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Umbilical cord entanglement in neonatal kittens: A case report

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Abstract

Umbilical cord entanglement in neonatal kittens is a rare but potentially fatal condition requiring prompt intervention. This report describes a case involving four 3-day-old kittens born to a primiparous domestic short-haired queen. The umbilical cords of three kittens were entwined with the necrosed metatarsus of a deceased littermate. Surgical removal of the entangled cords was performed using a BP blade, followed by antiseptic treatment with povidone-iodine. One kitten developed an umbilical hernia and died the following day, while the remaining two recovered and resumed nursing. This case highlights the importance of early detection and breeder education to reduce neonatal mortality.

Keywords: Umbilical cord entanglement, neonatal kittens, necrosis, umbilical hernia, feline parturition

Introduction

Umbilical cord entanglement in kittens is an uncommon condition that can lead to serious complications including ischemia, tissue necrosis, and death if not promptly addressed (Azari and Akhtardanesh, 2011) ^[1]. Normally, the queen severs the umbilical cord by licking each kitten post-parturition (England, 2019) ^[4]. However, in primiparous queens or during rapid deliveries, this behavior may be delayed or absent, increasing the risk of cord entwinement (Glavinic *et al.*, 2024). Long-haired breeds such as Persians are particularly susceptible due to fur entanglement (Azari and Akhtardanesh, 2011) ^[1]. Lack of awareness among breeders and pet owners further exacerbates the risk.

Case Report

A domestic short-haired queen gave birth to five kittens. Three days later, four kittens were presented with umbilical cord entanglement. One kitten had died, and its necrosed metatarsus was tightly entwined with the cords of the surviving kittens. The kittens were lethargic, vocalizing continuously, and appeared distressed.

Surgical intervention involved removing the necrotic tissue and carefully severing the cords using a BP blade, leaving approximately 2 cm of cord attached to each kitten. Povidone-iodine was applied to the cord stumps. One kitten exhibited an umbilical hernia, likely due to prolonged exposure to necrotic tissue and moisture. This kitten died the following day. The remaining two kittens recovered and began nursing normally.

Discussion

Neonatal mortality in kittens is most prevalent during the first week of life, with fading kitten syndrome being a major contributing factor (England and Heimendahl 2010) ^[2]. This syndrome encompasses a range of infectious and non-infectious causes including low birth weight, congenital anomalies, hypothermia, inadequate colostrum intake, maternal neglect, and neonatal infections (England and Heimendahl 2010) ^[2]. Umbilical cord entanglement, although rare, can significantly compromise neonatal viability (Azari and Akhtardanesh, 2011) ^[1]. In the present case, the entanglement was observed three days post-parturition, with one kitten found dead and another exhibiting umbilical hernia. The necrosed metatarsus of the deceased neonate

was tightly entwined with the umbilical cords of the surviving littermates, resulting in prolonged exposure to necrotic tissue and moisture.

Several risk factors predispose to umbilical cord entanglement. These include primiparous queens with limited maternal experience, excessively long umbilical cords, rapid or difficult deliveries, and dense maternal fur—particularly in long-haired breeds (England and Heimendahl 2010; Azari and Akhtardanesh, 2011) ^[2, 1]. Additionally, lack of early postnatal monitoring by breeders or pet owners may delay identification and intervention. The consequences of cord entanglement range from compromised circulation and ischemia to tissue necrosis and secondary infections (Glavinic *et al.*, 2024). In this case, surgical removal of the entangled cords was performed using a BP blade, and antiseptic management with povidone-iodine was initiated. Despite intervention, one kitten succumbed to complications associated with herniation.

Preventive measures are essential to reduce neonatal morbidity and mortality (England, 2019) ^[4]. These include close observation of neonates during the first 24 hours of life, early identification of abnormal behaviours such as excessive vocalization, lethargy, or feeding difficulty, and gentle removal of maternal fur entangled with cords. Prompt veterinary attention upon detection of entanglement is critical for improving survival outcomes.

Conclusion

This case underscores the importance of educating breeders and pet owners about the queening process and the risks of umbilical cord entanglement. Early detection and timely intervention are critical to reducing neonatal mortality and ensuring the health of newborn kittens.

Conflict of Interest

Not available

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Not available

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