*Annual Research & Review in Biology*

***Volume 39, Issue 4, Page 48-53, 2024; Article no.ARRB.115299***
***ISSN: 2347-565X, NLM ID: 101632869***
*(Past name: Annual Review & Research in Biology, Past ISSN: 2231-4776)*

# Therapeutic and Obstetrical Management of Twin Mummified Fetuses in Surti Doe: A Case Study

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***Authors' contributions***

*This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.*

***Article Information***

DOI: 10.9734/ARRB/2024/v39i42074

**Open Peer Review History:**
This journal follows the Advanced Open Peer Review policy. Identity of the Reviewers, Editor(s) and additional Reviewers, peer review comments, different versions of the manuscript, comments of the editors, etc are available here: https://www.sdiarticle5.com/review-history/115299

***Case Report***

***Received: 01/01/2024***
***Accepted: 03/04/2024***
***Published: 05/04/2024***

## ABSTRACT

Fetal mummification is uncommon in small ruminants like goat and sheep. The twin mummification of fetuses confirmed by history, a clinical sign, ultrasonographical and per-vaginal examination in five year old Surti doe of fourth parity. The case was successfully managed therapeutically using intravenous administration of 3.0 ml Dexamethasone®, 20IU- Oxytocin®, 500ml-Normal saline and 30ml-Calcium magnesium borogluconate, whereas 5ml-Valethamate bromide (Epidosin®) was given intramuscularly. The goat resumed to normal appetite and appearing active and alert within a week post treatment.

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*Keywords: Surti doe; uterine inertia; ultrasonography; twin mummified fetuses.*

## 1. INTRODUCTION

"Goat being one of the highly fertile animals among the domesticated animal provides meat, milk, fibers and leather" [1]. "Being a small size ruminant, management and rearing are usually done easily by poor farmers and household women. Fetal mummification in most animals is characterized by death of conceptus followed by resorption of fetal fluids, persistence of corpus luteum, involution of uterus to an extent that it contracts tightly over the fetus and resembles to a contracted hard mass" [1]. "It is also characterized by death of the fetus and fetus being retained in uterus owing to the failure of normal parturition or abortion mechanisms" [2]. "The incidence of foetal mummification is commonly observed in domestic animals occurring in the middle last third of gestation but it is uncommon in sheep and goat" [3]. "The death of fetus is encountered generally due to several factors of genetic abnormalities involving autosomes or sex chromosomes, torsion, compression of the umbilical cord, placental defects, overcrowding of fetuses and infections during the second or third trimester of gestation after the formation of the placenta and substantial ossification of fetal bony reminance" [3]. Braun et al*.* [4] reported that "energy and protein deficiencies, particularly on day 90 to 120 of gestation also cause fetal mummification". The present case report describes the successful delivered of twin dead mummified fetuses in a Surti doe by the successful therapeutic and obstetrical management.

## 2. CASE HISTORY AND CLINICAL OBSERVATION

A five year old Surti doe in its fourth parity was presented with the history of incomplete gestation period, straining, restlessness and tenesmus since past two days. The vital physiological parameters were recorded: temperature-103.8$^0$F, respiration rate- 19 breathe per minute and heart rate-80 beats per minute (slightly elevated-tachycardia). The goat was anorectic, dull, depressed, slightly dehydrated in standing position (Fig. 1).

Clinical examination revealed pinkish conjunctival and vaginal mucous membranes, engorged mammary gland (Fig. 2), tinged vulval lips with abnormal pinkish to reddish coloured discharge (Fig. 3). Abdominal ballottement revealed that hard freely movable mass suggesting the presence of fetus, which was further, confirmed by real time B mode transabdominal ultrasonography (Sonosite, Titan Ltd. Hitchin, United Kingdom). Two hyperechoic striations of thoracic cage without cardiac motility and lack of fetal fluid indicated the presence of mummified fetuses (Fig. 4). The pervaginal examination with proper lubrication revealed empty birth canal with only one finger dilated cervix. Based on the history and a clinical signs, ultrasonographical and pervaginal examination the case was diagnosed as a dystocia due to incomplete cervical dilatation with twin mummified fetuses.

**Fig. 1. Dull, depressed and Standing condition in Doe**

**Fig. 2. Mammary glands fully engorged with milk**

**Fig. 3. Reddish chocolate coloured discharged was observed**

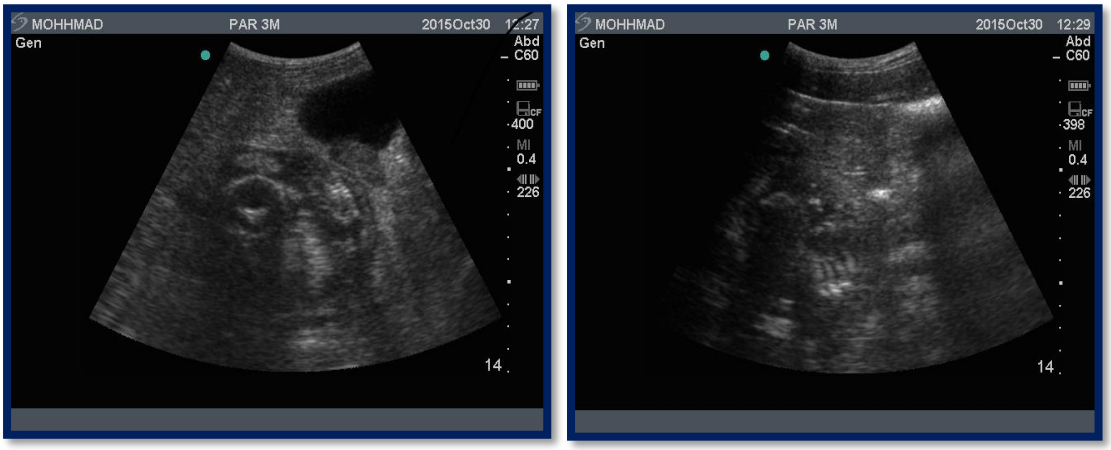


**Fig. 4. Hyper-echoic striations of thoracic cage without cardiac motility and lack of fetal fluid in mummified fetuses**

## 3. THERAPEUTIC AND OBSTETRICAL MANAGEMENT

Following confirmatory diagnosis of twin fetal mummification, the goat was medicated with intravenous administration of 3.0 ml Dexamethasone®, 20IU-Oxytocin®, 30 ml-calcium borogluconate and 500 ml normal saline, whereas 5 ml valethamate bromide (Epidosin®) was given intramuscularly. After 7-8 hours of

medicinal treatment goat started straining and placental membrane was hanging out through vaginal region was observed (Fig. 5). Per-vaginal examination revealed complete cervical dilation with sufficient available space for handling of fetus. The mummified fetuses (male in posterior presentation and female in anterior presentation) were delivered per-vaginally by grasping tiny limbs along with mild traction (Fig. 6).

Then the goat was medicated with intramuscularly administration of 3ml-Chlorpheniramine maleate@ (Antihistamines), 5 ml-Vitamin B-complex Injection, Melonex® (Meloxicam-Intas, India) @ 0.5 mg/kg. b.wt. IM OD and Quintas® (Enrofloxacin-Intas, India) @ 5 mg/kg. B.wt. IM OD; whereas 500 ml dextrose normal saline was given intravenously with placement of two Furea bolus (control the uterine infection- Allopathic remedies, India) in the uterus. The Liquid Exapar® (Indigenous herbal uterine cleanser and restorative-Natural Remedies, India) @ 20 ml twice PO and liquid Gluca-boost (To maintain the energy/glucose-Natural Remedies, India) @ 30 ml twice PO. Intramuscularly antibiotic, analgesic and antihistamine treatment was continued for 5 days.

**Fig. 5. Feto-placental membrane was hanging out**

**Fig. 6. Manually delivered dead mummified fetuses with mild extraction**

## 4. RESULTS AND DISCUSSION

The goat was found active and alert resuming normal appetite within a week post treatment. Tutt [5] reported that "the foetal mummification is rare in goat but appears to be more common in twin pregnancy which was in agreement with present case observation". Characteristics of the delivered mummified fetuses in form of the weight of the mummified fetus along with placenta; mummified fetus alone were (205.2; 129.0 grams): (100.1; 65.0 grams); the number of rows of fetal cotyledons on placenta was 9:4; total length of placenta were (125.0 cm: 65.0 cm); also the measurements of fetuses such as crown-rump length (CRL); heart girth (HG); head crest; neck length; fore limb length; hind limb length and Umbilical cord length were recorded to (18.6; 13.4; 3.4; 4.5; 14.4; 15.6 and 17.5 cm): (10.27; 7.38; 1.88; 2.38; 8.06; 8.61 and 9.0 cm) of first large male and second small female mummified fetuses (Fig. 7) respectively. Amer [6], Chauhan et al. [7] and Bisla et al. [8] have also reported the fetal death at almost similar stage of gestation as observed in the present case. Markandey et al. [9] and Nakhashi et al., [10] have also reported cases of mummification in goats. Ogbu et al. (2011) reported a case of dystocia due to mummification where both the foetuses were dead corroborated with present report.

In does and ewes, fetal mummification is not common, and affects both single and twin fetuses. Mummified fetus with normal live kid was delivered in doe [11] and ewe [12].

"In present case study, both male and female fetuses were observed without eye ball and ear probably due to resorbtion of skin, subcutaneous layers and were also layered with chocolate gummy tenacious exudates which resembled typical body configuration of hematinic type of mummification" as reported by Roberts [3]. "Although spontaneous abortion of a mummified foetus can occur, expulsion of the foetus usually requires veterinarian intervention. The main reason for non expulsion of mummified fetus in the present case was incomplete cervical dilatation" [11]. Gouru et al. [13] and Singh et al. [14] suggested "the beneficial effect of Epidosin® (valethamate bromide) in incomplete cervical dilatation in goats". So, the doe was treated with valethamate bromide, dexamethasone, oxytocin, calcium borogluconate and other supportive therapy.

**Fig. 7. Hematinic mummified large male and small female fetuses layered with chocolate gummy tenacious exudates with placenta**

## 5. CONCLUSION

Fetal mummification occurs in animals when a series of factors are met in a certain time and order. It is more frequently observed in polytocous animals as compared to monotocous species. In goats, infectious agent have been the prominent cause. Most of the diseases causing mummification affect fetal membranes and fertility.

## COMPETING INTERESTS

Authors have declared that no competing interests exist.

## REFERENCES


1. Noakes DE, Parkinson TJ, England GCW. Arthurs' Veterinary reproduction, obstetrics, 9th edition, Saunders, Edinburg, London; 2009.
2. Arthur GH, Noakes DE, Pearson H. Veterinary Reproduction, Obstetrics. 6th edn. London, Bailliere Tindall. 114. Aziz, Taha; 1996.
3. Roberts SJ. Veterinary obstetrics, genital diseases, 2ndedn. CBS Publishers, Distributors, New Delhi. 1971;170-174.
4. Braun WF Jr. Noninfectious prenatal pregnancy loss in the doe. In: Youngquist RS, Threlfall WR, editors. Current Therapy in Large Animal Theriogenology. 2nd ed. Philadelphia: WB Saunders. 2007;555–561.
5. Tutt CLC. Post-partum mummification of a co-twin fetus in a Cameroon Dwarf doe. Journal of Veterinary Record. 1991;40: 229-231.
6. Amer HA. Determination of first pregnancy, measurtements in Egyptian Baladi goats (*Capra hircus*). Veterinaria Italiana. 2008; 44(2):429-437.
7. Chauhan PM, Kapadiya PS, Sutaria TV, Nakhashi HC, Sharma VK. Retention of Mummified Fetus due to Uterine Inertia after Kidding in Doe. Veterinary Clinical Science. 2014;2(4):64-66
8. Bisla A, Kumar B, Kurhe R, Behera H, Ngou AA, Shah I, Khan JA. Dystocia due to fetal mummification in a non-descript goat. Journal of Experimental Biology, Agricultural Sciences. 2018;6(3):613-616.
9. Markandey NM, Pargonkar DR, Baksi SA, Doijode SV. Fetal mummification in goat-a case report. Indian Journal of Animal Reproduction. 1991;12:107-108.
10. Nakhashi HC, Chaudhary SR, Faruquie S. Premature kidding along with a retained mummified fetus in a twin pregnancy- A Case Report. Indian Journal of Field Veterinarian. 2005;2:62-63.
11. Anil M, Rajashri Raju M, Solmon G, Raju KG, Reddy CK. Fetal mummification in non-descript doe a case report. International Journal of Science, Environment & Technology. 2017;6:2335-8.
12. Alagar S, Prakash S, Selvaraj M, Ravikumar K, Manokaran S. Papyraceous mummification leading to dystocia of a normal fetus in a Mecheri ewe. Indian J. Anim. Reprod. 2017;38:62-63.
13. Gouru R, Pottabathula M, Reddy NVK. Dystocia due to fetal mummification in a non-descriptdoe. The Pharma Innovation Journal. 2017;6(8):163-164.
14. Singh LK, Pipelu W, Mishra GK, Patra MK. Fetal mummification in a non-descript doe, its successful management. International Journal of Science, Environment, Technology. 2018;7(1):254 -257.




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