



ISSN (E): 2277-7695
ISSN (P): 2349-8242
NAAS Rating: 5.23
TPI 2023; SP-12(7): 1002-1004
© 2023 TPI

www.thepharmajournal.com

Received: 21-04-2023

Accepted: 25-05-2023

S Dariya

M.V.Sc. Department of Veterinary Pathology, Post Graduate Institute of Veterinary Pathology Education and Research, Jaipur, Rajasthan, India

R Dadhich

HOD, Department of Veterinary Pathology, Post Graduate Institute of Veterinary Pathology Education and Research, Rajasthan, India

K Jaidiya

Ph.D. Scholar, Department of Veterinary Medicine, RAJUVAS, Bikaner, Rajasthan, India

S Meena

Assistant Professor, Department of Veterinary Pathology, Post Graduate Institute of Veterinary Pathology Education and Research, Rajasthan, India

V Galav

Assistant Professor, Department of Veterinary Pathology, Post Graduate Institute of Veterinary Pathology Education and Research, Rajasthan, India

M Agrawal

Assistant Professor, Department of Veterinary Pathology, Post Graduate Institute of Veterinary Pathology Education and Research, Rajasthan, India

Corresponding Author:

S Dariya

M.V.Sc. Department of Veterinary Pathology, Post Graduate Institute of Veterinary Pathology Education and Research, Jaipur, Rajasthan, India

Prevalence and pathomorphology of circulatory disturbances in goat lung

S Dariya, R Dadhich, K Jaidiya, S Meena, V Galav and M Agrawal

Abstract

A total of 630 slaughtered or spontaneously dead goats were screened. Circulatory disturbances were observed in 46 (12.67%) cases out of 363 lungs examined that included pulmonary haemorrhage, congestion and edema. Pulmonary congestion and edema 37 (10.19%) and pulmonary haemorrhage was encountered in 9(2.47%) cases. Grossly, areas of congestion and haemorrhages were observed throughout the lung. Edematous lungs were pale and heavy. Microscopically, areas of haemorrhage in the alveolar spaces were noticed. Eosinophilic homogenous fluid was noticed in the alveoli of edematous lung.

Keywords: Circulatory disturbances, pulmonary congestion, haemorrhage and edema

Introduction

Globally, India occupies second position in goat population and first position in terms of goat milk production. Total goat population in the country is 148.88 million and in Rajasthan 20.84 million. About 27.7% of the total livestock is contributed by goat (Livestock Census 2019)^[12]. Respiratory infections are most commonly found in goat flocks, affecting groups or individual. The lower respiratory tract consists of trachea, bronchi and lungs. Pneumonia in goats is associated with a wide range of infectious agents. Adverse weather conditions, stress, pregnancy, lactation, immunosuppression, and old age of animals favours the infection by normal inhabitants of the respiratory tract (Dadhich, 1996; Kumar *et al.*, 2014)^[9, 11].

Material and Method

The study was conducted from March, 2019 to December, 2019 at slaughter houses and meat outlets of Jaipur. The tissue specimens were also collected from the carcasses of goats submitted to the department of Veterinary Pathology, College of post graduate institute of veterinary education and research (PGIVER), Jaipur for post mortem examination. Sampling was done from the affected lung and 0.5 cm thick lung tissues were collected in 10% NBF. For histopathological processing, the tissue samples were given overnight washing in tap water and dehydrated in increasing grades of ethyl alcohol, cleared in xylene and embedded in paraffin. From paraffin embedded tissue blocks, 4-5 µm thick tissue sections were cut on clean, grease free glass slides and haematoxylin and eosin staining was done. Then sections were examined under the light microscope for histopathological evaluation of tissue.

Result and Discussion

Circulatory disturbances observed were pulmonary haemorrhage, congestion and edema in 46 (12.67%) cases out of 363 lungs examined.

Pulmonary Congestion and oedema were recorded 37 (10.19%) of the total affected of sample. Grossly the lungs were enlarged, edematous and dark brownish in appearance. Proteinaceous fluid were oozed out on the cut surface of lung and cut surface revealed smooth texture and reddish frothy fluid. Microscopically alveolar capillaries were well known dilated, tortuous and engorged with blood. RBC were found inside the some large blood vessels. Alveolar lumen were filled with variable number of RBCs. The alveoli and bronchioles contained pink homogenous serous fluid.

Edematous fluid in alveoli also found macrophages. Alveoli septa also tremendous congested. The blood vessels in the interlobular septa, interalveolar septa, around bronchi and bronchioles were greatly dilated and engorged with blood. In some areas alveolar septa appeared thickened due to oedema which contained a few mononuclear leukocytes and erythrocytes.



Fig 1: Gross photograph of lung showing various degree of congestion

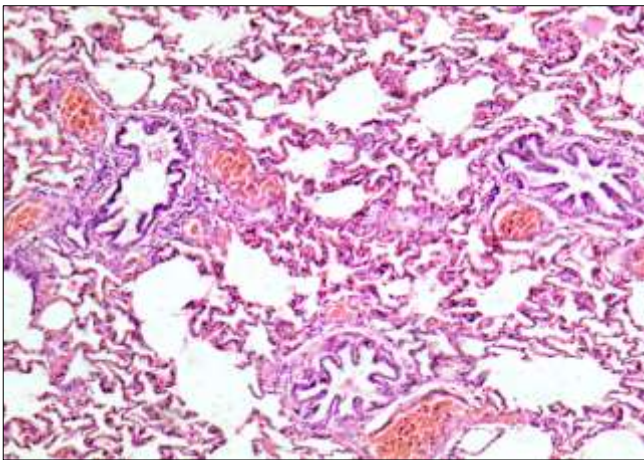


Fig 2: Microphotograph of lung showing dilatation and engorgement of blood vessels with full of RBC's, H & E 100X

Pulmonary Haemorrhage was observed in 9 (2.47%) samples. Grossly- Hemorrhages are usually multifocal or patchy. Lung was appears as red, brown, or gray discoloration of the lung. Microscopically Hemosiderin-laden macrophages were found in alveolar-spaces and in the interstitium, alveolar septal fibrosis, and mild bronchiolitis and bronchiolar fibrosis. Increase prominence of bronchial arteries and thickening of the tunica media of interstitial arterioles were also observed.



Fig 3: Gross photograph of lung showing profuse haemorrhages in lung. Cut surfaces showing bloody frothy exudates oozes out

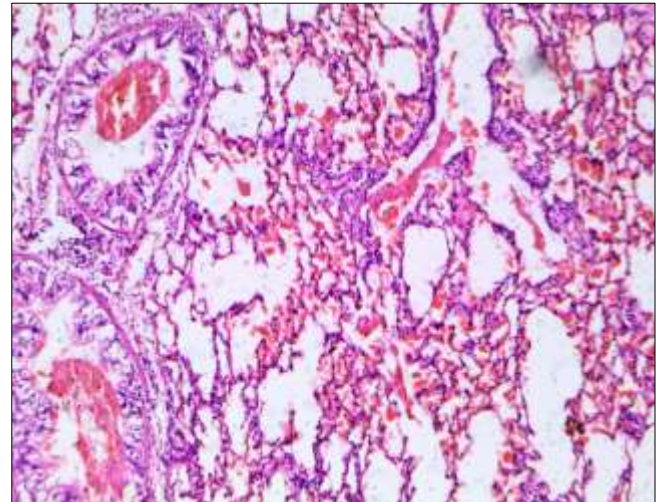


Fig 4: Microphotograph of lung showing extravasated RBC's in alveolies & bronchioles, H&E100X

Conclusion

Circulatory disturbances were observed in 46 (12.67%) cases out of 363 lungs examined that included pulmonary haemorrhage, congestion and edema. Pulmonary congestion and edema 37 (10.19%) and pulmonary haemorrhage was encountered in 9(2.47%) cases.

References

1. Belkhiri M, Benhathat Y, Tlidjane M. Classification and frequency of ovine pulmonary lesions in tiaret's slaughterhouse. *Research Journal of Pharmaceutical, Biological and Chemical Sciences*. 2014;5(2):1181-1188.
2. Dar LM, Darzi MM, Mir MS, Kamil SA, Rashid A, Abdullah S. Prevalence of lung affections in sheep in northern temperate regions of India: A postmortem study. *Small Ruminant Research*. 2013;110:57-61.
3. Kumar RP, Kumar R, Somawane GG, Paliwal OP, Sharma AK. Studies on pathology of ovine pneumonias and experimental *Pasteurella multocida* infection in rabbits. *Indian Journal of Veterinary Pathology*. 2005;29(29):153.
4. McGavin MD, Zachary JF. *Pathologic Basis of Veterinary Disease*. 4th Edn. Mosby Elsevier Westline Industrial Drive, St. Louis, Missouri. 2007, 492-531.
5. Priyadarshi BH, Joshi DV, Patel BJ, Raval SH, Patel HA. Pathomorphology of spontaneously occurring pulmonary lesions insheep (*Ovis aries*). *Ruminant Science*. 2013;2(1):31-35.
6. Regassa A, Moje N, Megersa B, Beyene D, Sheferaw D, Debela E, *et al*. Major causes of organs and carcass condemnation in small ruminants slaughtered at Luna Export Abattoir, Oromia Regional state, Ethiopia. *Preventive Veterinary Medicine*. 2013;110:139-148.
7. Sriraman PK, Rama Rao P. A survey of disease conditions in adult sheep of Andhra Pradesh. *Indian Veterinary Journal*. 1980;56:971-978.
8. Thomson GD. *Special Veterinary Pathology*. B.C. Decker, Inc., Ontario, Canada. 1st Edn, 1988, 89-91.
9. Dadhich H. *Incidence and Classification of lung lesions in goats*, M.V.Sc. Thesis, R.A.U., Bikaner, 1993.
10. Ferdausi T, Haider MG, Alam KJ, Baki MA, Hossain MM. Caprine lung diseases and causal bacteria. *Bangladesh Veterinarian*. 2008;25(1):9-16.

11. Kumar MA, Kumar R, Varshney KC, Nair MG, Lakkawar AW, Sridhar BG, *et al.* Pathomorphological studies of lung lesions in sheep. *Indian Journal of Veterinary Pathology.* 2014;38(2):75-81.
12. Livestock Census. 20th Livestock Census-2019, All India Report, Ministry of Fisheries, Animal Husbandry and Dairying, Department of Animal Husbandry and Dairying, Government of India, New Delhi; c2019.