

Letter

Cytokeratin 10/13, 14, 7, 8, and 18 in invasive squamous cell carcinoma and adenocarcinoma of the uterine cervix

Maddox *et al* are to be congratulated for their thorough study of cytokeratin expression in the normal cervix, cervical intraepithelial neoplasia (CIN), and cervical carcinoma.¹ I was involved in a study of cytokeratin intermediate filament protein expression in cervical squamous carcinomas and adenocarcinomas.² We did not include details of the intensity of staining or the proportion of cells reacting with the antibodies in our cases and would like to take the opportunity of doing so.

Eleven patients with squamous cell carcinoma (five well differentiated, six moderately differentiated) and 20 patients with adenocarcinoma (14 with well differentiated and six with moderately differentiated tumours) were studied. The patients had been treated at the Jessop Hospital for Women in Sheffield and the presence of mucin elaboration was confirmed using the periodic acid-Schiff/Alcian blue technique with and without diastase digestion. Following routine fixation and processing and microwaving in 0.01 M trisodium citrate for 2 x 5 minutes at high power (600 W microwave), the sections were incubated in primary antibodies to cytokeratins 10/13 (NCL-DEK13), 14 (NCL-LL002), 8 (NCL-CK8), 18 (NCL-CK18), and 7 (NCL-CK7), all supplied by Novocastria and used at a dilution of 1:50. The reaction was detected using a three step peroxidase technique (Vectrastain Elite ABC kit, Vector Laboratories) and diaminobenzidine with H₂O₂. The slides were counterstained with haematoxylin. A positive reaction with each of the antibodies was noted when there was distinct brown staining in the epithelial cells. The percentage of cells reacting in each antibody, assessed semiquantitatively by re-

viewing all the sections available, and the intensity of the staining as demonstrated by the depth of colour in the cell cytoplasm were noted.

The results are presented in the table. There is no evidence of a statistically significant difference in either the intensity of the reaction or the proportion of cells reacting with any of the antibodies when well differentiated tumours are compared with moderately differentiated tumours in each of the cell types.

Although our findings differ from those of Maddox *et al*, it should be noted that the specificities of the antibodies used to detect cytokeratin 10 in the two studies differed, as the one we used also detects cytokeratin 13. Whereas Maddox *et al* used a quantitative method for assessing the proportion of cells reacting, we used a semiquantitative assessment. Finally, the number of carcinomas studied in each series was small. We are, however, grateful for the opportunity to present data regarding the intensity and proportion of cells reacting in our cases.

M K HEATLEY

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- Maddox P, Sasieni P, Szarewski A, *et al*. Differential expression of keratins 10, 17, and 19 in normal cervical epithelium, cervical intraepithelial neoplasia, and cervical carcinoma. *J Clin Pathol* 1999;52:41-6.
- Heatley MK, Cork K. Involucrin and cytokeratin intermediate filament protein expression in cervical carcinoma. *Int J Gynaecol Cancer* 1998;8:37-40.

This book aims to explore oncogenes and the current view of cancer as a molecular disease. The author assumes that the reader has no specialised knowledge and in the first five chapters he builds up a plausible story about the multistep process of carcinogenesis, somewhat spoiled by some inaccuracies in the detail. Perhaps this does not matter in an introduction, but to overcome this the book should be read from cover to cover. Part 1 is devoted to the principles of molecular biology of cells and is generally good. There are useful tables of fact and informative line diagrams. While reading, I noted facts that I thought had been left out, but in most cases these were covered in later chapters and the footnotes tell you what is to follow. At first this was annoying but in the end it does give one a good idea of the complexities of the subject. The second part is devoted to clinical examples of molecular oncology, starting with molecular diagnostics. Surprisingly there is no mention of comparative genomic hybridisation (CGH), a technique which is used with increasing frequency and has become an informative procedure, especially if similar types of tumour are compared. Chapters on leukaemia and lymphoma, colon cancer, cervical cancer, and breast cancers follow. Again the diagrams used to explain the text are good but the photomicrographs are of poor quality, particularly for a book which costs £22.50.

DIANA M BARNES

Atherosclerosis. Pathology of The Vasculature in Live Patients. Edited by J M Isner and M Kearney. (£60.00.) W B Saunders, 1999. ISBN 0-7020-1927-5.

In this book, studies of an impressive tissue bank of specimens obtained by directional atherectomy are described. Indeed, the amount and quality of these "in vivo" atherosclerotic specimens are unique.

In most chapters specimens from coronary, saphenous graft, peripheral, and dialysis fistula lesions are compared. Furthermore, primary, restenosis, and multiple restenosis

Book reviews

Introduction to Oncogenes and Molecular Cancer Medicine. By D W Ross. (£22.50.) Springer-Verlag, 1998. ISBN: 0 387 98392 9.

Reaction pattern of anticytokeratin antibodies in squamous cell carcinoma and adenocarcinoma of the cervix

	Percentage of cells reacting with each antibody																													
	Cytokeratin 1/10				Cytokeratin 14				Cytokeratin 7				Cytokeratin 8				Cytokeratin 18													
	1	26	51	76	1	26	51	76	1	26	51	76	1	26	51	76	1	26	51	76										
	0	—	—	—	100	0	—	—	—	100	0	—	—	—	100	0	—	—	—	100	0	—	—	—	100					
	25	50	75	99	25	50	75	99	25	50	75	99	25	50	75	99	25	50	75	99	25	50	75	99						
Squamous cell carcinoma																														
Well differentiated	0	1	0	0	1	1	1	1	1	0	1	0	1	2	0	0	1	0	2	0	1	0	0	0	1	1	2	0	1	0
Moderately differentiated	2	0	0	0	1	1	1	3	0	0	1	0	2	0	0	2	1	0	2	0	0	0	1	1	2	1	1	0	1	0
Adenocarcinoma																														
Well differentiated	2	1	1	0	2	7	11	1	0	0	1	0	4	0	4	3	1	1	1	4	1	0	4	0	0	1	1	2	7	2
Moderately differentiated	2	0	2	0	1	1	4	2	0	0	0	0	1	3	0	1	1	0	1	2	0	1	1	0	0	2	0	0	3	0
Intensity of intermediate filament expression in squamous cell carcinoma and adenocarcinoma of the cervix																														
	Cytokeratin 1/10					Cytokeratin 14					Cytokeratin 7					Cytokeratin 8					Cytokeratin 18					Total				
	0	II	III	IV	V	0	II	III	IV	V	0	II	III	IV	V	0	II	III	IV	V	0	II	III	IV	V					
Squamous cell carcinoma																														
Well differentiated	3	0	0	1	1	2	0	0	1	2	1	1	1	0	1	4	0	0	0	1	1	0	3	0	1	5				
Moderately differentiated	3	0	1	2	0	2	0	0	1	3	3	0	0	1	2	4	0	1	1	0	3	1	0	1	1	6				
Adenocarcinoma																														
Well differentiated	3	0	3	6	2	12	0	0	0	2	5	0	0	2	7	5	0	2	1	6	1	0	0	2	11	14				
Moderately differentiated	2	0	2	0	2	4	0	0	0	2	1	0	0	2	3	2	0	0	1	3	1	0	1	1	3	6				

lesions are described. Besides this, more recent development in atherosclerosis, such as apoptosis, gene expression, cell culture, and so on, are also studied in separate chapters. The chapters are based on studies by Isner and Kearney's group. Parts of these studies have been published recently in high ranking journals such as *Circulation*, *Journal of Clinical Investigation*, and the *American Journal of Pathology*.

Each chapter is well illustrated with coloured figures. However, most of the chapters lack a concise and clear summary. Furthermore, a general discussion at the end, where the results of all the chapters are combined to give a more general idea of the pathogenesis of atherosclerosis through this unique in vivo material is also missing.

This implies that it is difficult to see where the appeal of this book lies. I believe it is not particularly suitable for the general histopathologist. It is of more interest for pathologists, especially those interested in vascular pathology, or for the researcher in this field.

Personally, I enjoyed reading this well illustrated book.

H W M NIESSEN

Confocal Microscopy: Methods and Protocols. Edited by S W Paddock. (£99.50.) The Humana Press, 1998. ISBN 0 896 03526 3.

Confocal microscopy allows the imaging of discrete regions of tissues virtually free of out of focus fluorescence and is now used in many areas of biological research. This book is volume 122 in the long running *Methods in molecular biology* series and is written with the aim of leading the researcher using confocal techniques from the bench top, through the imaging process, to the journal page. It is, as its title makes clear, very much a book about methods and protocols.

After some introductory chapters covering practical considerations for collecting images and fluorescent probes, the bulk of the book is made up of specific methods for most of the commonly used model organisms: worms, sea urchins, flies, plants, yeast, frogs, and zebrafish. The protocols have been chosen with the novice user of a laser scanning confocal microscope in mind and include considerable detail. There follow chapters on live cell analysis including methods of imaging various ions and green fluorescent protein. The final chapters deal with the analysis and presentation of confocal images. Many black and white photographs and diagrams accompany the text and all seem appropriate and clear. There are four stunning colour plates (*Drosophila* embryos, chondrocytes, intracellular calcium dynamics, and some three dimensional illustrations).

While most pathologists are unlikely to be using the model organisms specifically described, the protocols are readily adaptable, with a little bit of ingenuity, to human or other animal tissues. For pathologists who

have access to a (usually multiuser) confocal microscope facility, this book would be a good buy, crammed full as it is with useful tips and hints.

J R SALISBURY

renal cancer—has changed to a German looking "Führman") only round off the disastrous impression made by the work.

G MIKUZ

CD-ROM review

Atlas of Pathology: Urological Pathology. By A Viellefond, H Bastien, C Billerey, N Berger, R Bouvier, B Cochand-Priollet, M-C Dauge-Geffroy, and B Fontanière. (£116.04.) Springer, 1999. ISBN 3 540 14657 1.

As this newest electronic medium lends itself so readily to storing nearly uncountable numbers of photographs, it is hardly surprising that a bevy of pathology atlases has recently appeared on CD-ROM. Unfortunately, the photographic quality still compares unfavourably with that of the printed page; for this the authors bear no blame, of course, and will benefit from improved technology in the near future. The editing, however, is their purview: the reproductions of only a few gross specimens can be tolerated, but the histological photographs, especially those at low magnification, are of no use whatsoever. The quality of the schematic diagrams and written slides is exceedingly poor, having been subjected to only the most primitive techniques. It is hard to believe that such renowned publishers did not have more sophisticated techniques available.

The authors themselves also bear responsibility for the arbitrary use of terminology, as well as the chaotic contents. I made every effort to comprehend the principles on which the individual chapters were organised, but in vain. The separate topics, for example prostate cancer, start with microphotographs, then somewhere later there appear some diagrams, a bit later gross surgical specimens, accompanied by more microphotographs. Pictures representing high grade PIN are captioned "Dysplasia or glandular hyperplasia with severe atypia"—highly misleading terminology, quite unacceptable in international pathology. The 150 pictures of testicular tumours are not accompanied by any classifications or explanatory notes. Under the heading "transplanted kidney," only one picture depicting a "malakoplakia" of the testis could be found—an utterly insignificant complication observed only once by one of the authors of the CD-ROM. Histology entitled "mild hypospermatogenesis" displays a severe maturation arrest. One could go on and on listing further examples of sloppy terminology combined with pictures of poor quality. Needless to say, the spelling errors (the entry "Führman"—grading of

Notices

Postgraduate Course on Gynecologic Pathology, San Diego, 15–17 January 2000

At the San Diego Hilton Beach and Tennis Resort, San Diego, California, USA.

Presented by the department of pathology, Massachusetts General Hospital, Harvard Medical School under the direction of Dr Robert H Young.

For further information, contact: Department of Continuing Education, Harvard Medical School, 25 Shattuck St, Boston, MA 02115, USA; tel +1 617 432 1525; fax +1 617 432 1562; email: hms-cme@hms.harvard.edu

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Further details from: Professor C S Foster, Department of Cellular and Molecular Pathology, University of Liverpool, Duncan Building, Daulby St, Liverpool L69 3GA, UK; tel +44 (0)151 706 4480; fax +44 (0)151 706 5883; email: csfoster@liv.ac.uk

Correction

In the paper by Jacobs *et al* in the July issue (Reliable high risk HPV DNA testing by polymerase chain reaction: an intermethod and intramethod comparison; volume 52, pp 498–503), the following acknowledgement should be included:

Financial support was given by Europe against Cancer SOC 96 201748.

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 - 2 Washington JA. Conventional approaches to blood culture. In: Washington JA, ed. *The detection of septicemia*. West Palm Beach, Florida: CRP Press, 1978:41-87.
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