

Surgical Management of Feline Dystocia Due to Uterine Inertia by Caesarean Section and Ovariohysterectomy: A Case Report

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Dystocia, defined as difficult or abnormal parturition, is a critical emergency in small animal practice that requires immediate veterinary intervention (Verstegen *et al.*, 2008). In cats, dystocia occurs in approximately 5-6% of all pregnancies and can be classified as either maternal or fetal in origin (Jackson, 2004). Maternal dystocia includes uterine inertia, pelvic abnormalities, and cervical dystocia, while fetal dystocia involves oversized fetuses, malpresentation, or fetal monsters (Linde-Forsberg, 2010). Uterine inertia is one of the most common causes of dystocia in cats and can be further categorized as primary or secondary (Traas, 2008). The normal gestation period in cats ranges from 58-70 days, with an average of 65 days (Johnston *et al.*, 2011). Recognition of dystocia is crucial for successful management. Clinical signs include prolonged stage I labour (>24 h), active straining without fetal delivery for more than 30 min, interval between kitten deliveries exceeding 4 h, and maternal distress (Linde-Forsberg, 2010). Early intervention improves both maternal and fetal survival rates (Münnich and Küchenmeister, 2009). This case report presents the successful management of a young queen cat with secondary uterine inertia following partial parturition, emphasizing the importance of timely surgical intervention in achieving favourable outcomes.

CASE HISTORY AND OBSERVATIONS

A 14-month-old domestic shorthair queen cat weighing 3.4 kg was presented to the Veterinary Clinical Complex of ANDUAT, Kumarganj (UP, India), with a 48-h history of incomplete parturition. The cat had undergone natural mating and completed the full gestational length of 65 days according to the owner's information. The owner reported that the cat had shown normal signs of parturition including anorexia, restlessness, and panting 1-2 h before delivery of the first kitten. The queen had successfully delivered two live kittens 48 h prior to presentation, but was unable to deliver any additional offspring since then. The cat appeared anorectic, depressed, and showed an extremely enlarged abdomen with no signs of straining or active labour.

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Physical examination revealed rectal temperature, heart rate and respiratory rate of 39.2 °C, 140 bpm and 32 breaths/min, respectively. The mucus membranes were pale with capillary refill time of < 2 sec, enlarged mammary glands with milk secretion, and little serosanguinous vaginal discharge. The abdominal palpation revealed multiple large, firm masses consistent with retained fetuses. The absence of straining behaviour and the prolonged interval since the last kitten delivery indicated secondary uterine inertia.

Lateral and ventrodorsally radiographs of the abdomen were obtained to confirm the presence of retained fetuses and assess fetal viability. The radiographs revealed three distinct fetal skeletons in the uterine horns, confirming the diagnosis of incomplete parturition.

Complete blood count and serum biochemistry were performed to assess the patient's overall health status and surgical risk. Results summarized in Table 1 were within normal limits, indicating that the patient was stable. Based

on the clinical findings and diagnostic results, emergency Caesarean section followed by ovariohysterectomy was indicated. The patient was deemed stable for surgery, and immediate intervention was planned to prevent further complications.

Table 1: Laboratory findings of cat with inertia/dystocia

Parameter	Value	Reference Range
Haemoglobin	11.2 g/dL	8.0-15.0 g/dL
Packed cell volume	34 %	24-45 %
Total leukocyte count	12,800/ μ L	5,500-19,500/ μ L
Neutrophils	78 %	35-75 %
Lymphocytes	18 %	20-55 %
Blood glucose	95 mg/dL	70-120 mg/dL
Blood urea nitrogen	28 mg/dL	15-30 mg/dL
Creatinine	1.1 mg/dL	0.8-1.8 mg/dL
Alanine aminotransferase	42 U/L	10-80 U/L
Total Protein	6.8 g/dL	5.4-7.8 g/dL

SURGICAL MANAGEMENT AND DISCUSSION

Pre-operative medications included Atropine sulphate (0.04 mg/kg, s/c), Ceftriaxone (25 mg/kg I/V) and Dexamethasone (0.5 mg/kg I/V). General anaesthesia was induced using Xylazine (1 mg/kg, I/M) as premedication, with Propofol (4 mg/kg I/V) and was maintained using Isoflurane (1.5-2.5%) with oxygen. The surgical approach involved a ventral midline laparotomy extending from the xiphoid process to the pubic symphysis (Fig. 1, 2). Three additional live kittens were successfully extracted from the uterine horns. All kittens required resuscitation procedures including immediate removal of foetal membranes, airway clearance using suction, gentle chest compression, oxygen supplementation, and warming under heat lamps.

Post-operative management focused on pain control using Meloxicam (0.1 mg/kg, s/c, once daily for 3 days) and infection prevention by Amoxicillin-clavulanic acid (12.5

mg/kg, oral, twice daily for 7 days). Elizabethan collar was applied to prevent self-trauma, and restricted activity for 10-14 days. The patient showed excellent recovery with no post-operative complications. All five kittens survived and thrived under maternal care with normal nursing behaviour and weight gain. Lactation was established within 12 h post-surgery. The incision healed without complications, and sutures were removed on day 10 post-surgery.

At 6-month follow-up, the patient was in excellent health with no complications related to the ovariohysterectomy was reported. All kittens had been successfully weaned and adopted into appropriate homes. This case demonstrates the successful management of feline dystocia caused by secondary uterine inertia through emergency Caesarean section and ovariohysterectomy. The decision to perform ovariohysterectomy rather than Caesarean section alone was based on several factors including the young age of the patient, owner preference for sterilization, and the risk of future reproductive complications (Toll *et al.*, 2003).

Secondary uterine inertia typically develops after prolonged labour when the uterine muscles become exhausted and fail to contract effectively (Jackson, 2004). In this case, the 48-h delay between the delivery of the first two kittens and presentation likely contributed to uterine muscle fatigue. The lack of straining behaviour and the enlarged, tense abdomen were consistent with this diagnosis (Feldman and Nelson, 2004). Early recognition of dystocia is crucial for successful outcomes. The normal interval between kitten deliveries should not exceed 4 h, and active straining without foetal delivery for more than 30 min warrants immediate intervention (Johnston *et al.*, 2001). Radiographic evaluation remains the gold standard for confirming the presence of retained foetuses and assessing foetal numbers (Root Kustritz, 2005).

The ventral midline surgical approach employed in this case followed established protocols for feline Caesarean section (Traas, 2008). The decision to perform



Fig. 1: Caesarean section of cat

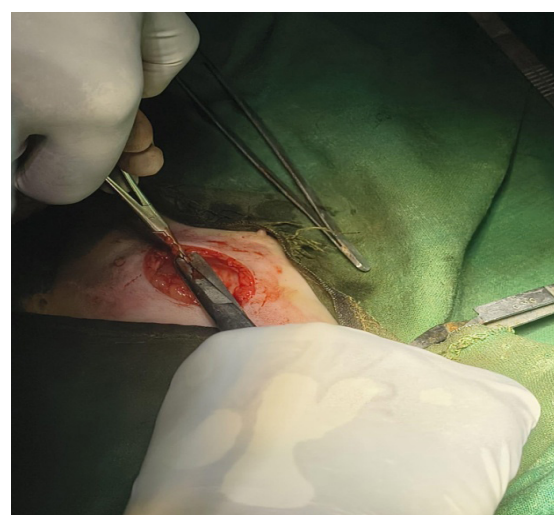


Fig. 2: Closer of surgical wound

concurrent ovariohysterectomy eliminated the risk of future reproductive complications and was appropriate given the clinical circumstances (Verstegen *et al.*, 2008). Anaesthetic management in pregnant cats requires careful consideration of both maternal and foetal well-being. The protocol used in this case minimized foetal depression while providing adequate anaesthesia for the surgical procedure (Luna *et al.*, 2004). Propofol induction followed by isoflurane maintenance is considered safe and effective for caesarean section in cats (Doebeli *et al.*, 2013).

Successful foetal resuscitation requires prompt intervention and appropriate techniques. The resuscitation protocol employed in this case included immediate removal of foetal membranes, airway clearance, gentle chest compression, and warming (Moon *et al.*, 2000). The 100% survival rate of surgically delivered kittens in this case demonstrates the effectiveness of proper resuscitation techniques.

In brief, this case emphasizes the critical importance of recognizing dystocia early and implementing appropriate surgical intervention to achieve optimal outcomes in feline reproductive emergencies.

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