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Histopathological and cytopathological findings in a rare case of Jaagsiekte affected goat

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Abstract
A goat was received for postmortem examination and based on the postmortem findings, histopathological and cytopathological examinations, it was diagnosed as a rare case of Jaagsieke in the goat.

Keywords: Jaagsiekte, rare, goat, postmortem changes, histopathology, cytopathology

1. Introduction
Jaagsiekte, also known as 'pulmonary adenamatosis' or 'ovine pulmonary adenocarcinoma' is a virus related transmissible lung tumor caused by Jaagsiekte Sheep Retro Virus (JSRV) [1]. The African name "Jaagsieke" was derived from "driving" (Jaag) and "Sickness" (Siekte) indicating the tendency of the affected sheep to lag behind the flock during herding [2]. Jaagsiekte is a contagious lung tumor occurs mainly in sheep but goats are rarely affected [3]. Clinical signs occur only in the animals that have developed tumors. The signs may be progressive emaciation, weight loss and chronic respiratory distress particularly after exercise [4]. Histopathologically, characteristic hypertrophy and hyperplasia of the alveolar epithelium can be seen [5]. The present case study describes a rare case of Jaagsiekte in a goat by gross lesions, microscopic lesions, histopathological and cytopathological findings.

2. Case history and Observation
A female goat weighing about 25kg was presented for postmortem examination. According the farmer, the clinical signs history of the goat was poor appetite, respiratory distress and bloat. Upon the external postmortem examination, the condition of the goat was emaciated (Fig.1) with pale conjunctival mucous membrane (Fig.2) and mucous nasal discharges (Fig.3).

Fig 1: Emaciated condition of the body

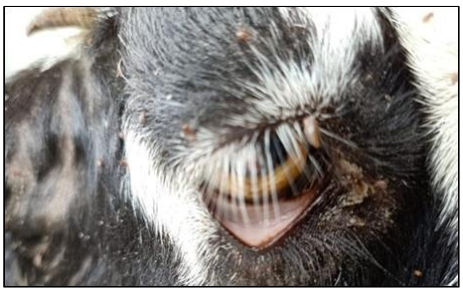

Fig 2: Pale conjunctival mucous membrane

Fig 3: Mucosal nasal discharges

3. Materials and Methods

Postmortem examination of the goat was conducted and various gross lesions were recorded in different organs. For histopathological examination, small tissue pieces were collected in 10% Formalin and processed by routine paraffin embedding technique. Tissue sections of 4-5 microns were prepared by using microtome and stained by standard Hematoxylin and Eosin method to study the microscopic lesions [6]. While doing postmortem examination, impression smears were taken from lungs for cytopathological examination. These impression smears were air dried and Giemsa staining was done, observed under microscope for cytopathology [7].

4. Results and Discussion

4.1 Gross lesions and microscopic lesions

Upon the internal postmortem examination, petechial hemorrhages on the epicardium (Fig. 4) were observed. Lungs revealed multifocal neoplastic nodules (Fig. 5), characteristic meaty appearance (Fig. 6), along with pulmonary edema with frothy exudate (Fig. 7). Liver showed multiple necrotic areas (Fig. 8) and kidneys were congested (Fig. 9). By histopathological examination, characteristic papillary or finger like projections were noticed in to the alveoli due to hypertrophy and hyperplasia of the alveolar epithelium (Fig. 10). Fibrous tissue proliferation was observed in lung (Fig. 11). Bronchitis was observed with infiltration of inflammatory cells (Fig. 12).

Fig 4: Petechial hemorrhages on the epicardium

Fig 5: Multifocal neoplastic nodules in the lung

Fig 6: Characteristic meaty appearance of the lung

Fig 7: Pulmonary edema with frothy exudate

Fig 8: Multiple necrotic areas in liver

Fig 9: Congestion of the kidneys

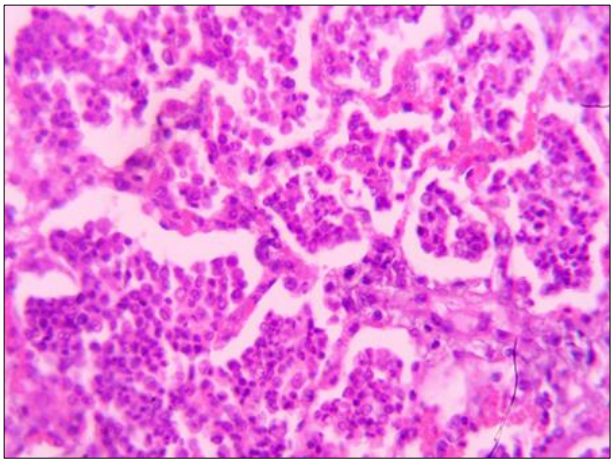

Fig 10: Finger like projections in to the alveoli due to hypertrophy and hyperplasia of the alveolar epithelium. H&E, 400x.

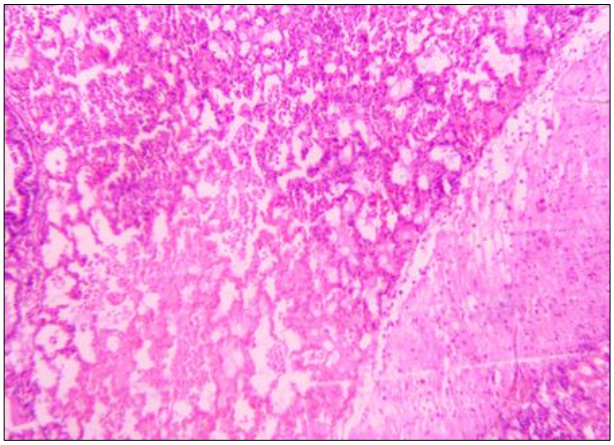

Fig 11: Fibrous tissue proliferation in the lung. H&E, 200x.

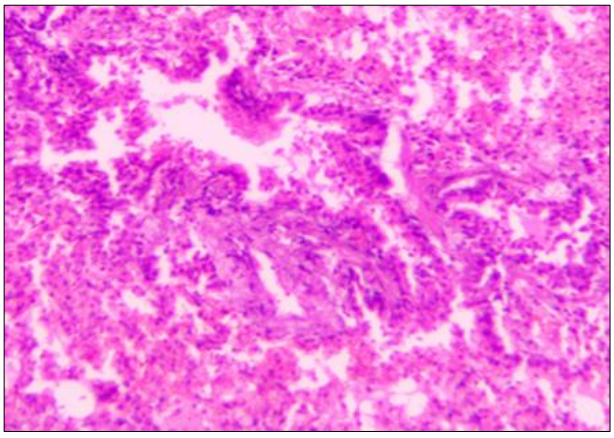

Fig 12: Bronchitis with infiltration of inflammatory cells. H&E, 400x.

4.2 Cytopathological examination

Impression smears of the lung revealed proliferated type -II pneumocytes which were neoplastic in nature. These neoplastic cells were cuboidal to columnar in shape and showing pleomorphism. These cells were foamy in nature, with numerous nucleoli and increased nuclear to cytoplasmic ratio (Fig.13).

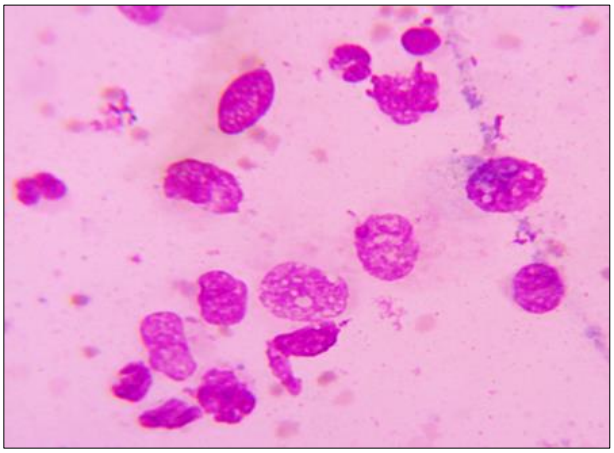

Fig 13: Proliferated neoplastic type-II pneumocytes with pleomorphism and these cells are foamy in nature with numerous nucleoli. Giemsa stain, 1000x

5. Conclusion

Based on postmortem findings, characteristic histopathological and cytopathological observations, the case was successfully diagnosed as a rare case of Jaagsiekte in a goat which is not commonly seen in the goats.

6. References

1. Griffiths DJ, Martineau HM, Cousens C. Pathology and patho genesis of ovine pulmonary adenocarcinoma. Journal of Comparative Pathology 2010;142:260-283.
2. Palmarini M, Cousens C, Dalziel RG, Bai J, Stedman K, Demartini JC *et al*. The exogenous form of Jaagsiekte Retrovirus (JSRV) is specifically associated with a contagious lung cancer of Sheep. Journal of Virology 1996;70:1618-1623.
3. Sonali Mishra, Pawan Kumar, Javeed Ahmad Dar, Vidya Singh, Kunal Pandit *et al*. A rare case of pulmonary adenocarcinoma in goat. Journal of Entomology and Zoology Studies 2018;6(5):981-982.
4. De Las Heras M, Ortin A, Salvatori D, Perez De Villareal M, Cousens C, Ferrer L M *et al*. A PCR Technique for the detection of Jaagsiekte retrovirus in the blood suitable for the screening of virus infection in sheep flocks. Research in Veterinary Science 2005;79:259-264.
5. Summers C, Norval M, De Las Heras M, Gonzalez L, Sharp JM, Woods GM. An influx of Macrophages is the predominant local immune response in Ovine Pulmonary Adenocarcinoma. Veterinary Immunology and Immunopathology 2005;106:285-294.
6. Luna LG. Manual of Histological staining methods of the Armed forces Institute of Pathology, 3rd edition, Mc Graw Hill Book Co, New York 1968.
7. Barcia JJ. The Giemsa stain: its history and applications. International Journal of Surgical Pathology 2007;15(3):292-6.