Detection of parvovirus B19 in macerated fetal tissue using in situ hybridisation

Walters and colleagues recently compared the effectiveness of in situ hybridisation with immunochemistry in detecting parvovirus infection following fetal death. They concluded that in situ hybridisation is the method of choice. We have used the antibody R92F6 over a number of years (with a routine streptavidin-biotin technique and a 1/300 dilution of primary antibody), and have found it to be a reliable method for confirming parvovirus infection. For example, in an 18 month period during 1993 and 1994 we detected parvovirus infections in haematoxylin and eosin stained sections from 10 cases of fetal death (with varying degrees of maceration from none to severe), and used immunochemistry to confirm infection in all cases. We identified a further case (a very macerated 11 week-size missed abortion) by retrospectively staining all non-malformed 10 to 24 week fetal deaths occurring during the same period. Fragmented viral inclusions were identified on further close scrutiny of the haematoxylin and eosin stained sections from this case. Walters and colleagues provided one possible reason why they failed to demonstrate immunohistochemical labelling in four of their cases: they found that excessive background staining in the same liver with unequivocal viral inclusions reduced the effectiveness of the method. We agree with Dr Wright’s comments that antigenic expression of the viral capsid antigen of parvovirus B19 (R92F6) is an excellent antibody for detecting parvovirus, especially in macerated tissues. Newcastle upon Tyne, UK


We found there were 19% of cases where histopathology was not done even though it was indicated by the guidelines. This may well reflect excessive workload—several pathologists were doing many more necropsies and surgical cases than the Royal College of Pathologists recommends.

When however the group debated the necessity for “histopathology of the major organs, whether or not macroscopic pathology is present”, a strong view prevailed that where there was no expectation of diagnostic gain—for example, a young person dying by hanging, overdose or trauma, histopathology was not indicated and should not be done. Similarly, a physician would not want to undergo a “full histology” examination if the need to target time and resources appropriately? Postmortem histopathology is expensive and time consuming, and cannot be justified unless there is reasonable expectation of diagnostic gain.

The group therefore considered that when the examination could not be expected to contribute to the final diagnosis, histopathology did not constitute standard care. Perhaps instead of recommending routine histopathology in all cases, the college might organise a prospective study of the value of histopathology in deaths thought to be caused by myocardial infarction. If more information was available in this contentious area, decisions could be based on evidence rather than precedent.

We agree with Dr Wright’s comments that antiparvovirus B19 (R92F6) is an excellent antibody for detecting parvovirus, especially in lung tissue. However, we investigated liver tissue as it is recognised that hepatic erythroblasts are probably the major site for virally expressed protein is more resistant to degradation. Liver tissues are readily detectable in the same liver with unequivocal viral inclusions, and so was ideal for this second objective, although not ideal for a primary diagnostic exercise. We found that severely autolysed liver tissues often had numerous artefacts and reduced staining intensity, which made interpretation more difficult when using an immunocytochemical technique for parvovirus B19 (R92F6).

In our hands, we were able to obtain good staining in the same liver with unequivocal results by using an in situ hybridisation technique.


Use of histopathology in the practice of necropsy

A recent audit of necropsy reporting[1] showed that fewer than one in five postmortem reports audited included a histology report. The paper then went on to analyse the reasons for not routinely performing postmortem histology and suggested that the Royal College of Pathologists should reconsider its existing guidelines regarding the necessity of histology in most postmortem examinations.

I consider the college guidelines to be correct as they stand: a postmortem is incomplete without histology of the major organs, regardless of whether macroscopic pathology is present. Consider the following situation.

A patient presents with iron deficiency anaemia. Colonoscopy and biopsy reveal caecal carcinoma. During the right hemicolectomy, intraoperative frozen section shows liver metastases. Macroscopic examination of the specimen shows a tumour penetrating to the serosal surface and involving many nodes.

Would any histopathologist seriously consider not performing histology on the right hemicolectomy specimen? Yet exactly the same arguments put forward for not performing postmortem histology would apply to the above surgical case. After all, full histology would be unlikely to add anything to alter patient management.

I think the real reason for the low percentage of postmortem reports with histology is that many consultant pathologists are overworked. Overworked consultants have to cut corners and they cut them in the areas with the least impact on patient care. None of us likes to admit that we are substandard in any aspect of our work, so we invent reasons why the work we have done is not necessary in the first place.

Instead of trying to get the college to reduce the standards required for postmortem reports, we as a profession should be arguing for the correct level of staffing to enable us to do the job properly.


Dr Williams comments:

When we examined the use of histopathology in necropsy practice, subjects fell into three categories: those where histopathology had been carried out (25%); those where according to the guidelines it was judged advisable but was not done (19%); and those where histopathology was agreed to be of little diagnostic value (56%). As our guidelines included “Any tumour, whether or not contributing to death, unless adequately biopsied in life, and diagnosis made”, Dr Simpson’s example, presenting at necropsy, falls into the group where histopathology should have been done—not to alter patient management but to ensure accurate diagnosis.

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Book reviews

Death Investigation: the Basics.


“A foreign country; they do things differently there”—L P Hartley (1895–1972)

The author of this short paperback describes himself as a rural pathologist. His
practice is situated in the central United States, covering North and South Dakota. He has a heavy commitment to the Indian health scheme and its problems, particularly the high incidence of infant death. The book comprises 130 pages of text and 38 pages of back matter, which includes an index and an appendix.

The author sets out the aims of the book clearly, describing it as an introductory work that “focuses on the duties, jurisdiction and working methods of the primary death investigator”. This is an office whose duties embrace those of the medical examiner, coroner (American style), coroner’s officer, and junior police officer (both uniformed and plain-clothes). The book fulfills its declared function thoroughly and well. It serves as a basic introductory text for death investigators who have had no medicolegal or forensic science training.

The investigation in the United States differs greatly from the methods enshrined within the laws of the United Kingdom. There are great variations between States in the legal framework, the methods, and the procedures that are followed—for example, overlapping jurisdictions and potential conflicts between military and civil powers, state and county would not occur here.

The chapters on scene investigation and body identification are adequate. That on scene investigation is heavily weighted towards gunshot wounds. The chapters on public relations, death certification, and necropsy are based entirely on practices in the United States. All the chapters contain useful cautionary advice. The message that comes over loud and clear is “Don’t put your mouth in motion before brain engaged”.

A few basic measures, such as antibiotics recommended under specific infections not mentioned in the general chapter on antibiotics, confusion between Fucidin (a proprietary name) and fusidic acid, and between mega-units or grams for penicillin dose. There are numerous typographical and grammatical errors to add further irritation (such as Salmonella enterocolitis, and inconsistency in the spelling of Neisseria gonorrhea). More serious concern are errors such as ceftriaxone 25 mg for gonorrhoea, and routine antigen testing for human immunodeficiency virus, cytomegalovirus, and Chlamydia pneumoniae in serum.

Correction of these vagaries in the second edition will increase its educational value, and make the book a useful tool for trainee GPs.


A successor to the book on smear diagnosis in neuropathology, edited in 1981 by Adams, Graham, and Doyle, was long overdue and we now welcome the publication of Intra-operative Diagnosis of CNS Tumours by Moss, Nicoll, and Ironside.

Intraoperative diagnosis of tumours remains a personal challenge between the specimen and the pathologists who cannot benefit, at this stage of the process, from the wealth of tools recently introduced to help them, immunohistochemistry in particular. What the authors have tried, successfully, to do with this book is to accompany the pathologists through the stages of the preparation and interpretation of the specimen to enable them to offer better advice to the neurosurgeon who is waiting, sometimes impatiently, over an open skull, to know the nature and grade of malignancy of a neoplasm.

In this context, the first chapters are more than a mere introduction to the following ones; indeed, they give invaluable information and advice about how to become familiar with the specimen and how to decide how to submit it to smear or frozen preparation. As neurosurgeons may tackle a non-tumour lesion or sample an area adjacent to the neoplasm, it is essential for pathologists to be able to recognise non-neoplastic, reactive tissue and to identify normal brain. Accordingly chapter 3 goes into minute details and is richly illustrated. Chapter 4 should be read not only by neuropathologists but by neurosurgeons to make them realise why the diagnostic report may be unsatisfactory when the tissue has been handled carelessly before reaching the laboratory.

The subsequent chapters describe and illustrate the variety of tumours, primary and secondary, intradural and extradural, as well as a few non-neoplastic lesions, that neuropathologists come across in their routine practice. As the book was designed as a bench companion in everyday work, I found the number of tables accompanying the chapters in particular chapter 5, to be a particularly clever idea. Illustrations are plentiful and of high quality; they will help enormously in reaching the correct diagnosis.

Only a few critical notes: as each chapter consists of a fairly long and detailed text and numerous pictures, all clear and relevant, I would have found it more helpful for the reader, especially trainees, if reference to the latter were included in the former. Spelling errors are very few indeed and one has to congratulate both authors and publishers. Although spell checkers can do marvellous things nowadays, their services do not extend to deciding between words included in the dictionary but with completely different meanings (precautious instead of precocious puberty on page 99).

I must say that I can recommend Intra-operative Diagnosis of CNS Tumours without hesitation, in fact I can recommend it even before the book is on the shelves. It is a practical text that will be of great help in clarifying doubts that may arise at a crucial time of the diagnostic process. Trainees should treasure the advice and suggestions it offers and not be deterred by its cost.
Despite my reservations, this is an excellent example of an MCQ book. It gives the impression that these questions are tried and tested so that there are almost no ambiguities. They are written, generally, in a clear concise language and avoid linguistic complications that are common to some MCQs, although they lapse occasionally—for example, “Dystrophic calcification may occur in the absence of any derangement of calcium metabolism” could be phrased as “Dystrophic calcification may occur in patients with normal calcium metabolism”. The book covers both general and systemic pathology and comprises 300 five part MCQs. Each answer is on the following page and gives a one or two sentence explanation. The overall size will be about right for most students.

This is a companion to Underwood’s undergraduate text and there is another companion from the same stable using a problem based text of case studies. I was left wondering why the companion books were separate items. Perhaps in the future they could be combined so that students could test their factual recall and problem solving skills with one book.

SUSAN DILLY


Forensic Pathology is a typical example of what one had thought might have been allowed to die—no longer an atlas but a colour guide. I find it difficult to overcome a prejudice against such publications, finding the concision of the text and the consequent need for illustration—admittedly selected “on their practical value rather than their aesthetic appeal”—of more appeal to the voyeuristic than the serious student.

The basis of judgment of such a book is the quality of the photographs; these are largely good but several are not, failing to show with clarity (without recourse to the text) the “practical value” alluded to in the preface. Others are so obvious as to raise the question of reason for inclusion, returning to my uneasy feeling regarding possible purchasers.

I cannot regard this book as an essential resource for students; neither general principles nor grey areas are explored in sufficient depth.

S LEADBETTER

Correction

The Thyroid: Fine Needle Biopsy and Cytological Diagnosis of Thyroid Lesions (J Clin Pathol 1998;51:54)

This book review was written by Dr Colin Stewart; it was wrongly attributed to A M McNichol.

The error is regretted.