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978-0-521-10568-2 - Atlas of Post-Mortem Techniques in Neuropathology

J. Hume Adams and Margaret F. Murray

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in NEUROPATHOLOGY

J. HUME ADAMS
Professor of Neuropathology
University Department of Neuropathology
Institute of Neurological Sciences,
Southern General Hospital,
Glasgow, Scotland

and

MARGARET F. MURRAY
Senior Medical Photographer
Regional Plastic and Oral Surgery Unit
Canniesburn Hospital
Glasgow, Scotland

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Foreword

There is no doubt that the ever-increasing number and variety of investigations applicable during life has led to considerable improvements in diagnostic practice, and in consequence there is now a tendency to downgrade the clinical importance of the autopsy. This is unfortunate, for every competent pathologist knows that, quite apart from its teaching value, autopsy commonly reveals lesions which, had they been appreciated earlier, would have influenced the management of the patient concerned. Indeed, this has been confirmed by recent collaborative studies between pathologists and clinicians practicing a high standard of patient care. Yet even the most conscientious pathologist may have difficulty in providing an adequate autopsy service, for the diagnostic biopsy service must claim first priority, and this has increased greatly as a result of advances in radiological and related procedures, in endoscopy and in needle biopsy techniques.

If the autopsy is to hold its place as a helpful investigative procedure and a means of medical audit, it is essential that it should be performed in such a way as to provide the greatest amount of useful information, and nowhere is technique more important than in the removal and preservation of the tissues dealt with in this book - the nervous and muscular systems and the eye. Unlike his clinical contemporaries, who have undergone a fair apprenticeship in the major bedside specialties during the medical school curriculum and early post-

graduate training, the trainee pathologist has usually little or no previous practical experience in his intended specialty. He (or she) will find this book invaluable, for although atlases and texts on general autopsy technique are available, I know of none which deals with these topics as clearly and authoritatively as in the pages which follow. Nor are Professor Adams and his colleagues alone among neuropathologists in lamenting the uneven standard of autopsy practice, sometimes even by experienced pathologists, in this country. To the consultant pathologist, the advice they offer will not only improve the value of autopsies, but will actually save time by excluding many of the artefacts which arise from unsatisfactory technique and which render diagnosis more difficult.

Finally, it seems appropriate to note that the Neuropathology Department in the West of Scotland, which was instituted by my predecessor, Professor D.F. Cappell, has for many years provided a superb referral service to pathologists in the region. I hope that we can now express our appreciation by improving the quality of material submitted to Professor Adams and his colleagues.

J.R. Anderson

University Department of Pathology,
Western Infirmary,
Glasgow.

Preface

As every neuropathologist knows, the brain and spinal cord are often not removed as well as they should be post mortem: it is very frustrating to be asked to undertake a neuropathological assessment on specimens that are so distorted that it is difficult, if not impossible, to reconstitute the situation that existed prior to death. Yet this is precisely the information sought by neurosurgeon, neurologist and neuro-radiologist. Since it is not difficult to remove the brain and cord properly, one can only assume that pathologists and mortuary attendants are unaware of the importance of doing so. A common reason for a brain becoming distorted is that it is removed by the mortuary attendant and then left lying on the dissecting bench for some time before the pathologist decides that it should be fixed intact for dissection later. Furthermore, the optic chiasma and the brain stem are often torn, and the lower medulla and the vertebral arteries are often left within the skull. These observations are not meant to be critical of mortuary attendants, but more of pathologists who fail to appreciate the importance of removing the brain themselves, or at least being present when it is being removed. How else can they know if the dura is tight or slack, and if there is any blood in the extradural or subdural spaces, or how much blood, or for that matter in what space!

This book is therefore aimed at general pathologists and mortuary attendants in the hope of convincing them

that it is not difficult or time-consuming to remove and fix the brain and spinal cord properly post mortem. Neuropathology is simply a branch of general pathology and we would hope to persuade general pathologists to take a more active interest in the brain and to dissect brains themselves after fixation. So much more information becomes available to clinician and pathologist if the brain is properly fixed and dissected that it is difficult ever to justify slicing at the time of autopsy the brain of a patient dying as a result of some neurological disorder.

Some time ago we were invited by the World Health Organization, as part of their UND/World Bank/WHO Special Programme for Research and Training in Tropical Diseases, to produce an illustrated manual on how to remove the brain. This was to be used by medical practitioners in various African countries, often in poorly equipped hospitals away from major medical centres, on patients dying as a result of African trypanosomiasis. Since the brains we have received from these sources have often been in much better condition than those we receive from Departments of Pathology in the West of Scotland, it occurred to us and Cambridge University Press that a similar manual might be of more general interest. We are greatly indebted to the WHO Special Programme for allowing us to reproduce in this atlas several of the original illustrations, viz. Figs. 1.1-1.3, 1.11-1.26, 1.28-1.30, 1.33 and 2.2-2.6.

We have, however, incorporated several new features viz. how to remove the spinal cord and posterior root ganglia, how to examine the base of the skull, how to dissect out the major extracranial cerebral arteries in the neck and how to take samples of nerve and muscle. We are particularly indebted to Professor W.R. Lee,

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Professor of Ophthalmic Pathology in the University of Glasgow, for collaborating with Mrs. Murray in the preparation of chapter 3 which deals with the eye and orbital contents. And finally, in the hope of persuading more pathologists to fix and dissect brains, there are chapters on how to dissect a fixed brain and on neuro-anatomy. The last chapter is not meant to compete with comprehensive textbooks of neuro-anatomy but it is hoped that it will help pathologists to delineate reasonably precisely the anatomical distribution of any structural abnormalities they observe in the brain.

In countries where embalming is practised widely, some of the techniques described may require to be modified but none is incompatible with proper re-constitution of the body. The general principles remain: good exposure, careful removal and proper fixation.

We have already expressed our appreciation of the invaluable help given to us by Professor W.R. Lee. We would also like to thank Mrs. Joan Rubython for her tireless and uncomplaining secretarial assistance: we are now very conscious of the work entailed in producing camera-ready copy. We are also greatly indebted to Professor J.R. Anderson for his Foreword, and to Cambridge University Press for their courteous and helpful approach to all our queries and, in particular, to the generous assistance given to us by Mr. Jack Bowles and Dr. Fay Bendall.

Glasgow

J. Hume Adams
Margaret F. Murray