the mother.



Figure 1: Milking out of fetus through birth canal without incising uterus.

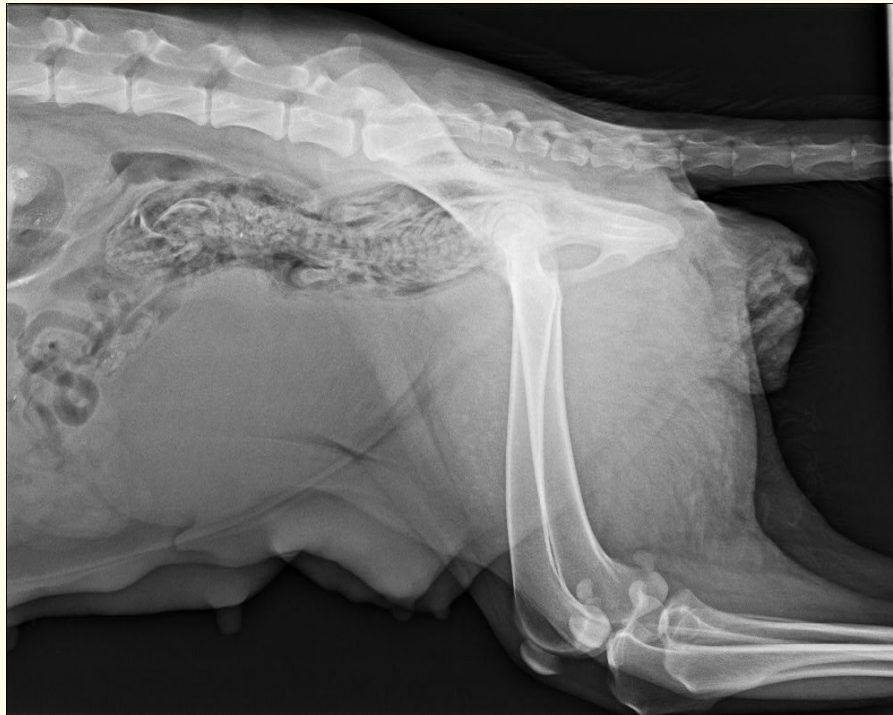


Figure 2: Sticking of fetus in birth canal.

Case II

A Labrador dog, 3 years, 26 Kg in its first conception was presented with history of dullness, blackish discharge, anorexic, rectal temperature 102.50F. On routine blood smear and CBC examination Hb% was 11%, TLC count was 12,000. The animal had already whelped 2 live and one dead pup 72 hours back and now it has become very dormant with occasional labour pain indicating development of secondary uterine inertia due to fetal malposition. Right lateral radiographic examination of the pelvis revealed presence of a fetus in Ventro-Sacral anterior presentation. The patient had been already treated with Oxytocin (15 units slow I/V), Ceftriaxone (500 mg) IM, Dextrose 5% and calcium Sandoz 5 ml IV but it did not help much. On per rectal examination the birth canal was found dry and sticky. Here, as this was an abnormal presentation with secondary uterine inertia surgery was attempted quickly to save the mother.



Figure 3: Incision at body of uterus.

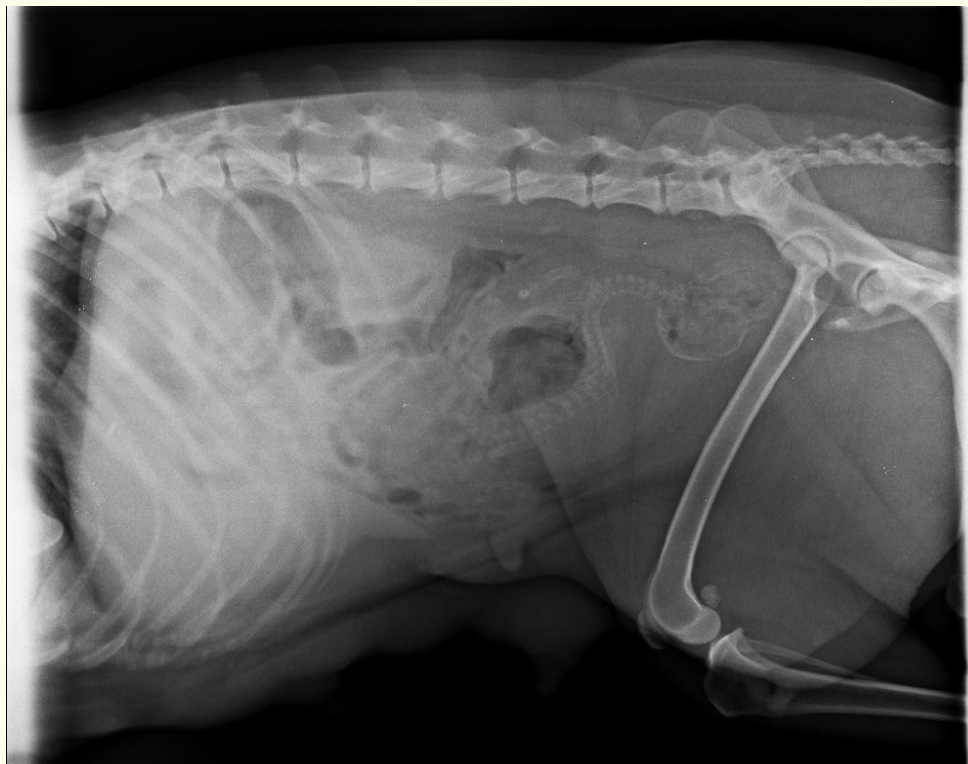


Figure 4: Ventro- Sacral anterior presentation of fetus.

Surgical treatment

In both the cases, mothers were stabilized with NS 250 ml, DNS 250 ml, Flunimeg 2 mg/kg IV and antibiotic Enrofloxacin (5 mg/kg) to reduce the load of endotoxin and prevent further infection. Left lateral laparotomy site was chosen and aseptically prepared. Atropine sulphate @ 0.04 mg/ kg was administered intramuscularly as pre-medicant and general anesthesia was achieved by intravenous administration of mixture of Ketamine@ 5 mg/kg and Diazepam 0.2 mg/kg respectively. The skin, subcutaneous tissue and abdominal muscles were incised. Blunt dissections were done to split the external and internal abdominal obliques along the direction of their fibers. In case I on exteriorization of the uterus, the fetus was found in the anterior cervical canal, so it was attempted to milk the dead fetus out through vagina without incising the uterus as the animal was already toxemic and opening of uterus may lead to further contamination of peritoneal cavity. On manual pressure the fetus was discharged. Then the uterus was irrigated initially with Normal saline to evacuate the lochial discharge and then 50 ml of Bismuth Iodoform paraffin paste (BIPP) was administered Intrauterine. Finally abdomen was lavaged and suctioned to remove any debris. In second case, on approaching through left laparotomy site fetus was found midway between uterus and cervical canal. So, uterus was incised in its body to exteriorize the dead fetus. Then, uterus was lavaged with 50 ml of Metrogyl and closed with Polydioxanone no-1 (PDS-1) in cushing manner. The laparotomy site in both cases were closed in two layers with Polydioxanone no-1 (PDS-1) and intradermal suture with buried knot was given to avoid licking of suture material and protective bandage was applied. Post operatively the animal was administered with DNS 500 ml (20 ml/kg), Metronidazole (Metris, Claris healthcare) @10 mg/kg 50 ml, Cefotaxime (Intacef, Intas Pharmaceuticals) @ 50 mg/ kg, Flunimeg @ 2 mg/ kg I/V, B - Complex (Conciple, Concept Pharmaceuticals) 2 ml I/M for five consecutive days with daily dressing and skin sutures were removed on 10th post-operative day.

Result and Discussion

In first case, as the dog had previously whelped two healthy puppies 36th and 30th hour before and due to some reason it was unable to expel the last one which indicates initially there was good uterine contraction and subsequently uterine inertia has been developed. This is clearly a case of secondary uterine inertia developed as a sequel to exhaustion following obstructive dystocia in second stage of labour. The fetus if alive could have been automatically passed on also in posterior presentation as this presentation is normal in bitches [5]. Death of fetus in birth canal with subsequent gas formation was the leading cause of toxemic condition of mother which again aggravates the health condition of mother creating environment conducive to secondary uterine inertia. This condition was corroborated by the fact that on gentle milking the fetus expels from birth canal and messaging of uterus clears most of the blackish discharge. The animal becomes healthy after 48 hours with standard fluid therapy, antibiotics and uterine ecbolics (oxytocin 10 IU each) indicating revival of uterine tonicity and relieve from toxemia. With good peri-operative and post-operative medication the animal was recovered uneventfully on 12th day postoperatively. In second case, also as the last whelping was 72 hours back and there after the health conditions of mother steadily deteriorate creating life threatening situation a surgical approach was appropriate choice. The cause of dystocia being primarily due to Vento- Sacral anterior presentation of fetus initially which was further complicated by secondary uterine inertia of uterus. peri-operative measures such as milking of uterus, messaging, intrauterine washing with Metrogyl was done to revive the uterine inertia and to fight back super infection. Left lateral flank incision with lateral recumbency was chosen so that it reduces pressure on the diaphragm, increases dam's ability to breathe and decreases the need to augment ventilation. Furthermore, the incision is away from the mammary glands, reducing irritation of the incision by nursing puppies. Due to the location of the incision, there is a decreased chance of herniation or evisceration if the sutures fail. The animal was stabilized postoperatively by continued fluid therapy, ecbolics, antibiotics for at least 7 days.

Conclusion

Among various maternal causes of dystocia, primary and secondary uterine inertia are the most common maternal cause and malpresentation being the most common fetal causes [6,7]. As in the present case, when the obstructed birth canal has caused the cessation of uterine contractions and the dormancy continues still after exteriorization of fetus, then the cause is secondary uterine inertia [8]. The conditions is stabilised by postoperative management of uterine ecbolics or uterine cleanser and antibiotic treatment.

Bibliography

1. Concannon PW, *et al.* "Canine gestation length: Variation related to time of mating and fertile life of sperm". *American Journal of Veterinary Research* 44.10 (1983): 1819-1827.
2. Darvelid AW and Linde-Forsberg C. "Dystocia in the bitch: A retrospective study of 182 cases". *Journal of Small Animal Practice* 35.8 (1994): 402-407.
3. Gary England FRCVS. "Disorders of Parturition in the Bitch". *Veterinary Nursing Journal* 11.3 (1996): 77-84.
4. Gaudet DA. "Retrospective study of 128 cases of canine dystocia". *Journal of the American Animal Hospital Association* 21 (1985): 813-818.
5. Gunn-Moore DA and Thrusfield MV. "Feline dystocia: prevalence and association with cranial conformation and breed". *Veterinary Record* 136.14 (1995): 350-353.
6. Jackson PGG. "Handbook of Veterinary Obstetrics". W.B. Saunders Co., Philadelphia, USA (1995).

7. Linde-Forsberg C. "Abnormalities in pregnancy, parturition, and the periparturient period". In: Ettinger SJ, *et al.* (Eds.) Textbook of Veterinary Internal Medicine. Philadelphia: W.B. Saunders (2005): 1655-1667.
8. Shull RM., *et al.* "Bilateral torsion of uterine horns in a non-gravid bitch". *Journal of the American Veterinary Medical Association* 172.5 (1978): 601-603.

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