

Ectopic Foetal Maceration with Uterine rupture in a Non-descriptive bitch - a Case report

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47/24

Abstract

A three years old, non-descriptive bitch was presented with the complaint of inappetence and abdominal distension for 20 days and whelped a month back. Ultrasound examination revealed mixed echogenicity fluid in the abdomen with hyperechoic foetal bone and radiography revealed radiopaque foetal bones in the ventral abdomen. Based on ultrasound examination and abdominal radiography, the case was confirmed as ectopic foetal maceration. An emergency laparotomy surgery was performed, ascitic fluid drained, macerated foetal parts removed and the ruptured uterus was removed by bilateral ovariectomy.

Keywords: Bitch, Ectopic foetal maceration, Uterine rupture, Ovariectomy

Introduction

In canine, ectopic foetal maceration associated with uterine rupture is rare and uncommon conditions that occur during the periparturient stage either due to trauma or infection, dead fetuses, uterine torsion and improper obstetrical technique and excessive

use of oxytocin (Noakes *et al.*, 2001). Depending on the gestational phase, if an embryonic or foetal loss occurs before bone formation, it results in resorption or complete abortion of the foetus however, if foetal death occurs after bone formation, partial or incomplete abortion, emphysema, mummification, maceration of the foetus are the sequelae (Alaçam, 2021). In rare cases, where complete abortion cannot occur due to uterine inertia It is further complicated by the entry of the pathogen into the uterus through the completely or partially dilated cervix. This results in putrefaction and autolysis of soft tissues leaving a mass of foetal bones in the uterus (Jones *et al.*, 1997; Long, 2009). Occasionally these macerated foetal bones become embedded in the uterine wall leading to severe damage to the endometrium (Noakes *et al.*, 2001) and might turn into the rupture of the uterus with penetration of the uterine wall leading to the expulsion of the foetus or bones into the abdominal cavity. The present report describes a case of ectopic foetal maceration with uterus rupture in a non-descriptive bitch.

Case History and Observation

A three years old, Non-descriptive bitch was presented to the Small Animal Obstetrics and Gynaecology unit of Madras Veterinary College Teaching Hospital with the complaint of inappetence and abdominal distension for 20 days. Further detailed history revealed that the animal whelped 4 live fetuses normally without any assistance and one dead foetus after 24 hours

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of medical induction a month back. Clinical examination revealed a body temperature of 101.6° F, pulse rate of 74/min, and enlargement of the abdomen with mild pain evinced on palpation. A vaginal examination showed a pale pink and moist vaginal mucus membrane with an absence of vaginal discharge. Ultrasound examination revealed mixed echogenicity fluid in the abdomen along with hyperechoic foetal bone shadow and free-floating intestinal loops. (Fig.1) Abdominal radiography revealed a distinct radiopaque mass of foetal skull located dorsally nearer to the large intestine area and other radiopaque foetal bones were identified in the ventral abdomen. (Fig.2). Hematological examination showed elevated leucocyte count (24.3 m/mm³) with neutrophilia (85 %), lower hemoglobin (8.3 g/dl), and PCV (23.4 %) level, and biochemical evaluation revealed a decreased albumin level of 0.9 g/dl.

Treatment and Discussion

Based on the above diagnostic procedures, it was confirmed as ectopic foetal maceration hence was decided to perform the surgical intervention. The animal was aseptically prepared for midventral approach, pre-anaesthetised with inj Diazepam (0.2mg/kg, IV), inj. Butorphenol (0.2mg/kg, IV), induced with inj. Propofol (4mg/kg, IV) and anesthesia maintained with Isoflurane (1.5 to 2%, inhalation). Following laparotomy, a large quantity of (nearly 9 litres) foul-smelling, yellowish to reddish brown fluid gushed out immediately after opening the peritoneal cavity. The uterus was pale, highly friable, and had a tear in the lesser curvature of the left uterine horn with foetal head bones noticed in the involuted uterine body. Macerated foetal bones were recovered from the abdomen after separating adhesions in the omentum (Fig.3 A-D). Bilateral ovariohysterectomy was performed and the laparotomy incision was closed as per the standard procedure. Postoperatively the

bitch was treated with inj. Ceftriaxone and Tazobactam (20mg/kg, SID), inj. Ringers lactate (10ml/kg) for 10 days, inj. Tramadol (4 mg /Kg, BID) and inj. Pantoprazole (1 mg/kg, S.I.D) for 5 days along with supplements. The animal showed uncomplicated recovery with no signs of illness during an observation period of one month.

Further, examination of the ascitic fluid revealed sheets of degenerative neutrophils, increased protein value (4.1g/dL) with a specific gravity of about 1.020, and culture report showed positive growth of *Staphylococcus aureus* organisms. Foetal maceration is commonly encountered in cattle but the incidence is rare in dogs may be because most foetal death generally results in the expulsion of the foetus (Feldman and Nelson, 1996) or delay in delivery of the dead foetus may cause uterine bacterial invasion from the open cervix leads to autolysis, maceration of foetal soft tissues and bones float in uterine lumen (Johnston *et al.*, 2001). Sometimes these macerated bones become embedded in the uterine wall leading to incomplete uterine rupture causing weakened areas in the uterine wall. Extrusion of the foetus or foetal bones into the abdominal cavity can occur in uterine rupture, resulting in intestinal compression, severe adhesions, septic peritonitis and haemorrhage (Gonzalez-Dominguez, 2010). Bitches which experience foetal maceration and retention often have a foul, fetid uterine discharge and develop a systemic illness with symptoms of toxemia or septicemia (England, 1998). However, in the present case, no vaginal discharge was noticed during clinical examinations due to long-standing conditions and the presence of ruptured and involuted uterine horns. A similar observation was also reported by Bodh *et al.* (2014) who stated that the rupture of the left uterine horn that occurred during the second phase of uterine involution characterized by resorption, tissue dissolution

and thickness of myometrial and endometrial wall.

Summary

The uterine rupture noticed in the present case might be due to inappropriate administration of oxytocin injections in the contracted uterus which already contains a dead foetus. Uterine rupture that is accompanied by ectopic foetal maceration occurs during the periparturient period or spontaneously is considered to be an obstetrical emergency and may result in high rates of maternal mortality or morbidity with loss of fertility as a consequence of hysterectomy.

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Fig.1: Ultrasound image showing mixed echogenicity fluid in the abdomen along with hyperechoic foetal bone shadow and free-floating intestinal loops.



Fig. 2: Abdominal radiography revealed foetal skull located dorsally nearer to the large intestine area and other radiopaque foetal bones in the ventral abdomen.

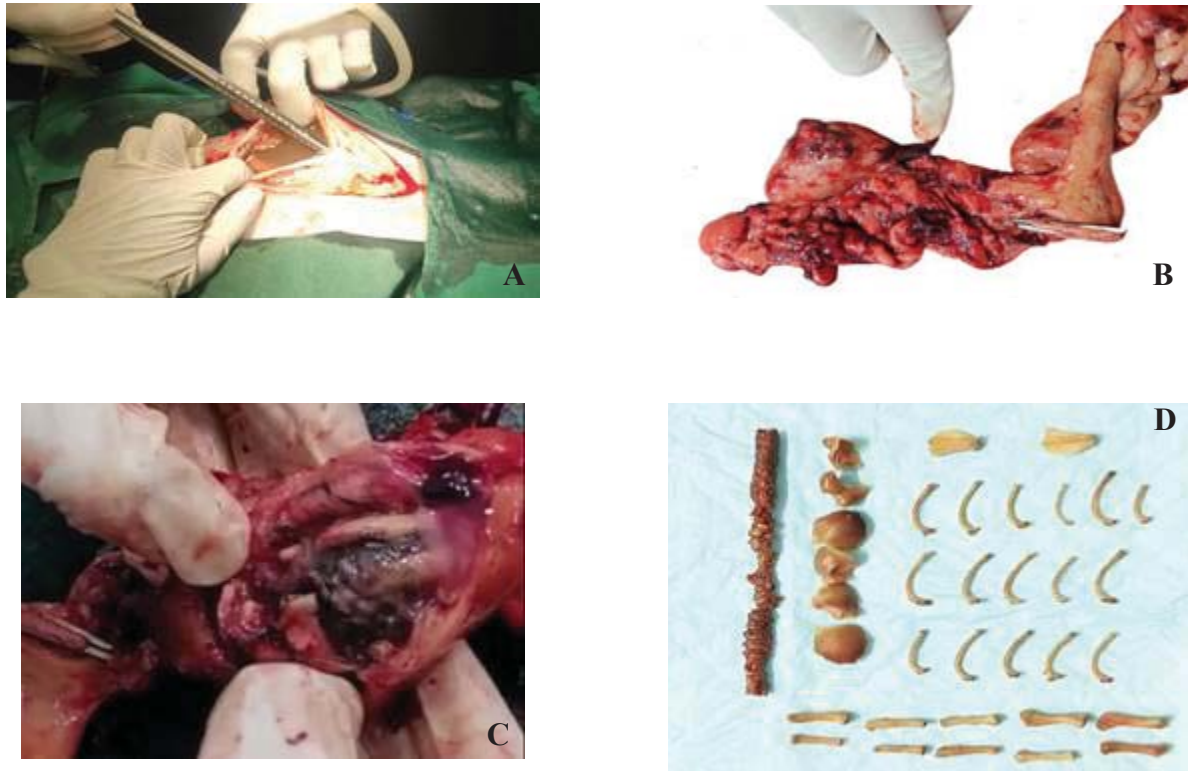


Fig.3: Surgical procedures (A) The median line incision showing ascitic fluid (B) Ruptured and involuted Uterus,(C)Foetal skull embedded in uterus,(D)Showcase of macerated foetal parts collected from the abdominal cavity.