

DEMONSTRATION OF *PASTEURELLA MULTOCIDA* ORGANISM IN EXPERIMENTALLY INFECTED MICE LUNG TISSUES BY SPECIAL STAINS

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Pasteurella multocida is an opportunistic animal pathogen of considerable veterinary importance. Plenty of outbreaks in animals occur during the monsoon just before the hot and dry summer months. The incidence starts increasing from May-June with the commencement of rains, reaches its peak in August and drop gradually. In spite of the variation in agro climatic conditions in India, this disease occurs throughout the country. This organism is capable of infecting cattle, buffalo, sheep, swine and both wild and domestic fowl. Rabbits, rats and mice are also naturally infected by this organism (Collins, 1973).

In the present study, the tissue sections of infected animals were stained by special stains such as Giemsa for demonstration of bipolar organisms, MacCallum Goodpasture stain for the demonstration of gram negative organisms.

A total of one hundred and eighty mice grouped into eighteen groups of ten each were utilized in the present study. Of these, nine groups were infected with 0.2ml of bacterial culture containing 7.4×10^8 cfu/ml of *P. multocida* serotype A: 1 and remaining nine groups were kept as control. The animals were observed for symptoms and they were sacrificed at 6, 12, 24, 36, 48, 60, 72 and 96 hours post inoculation (HPI). The lung tissues from

different intervals of the sacrificed animals were fixed in buffered neutral formalin solution. The infected tissues were then subjected to histopathological examination and they were stained using Giemsa and MacCallum Goodpasture stain for the demonstration of the organism (Mallory, 1942).

The lung tissues from all infected groups showed the presence of bipolar organisms by Giemsa stain (Fig.1.) and Gram negative cocco-bacilli by MacCallum Goodpasture stain (Fig.2.). The lung tissues of the control animals did not show the presence of the organism. The organism was seen scattered throughout the infected lung tissues. Further, these infected lung tissues when subjected to other diagnostic techniques like Polymerase Chain Reaction and Immunoperoxidase test also gave positive results. Kumar (2005) stained the pneumonic lung tissue of rabbits with Methylene Blue and Giemsa stain and was able to demonstrate the organism in all the infected lung tissues. However, reports on demonstration of *P. multocida* serotype A: 1 from lung tissues of infected mice using these staining methods are not available in the literature. From this study we can conclude that these special stains could be employed in the diagnosis of pneumonic pasteurellosis caused by *P. multocida* serotype A: 1 in animals.

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Demonstration of *Pasteurella multocida*

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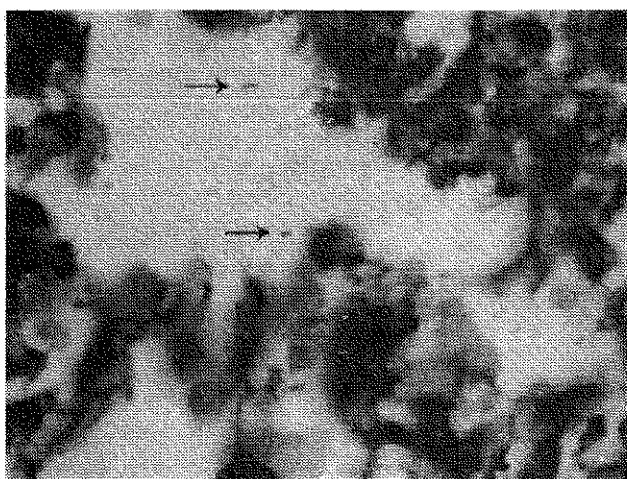


Fig.1

Lung: Bipolar organism (arrow) in the alveolar lumen. Giemsa. X 800

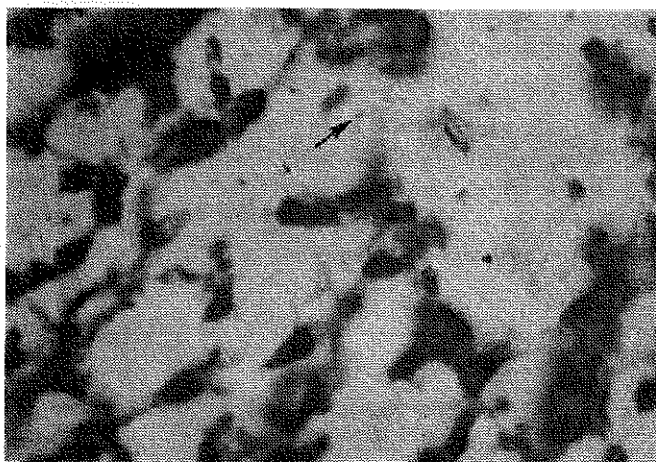


Fig.2

Lung: Gram negative cocco-bacilli (arrow) in the alveolar lumen. MacCallum- Goodpasture stain. X 800