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IN CONFIDENCE

PATHOLOGY REPORT : HOUND SURVEY-REFERRAL OF UNRESOLVED CASES

Material received

Material was received from 10 hound brains, sufficient to carry out a comprehensive histopathological examination of the brain in each case. Both material processed at Thirsk VIC and additional material processed at Path Dept CVL was examined.

References:	HSE	Thirsk VIC	Path Dept CVL
	90/5	M403/11	90 1510
	90/8	M449/11	90 1511
	90/11	M583/11	90 1514
	90/12	M636/11	90 1526
	90/13	M635/11	90 1525
	90/14	M637/11	90 1527
	90/15	M756/11	90 1519
	90/18	M913/11	90 1520
	90/19	M530/11	90 1512
	90/20	M531/11	90 1513

Histopathological observations were made in each case without a knowledge of the results of electron microscopy examinations for fibrils.

Macroscopic observations

There were no significant gross observations on examination of the fixed tissues.

Microscopic observations

Vacuolar changes in the gracile, cuneate and accessory cuneate nuclei of the medulla were present to varying degrees in all cases. Some of this change was clearly artefact and associated with more generalised features of inadequate tissue preservation but in some instances there were features

suggesting authentic neurodegenerative changes. The lateral reticular nucleus was similarly affected in some cases. Occasionally appearances suggesting vacuolated neuronal soma were observed but at a very low frequency and more often in cases where observations were complicated by less than optimum preservation.

In most cases there was a widespread sparse neuropil vacuolation, mainly involving white matter.

When electron microscopy examination results were compared with light microscopy findings there was no clear histopathological correlate of positive fibril detection. In 4 of 5 cases in which fibrils were detected solitary equivocal neuronal vacuoles were observed although this was confounded by the occurrence of post mortem changes in the same 4 cases.

Comment

Some of the changes observed in these cases are undoubtedly attributable to post-mortem artefacts. The reprocessing of tissue for this investigation indicates that the majority of this post-mortem change has been acquired in the interval between death and the initial tissue processing. Some of the changes do, however, appear to be neurodegenerative in nature and may represent age-associated or incidental pathology, or, indeed, changes of a neurological disease. Further assessment of the significance of these changes would require improved fixation of the tissue including minimising the time between death and immersion in the fixative, to a matter of minutes. Assessment of whether or not the subtle changes are causative would, of course, depend on provision of a detailed clinical history including a veterinary clinical neurological examination. The significance of some of the neurodegenerative changes could not be determined without examination of the remaining parts of the central nervous system, namely the spinal cord. Also, at some stage it could prove necessary to examine central nervous system material from appropriate control animals which had been housed and fed under different environmental conditions.

The interpretation of these cases is therefore limited to suggesting that there is no evidence of a florid scrapie-like encephalopathy as has presented in domestic cats. There are nevertheless observations, including

in some cases localised vacuolar changes, the significance of which has not been determined.

The objective of the hound survey is stated to be detection of spongiform changes in the brains of hounds. This would seem to have been achieved but the design of the survey, without established diagnostic methods for a scrapie-like encephalopathy presenting in dogs, prevents interpretation of the significance of the changes. Also, the changes which have given rise to referral of cases seem to have occurred with relative frequency in the survey to date. This being so it can be anticipated that a significant proportion of the survey could result in unresolved cases. As implied in the Inset 25 we must not assume that transmission of BSE to other species will invariably present pathology typical of a scrapie-like disease.

In view of these points consideration should be given to truncating the present survey and commissioning appropriate research. John Wilesmith, Mike Dawson and I would, of course, be willing to discuss the requirements for such studies.

Gerald A H Wells
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4 January 1991

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