



Clinical Article

Occurrence of atresia ani in adult sheep and goat in Kuwait city

Khalifah Ali^{1*} Haithem Ali Mohamed Ahmed Farghali² and Ashraf Ali Eldesoky Shamaa²¹Public authority for agriculture affairs and fish resources - Kuwait City, Kuwait²Department of surgery, anesthesiology and radiology, Faculty of veterinary medicine, Cairo University, Egypt

ARTICLE INFO

Article history

Accepted 27 February 2020

Online release 24 March 2020

Keyword

Atresia ani
Sheep and Goat
Kuwait

*Corresponding Author

Khalifah Ali
✉ vet-1@live.com

ABSTRACT

This paper reports cases of atresia ani in sheep and goat of Kuwait city, Kuwait. Several cases of atresia ani with recto-vaginal fistula were observed in day old sheep and adult sheep and goats were found. The animals were suffering from difficulty in defecation, anorexia, and blot in addition faces were coming from vagina. Based on the prevailing clinical signs, the condition was however diagnosed as congenital atresia ani associated with recto-vaginal fistula. Reconstructive surgery by incising the bulged, palpable region was done. The rectal pouch was bluntly dissected and retracted The blind stump of the rectum was incised and sutured all around with the skin by using interrupted mattress silk sutures. The perineal tissue was separated by blunt dissection then rectal and vaginal walls were separated. The perineal tissue and skin were closed. Post operative care and follow-up confirmed the recovery of the animals. The recovered animals got back their normal life and be able economically profitable for the keepers.

INTRODUCTION

Atresia ani is a failure of development of the anal opening (Bademkiran et al., 2009). It is a congenital abnormality and is characterized by absence of anal opening and may be associated with recto-vaginal fistula, recto-cystic fistula, vagino urethral agenesis, taillessness, hypospadias (Singh et al., 1993) and diphallus (Loynachan et al., 2006).

These anomalies are usually noticed at birth whereas in some cases, usually diagnosed at a later age. Early diagnosis of non-lethal anomalies aids in efficient management of the condition. There are four major types of atresia ani which consists of type I-IV. In type I, a mucosal barrier obstructs the lumen of the intestine. Animals with type II have an intestine with two segments without any communication usually with a fibrous cord joining them together. In type III, two segments of intestine separated completely which may be coiled at the distant end in some animals. Type

IV atresia involves multiple site of atresia (Bademkiran et al., 2009; Rahal et al., 2007). Congenital rectovaginal fistula usually associated with type II atresia ani in which the rectum ends as a blind pouch immediately cranial to the imperforated anus (Rahal et al., 2007).

Sheep and goat are known to serve as source of animal protein, skin, manure, income and some cultural values (Tefera et al., 2009). The economic importance of sheep and goat is primarily associated with their small size, low investment in farming, low risk of loss and their high reproductive efficiency (Omoike, 2006). In Kuwait, sheep and goats constitute the majority of livestock, as they are well adapted to the prevailing climatic conditions characterized by a hot/dry season and a wet/cool season. The 2016 census recorded 731,845 sheep and 182,039 goats in the country (Central Statistical Bureau, Kuwait 2016).

Factors affecting livestock production in sub Saharan countries includes diseases, poor

management and lack of proper breeding policies (Adebowale, 2012). These have been observed as major constraints to livestock production in Nigeria (Ogbaje et al., 2012). This could be linked to changes in the host immunity or increase in the preponderance of either the pathogen or vector or both (Nelson et al., 2002). The present study was undertaken to record the cases of atresia ani in sheep and goat in Kuwait city and their treatment with follow-up.

MATERIAL AND METHODS

Examination of cases

The study was conducted from October 2017 to October 2019 in different farms belonging to Public authority for agriculture affairs and fish resources - Kuwait City, Kuwait. In this study six cases (Table 1) of Atresia ani of which 2 cases of new borne sheep (Figure 1-2) and 4 cases of adults sheep (1) and goats (3) (Figure 3-6). The animals were suffering from difficulty in defecation, anorexia, and blot in addition faces were coming from vagina. An examination of perineal region, revealed absence of anal opening, tenesmus,

bulging at the anal region and communication between rectal floor and vaginal roof, through which the faeces was voiding out. Based on the prevailing clinical signs, the condition was however diagnosed as congenital atresia ani associated with recto-vaginal fistula.

Surgical treatment

The treatment was performed by anal reconstruction. Animals were anesthetized by Xylazine at recommended dose. A circular skin incision was made at the site corresponding to the anus and flap of skin was removed. The rectal pouch was bluntly dissected and retracted. The blind stump of the rectum was incised and sutured all around with the skin by using interrupted mattress silk sutures. A linear skin incision of 7–8 cm extended horizontally, midway between the anus and vagina was performed. The perineal tissue was separated by blunt dissection then rectal and vaginal walls were separated. The rectal and vaginal wall defects were sutured separately with chromic catgut no.1/0 by Cushing suture pattern. The perineal tissue and skin were closed in standard manner (Bademkiran et al., 2009).

Table 1

Recorded cases of sheep and goats affected an atresia Ani in Kuwait.

Case number	Species	Breed	Sex	Age	Color
Case (1)	Sheep	Naomi	F	1 days	White
Case (2)	Sheep	Naomi	F	2 days	White and brown
Case (3)	Sheep	Naomi	F	2 Months	White and brown
Case (4)	Goat	Ardhi	F	3 Months	Black
Case (5)	Goat	Ardhi	F	4 Months	Black
Case (6)	Goat	Ardhi	F	6 Months	Black

RESULT AND DISCUSSION

The affected sheep and goats were subjected to surgically interference. The anal and vaginal openings were successfully created. When the surgery was performed the symptoms disappeared completely and the shape of the openings back to normal. Post operative care and follow-up confirmed the recovery of the animals.

Recto-vaginal fistula or anus vaginalis is an inherited lethal abnormality in which there is an abnormal passage between rectum and vagina;

also, faeces are passed through the vagina as a result of the imperforate anus (Oehme and Prier, 1974). tresia ani associated with recto-vaginal fistula has been reported in many species. These include calves (Shakoor et al., 2012; Mahesh et al., 2014), sheep (Martin & Aitken, 1991) dogs (Rahal et al., 2007) and goat (Johnson et al., 1980). Xylazine has been widely used in veterinary medicine and preclinical research studies to induce sedation or as an adjunct to injectable and inhalational anesthetics (Lemke, 2004).



Figure 1: A. Day old ewes with absent anus and the vaginal opening is very small B) ;little yellowish stool appears in the vagina, C. ana; and vaginal openings are seen after successful operation.



Figure 2: Two days old ewe suffer from deformity and laceration in anus with difficulty in defecation, B. feces appears both in anus and vagina C. opening of anus after surgical intervention



Figure 3: A. Two months age of ewe showing absent of anus, B Inserting the finger from the vagina into the location of the closed anus, C opening of anus after surgical operation



Figure 4: A. Absent of anus in 3 months old goat, B. The appearance of feces in the vaginal opening, C. opening the anus after surgery.

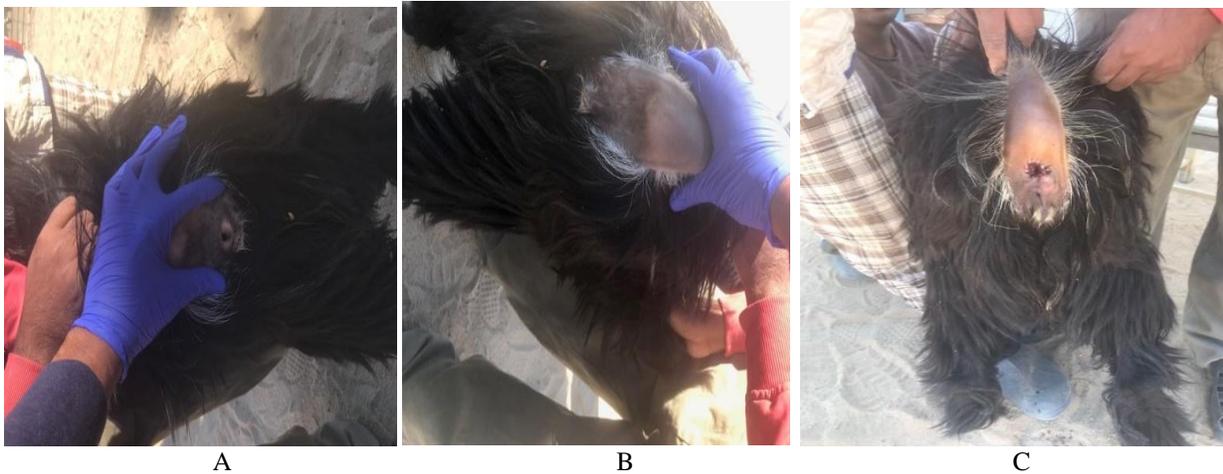


Figure 5: Four months old Goat showing absent of anus, B. absence of vaginal opening, C opening of anus and vagina after operation.



Figure 6: A. Goat of six months old with absent of anus, B. The appearance of feces in vaginal opening, C. opening the anus following surgical operation.

Such cases of atresia ani with normal rectal development are surgically treated with 100% success rates provided the anal sphincter is not damaged. It is suggested that the young ones must be examined thoroughly after birth, particularly for atresia ani and treated instantly to save their lives.

CONCLUSION

The cases of atresia ani found in Kuwait needed to surgical intervention (anal and vaginal reconstruction). The recovered animals got back their normal life and be able economically profitable for the keepers.

CONFLICT OF INTEREST

The authors declare no conflict of interests.

AUTHORS CONTRIBUTIONS

Khalifah Ali contributed to the collection of the data, clinical examination, and surgery. Haithem Ali Mohamed Ahmed Farghali contributed to the conception and design of the work and to writing of the manuscript. Ashraf Ali Eldesoky Shamaa contributed to the conception and design of the work and to revision of the manuscript.

REFERENCES

- Adebowale OAL (2012). Dynamics of ruminant livestock management in the context of the Nigerian Agricultural System. In: *Livestock Production* (Eds. Khalid Javed). Intech. USA. ISBN978-953-51-0814-6. pp 61.
- Bademkiran S, Icen H, Kurt D (2009). Congenital recto vaginal fistula with atresia ani in a heifer: a case report. *YYU Veteriner Fakultesi Dergisi* 20(1):61-64.
- Central Statistical Bureau, Kuwait (2016) *Annual Agricultural Statistics, 2015–2016* (https://www.csb.gov.kw/Socan_Statistic.aspx?ID=42).
- Johnson EH, Nyack B, Marsh A (1980). Surgical repair of atresia ani & rectovaginal fistula in a goat. *Veterinary medicine, small animal clinician*, 75(12):1833-4.
- Lemke KA (2004). Perioperative use of selective alpha-2 agonists and antagonists in small animals. *Canadian Veterinary Journal*, 45:475–480.
- Loynachan AT, Jackson CB, Harrison LR (2006). Complete diphallia, imperforate ani (type 2 atresia ani), and an accessory scrotum in a 5- day-old calf. *Journal of veterinary diagnostic investigation*, 18(4):408-412.
- Mahesh R, kamalakar G, Devi Prasad V (2014). Surgical management of atresia ani in a calf: A case report. *International Journal of Veterinary Science and Medicine*, 2(2):51-53.
- Martin WB and Aitken ID (1991). In: *Diseases of Sheep*, 2nd Ed. Blackwell Scientific Publications, pp. 383.
- Nelson JR, Demas EG, Klein LS, Kriegsfeld JL (2002). *Seasonal patterns of stress, immune function and disease*. 1st ed. Cambridge University Press, Cambridge, UK.
- Oehme FW, Prier JE (1974). *Text book of large animal surgery: Williams and Wilkins*, Baltimore London pp. 425-509.
- Ogbaje CI, Ajogi I, Ofukwu R (2012). Disease and conditions of food animals mostly encountered in Zaria Abattoir in Northern Nigeria. *Journal of Veterinary Advances*, 2(7): 402-406.
- Omoike A (2006). Prevalence of disease among sheep and goats in Edo State, Nigeria. *Journal of Agriculture and Social Research*, 6(2): 23-31.
- Rahal SC, Vicente CS, Mortari AC, Mamprim MJ, Caporalli EH (2007). Rectovaginal fistula with anal atresia in 5 dogs. *The Canadian Veterinary Journal* 48(8):827.
- Shakoor A, Muhammad SA, Younus M, Kashif M (2012). Surgical repair of congenital recto-vaginal fistula with atresia ani in a cow calf. *Pakistan Veterinary Journal* 32(2):298-300.
- Singh J, Singh AP, Patil DB (1993). *From Digestive system: In Ruminant Surgery 1st edition*, Edited by Tyagi RPS and Singh J, CBS Publishers, New Delhi P 222.