COMMUNICATION I

Atypical Interstitial Pneumonia in a Kedah-Kelantan Calf

ABSTRACT

A case of atypical interstitial pneumonia in a three month-old Kedah-Kelantan bull calf is described. The calf had died suddenly and showed typical histopathological changes in the lung of alveolar epithelial cells hyperplasia and pink hyaline membrane in alveoli. The cause is unestablished.

INTRODUCTION

Atypical interstitial pneumonia (AIP) is a disease of cattle characterised clinically by an acute or chronic respiratory distress usually with absence of toxaemia. Its pathological features include pulmonary emphysema and alveolar oedema accompanied by presence of hyaline membranes and hyperplasia of alveolar epithelial cells (Blood et al., 1983). It has been recognised in many temperate countries including Canada (Blood 1962), and the United States (Blake and Thomas 1971) and in Great Britain where it is known as fog fever (Selman et al., 1974).

This paper reports a case of AIP in Malaysia.

HISTORY AND PATHOLOGICAL FINDINGS

A three month-old bull calf of Kedah-Kelantan (Bos indicus) breed, the indigenous Malaysian beef cattle, was found dead in the Universiti Pertanian Malaysia farm without having been noticed sick. It had been grazing 4 days previously with its dam and the rest of the herd of over 20 adults and calves of the same breed on a grass-legume mixture paddock of Guinea grass (Panicum maximum) and the legumes Calopogonium mucunoides and Centrosema pubescence. The pasture had been spelled for the previous 14 days after the application of the fertilizer, murate of potash. The calf had been dewormed 4 days earlier with levamisole (Nemicide-ICI) at 1 ml/10 kg subcutaneously and sprayed with 0.3% copper sulphate solution against a skin infection. The rest of the herd were doing well showing no signs of illness.

Remarkable pathological changes were restricted to the respiratory tract. The lungs were heavy and markedly distended having failed to collapse. All lobes particularly the diaphragmatics were discoloured dark-red, firm and had marked interstitial and alveolar emphysema. The trachea and bronchi contained white frothy exudate while copious amount of dark serous fluid exuded freely from the cut surfaces of the lungs. Lung worms were not present.

Microscopically, the lungs in all lobes showed marked congestion of alveolar capillaries and
alveolar oedema. Distinct pink hyaline membranes, some with fibrillar nuclear debris, were present in most of the alveolar spaces. Many isolated lobules exhibited thickening of alveolar wall with hyperplasia of alveolar epithelial cells while many alveolar macrophages were present in most lobules. Interstitial emphysema was irregularly distributed in all lobes.

**DISCUSSION**

The gross and histopathological findings in this case, except for the absence of bronchiolitis obliterans, resemble closely to AIP of the hypersensitivity type which has been described in young calves in Canada (Schiefer et al., 1974). The exudative nature of the lesions resembles a type III pulmonary hypersensitivity reaction seen in bovine extrinsic alveolitis following inhalation of *Microsporospora faeni* antigens found in mouldy hay (McCombs 1972, Pirie et al., 1971). The other type of AIP occurring in older animals is associated with a change from a dry to lush pasture and is thought to be biochemically mediated through 3-methylindole derived from fermentation of D, L-tryptophan present in pasture (Schiefer et al., 1974).

In our case, a specific cause could not be determined. Although the case was associated with the animal grazing in lush grass-legume pasture, the lesions observed, the young age of the animal and the occurrence as a single case are suggestive of hypersensitivity reaction. The animal was not, however, exposed to any mouldy feed to suggest any causal hypersensitivity factor. We believe this is the first report of AIP in this part of the world.

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**REFERENCES**


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