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Measurement techniques for melanoma: a statistical comparison

The paper by Calder, Campbell, and Plaistow is misleading when it says that the depth of invasion of the dermis is the single most important prognostic factor in determining the outcome of any melanoma.¹ This factor is of importance in stage 1 melanoma, as quoted in their first reference, but in any melanoma the most important prognostic factor is the stage of the disease.² It should also be emphasised that in measuring the thickness of a melanoma the examination of multiple levels from multiple blocks to find the thickest part of the tumour is more important than the accurate measurement of tumour thickness on a single section.

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- 1 Calder CJ, Campbell AP, Plaistow SR. Measurement techniques for melanoma: a statistical comparison. *J Clin Pathol* 1990; 43:922-3.
- 2 Ackerman's *Surgical Pathology*, vol 1. 7th Ed. 135.

Drs Calder, Campbell and Plaistow comment: The letter from Goulding and Gradwell is correct in pointing out that the most important factor in the prognosis of a melanoma is the stage of the disease, and also that multiple blocks must be cut to find the thickest part of the tumour. Having found the thickest part of the melanoma, however, it is then important to be able to measure it accurately: this is the problem that our paper was addressing.

Cost effectiveness of dipsticks

MacGowan and colleagues express their doubts about the cost effectiveness of dipsticks for screening urines in a routine diagnostic laboratory.¹ We have reservations about their accuracy in detecting pyuria after performing a blind comparison of 1000 urine samples by BM stix and microscopy.

BM stix (Nepheur-test + Leuco; Boehringer Mannheim, Germany) were graded as follows: 0 = negative; + = 10-25 pus cells/ μ l; ++ = about 75 pus cells/ μ l; or +++ = about 500 pus cells/ μ l, according to the manufacturer's instructions. Microscopy was graded as 0 = less than 20 pus cells/ μ l, + = 20-50 pus cells/ μ l, ++ = 60-200 pus cells/ μ l, +++ = 200-500 pus cells/ μ l and ++++ = >500 pus cells/ μ l.

The results are summarised in table 1.

Table 1 Comparison of microscopy and BM stix for detecting pyuria

Microscopy	Leucocyte esterase stix			
	0	+	++	+++
0	499	17	4	0
+	91	51	8	10
++	52	27	43	27
+++	9	34	36	92
Total = 1000				

Of the 1000 urine samples examined, 499 (49.9%) were negative for pyuria by both microscopy and BM stix; 328 (32.8%) were positive by microscopy and BM stix; 21 (2.1%) were negative on microscopy but positive by BM stix; and 152 (15.2%) were positive for pyuria on microscopy but negative on BM stix testing. This suggests that BM stix grossly underestimate the presence of pyuria. Of the 480 samples in which pyuria was found on microscopy, BM stix were negative in 152, giving a false negative rate of 31.6% and a sensitivity of 76%. Furthermore, the degree of pyuria was underestimated by BM stix in 249 (51.8%) samples.

Several workers have advocated the use of dipsticks for screening urine before culture.²⁻⁴ Most studies take 10^5 organisms/ml as evidence of significant bacteruria. Various criteria for a positive dipstick have been used: positive nitrate or positive esterase and protein³; esterase, or nitrite, or blood positive⁴; visual appearance and nitrite or esterase positive²; blood, protein, nitrate or esterase positive.¹

Using these differing criteria, dipsticks have been found to have a sensitivity of 85-93% and a specificity of 38-85%. MacGowan *et al* took $>10^4$ organisms/ml as being significant and found dipsticks to have a sensitivity of 97.2% and a specificity of 57.5%.

In this study the sensitivity of dipsticks was 76%, but rather than using BM stix as a screening test before culture, we were only looking for the presence of pyuria, and unlike other workers, only took the leucocyte esterase into consideration. All our urine samples are preserved in boric acid because most are received from GPs and may spend up to 72 hours in transit. Delay in transit did not have any influence on the sensitivity of BM stix but it is conceivable that the presence of boric acid has some effect.

Table 2 Comparative results of subgroup

Culture result	Number	Pyuria on microscopy	Sensitivity of BM stix
$>10^5$ organisms/ml	107	89	90%
10^4 - 10^5 organisms/ml	20	15	73%
$<10^4$ organisms/ml	13	8	25%

In a subgroup of 460 consecutive samples of urine we correlated the findings on microscopy and BM stix with the culture result (table 2).

Though numbers in some of the groups are small, it is apparent that, compared with microscopy, BM stix become increasingly insensitive at detecting pyuria in lesser degrees of bacteruria. The criterion of 10^5 organisms/ml has been taken as the "gold standard" for defining significant bacteruria. In a symptomatic patient with pyuria, however, the presence of as little as 10^2 organisms/ml is felt to be significant by many workers.⁵

If BM stix are used instead of microscopy to detect pyuria many genuine urinary tract infections, especially those with lower bacterial counts may be misdiagnosed.

Before 1989 all our urine samples (about 100 000 a year) were tested by BM stix and culture on CLED agar by the method of Leigh and Williams. Microscopy was not performed routinely. In 1989 we abandoned dipstick testing in favour of microscopy. Each sample of urine is placed in a well of a microtitre tray and examined on an inverted microscope connected to a TV camera and monitor; the results are simultaneously typed into the laboratory mainframe computer. This system is both rapid and easy to use and the resultant savings from not using dipsticks (over £12 000 each year) have permitted the funding of an additional MLSO to perform the microscopical examination of the samples.

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- 1 MacGowan AP, Cowling P, Marshall RJ, Reeves DS. Screening of urines with dipsticks, does it reduce workload and consumable costs? *J Clin Pathol* 1990;43:875.
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BOOK REVIEWS

Tumors of the Lung. B Mackay, JM Lukeman, NG Ordonez. **Major Problems in Pathology Vol 24.** (Pp 407; £38.) WB Saunders. 1991. ISBN 0-7216-5807-5.

This 400 page book covers the wide field of lung tumours. It is well written with an excellent introductory chapter on the normal structure of the lung. All illustrations, both at the light microscopic and electron microscopic level, are of excellent quality and add considerably to the book's appeal. The chapter on staging is up to date and well informed. The authors emphasise that cytology needs close liaison with clinicians to avoid false positive diagnoses which can be seen in a wide range of non-neoplastic conditions.

The individual chapters on tumours are divided into the most common types, in addition to chapters dealing with rarer lesions. I particularly enjoyed the discussions on immunocytochemistry and electron microscopy. Bronchioalveolar cell carcinomas are described, and some of the confusion concerning these tumours is clarified. There is an in-depth analysis of immunocytochemical markers in mesotheliomas which may be of use in the diagnosis of this difficult tumour.

The book gives an excellent update on the latest thinking on the morphology of lung tumours and is particularly valuable for its insight into electron microscopy and immunocytochemistry. But it is limited by its size and cannot provide great detail. It has a few faults. In the chapter on pre-neoplastic lesions no reference is made to glandular dysplasia. In the chapter on carcinoids there is only one paragraph devoted to atypical carcinoids and tumourlets. Apart from these, the index is not very detailed. A chapter on bronchial biopsy and the difficulty of cell typing of tumours both with biopsy and cytology would have been welcomed. These are minor faults, however, and I consider that this book is good value for money.

MARY N SHEPPARD

Histological Typing of Tumours of the Gallbladder and Extrahepatic Bile Ducts. 2nd ed. J Albores-Saavedra, DE Henson, LH Sobin. (Pp 77; softcover DM 68.00.) Springer. 1991. ISBN 3-540-52838-5.

This book follows the general philosophy of this series: it tries to standardise the nomenclature of tumours so that findings from one country to another can be compared and therefore epidemiology, both within and between countries, will be reliable. This new edition incorporates investigations using newer techniques. The diagnoses described are more numerous than in the first edition. The general problems of typing, grading, and staging of tumours are discussed. The role of properly and early tissue fixation to demonstrate fully the gallbladder epithelium is emphasised. Added to this are now the problems of the stripping and destruction of the epithelium during laparoscopic cholecystectomy.

The epithelial tumours—benign, dysplastic, and malignant—are described and also the endocrine cell tumours. This is followed by a section on non-epithelial tumours, benign and malignant, including Kaposi's sarcoma. There follow a miscellany of unclassified tumours and metastases.

The final section describes the tumour-like lesions which are encountered more commonly in everyday practice of surgical pathology. The tumours are SNOMED coded, the photographs are in black and white, plus 10 in colour. The general philosophy of this series is that they should not be regarded as textbooks, thus no references are given.

This is a potentially useful book for recognising the more uncommon tumours of the gallbladder encountered in routine histopathological practice. The deterring feature is the price for 77 pages.

D HOPWOOD

Cell Receptors. Morphological Characterization and Pathological Aspects. Current Topics in Pathology No 83. Ed G Seifert. (Pp 522; 142 figs; DM 298.00.) Springer. 1991. ISBN 3-540-52284-0

This collection of reviews by a host of German (and a few North American) authors is presented in a high quality format in this, the eighty third volume in the *Current Topics in Pathology* series. Many of the chapters benefit from lovely illustrations (particularly the three-colour diagrams in the chapter classification of cell receptors, by RD Hesch, and the photomicrographs in the chapter morphological characterisation of cell receptors, by M Dietel). The molecular biology of receptors and oncogenic growth factor receptors is covered in adequate detail, although the fast-moving nature of the subject gives any review with the publication delay inevitable in a multiauthor book an in-built obsolescence. For example, the acidic and basic fibroblast growth factors reviewed in this book are now recognised as two members of a family of seven FGF-related growth factors, and there are at least four different FGF receptor genes. There is rather a bias towards steroid receptors, both overall and in the tumour specific chapter on breast and prostate cancer: modern pathologists will be surprised to find no mention of *c-erbB-2* or oestrogen growth factor receptor expression in the chapter on breast cancer. There are other notable omissions, such as the fact that retinoic acid receptors and *erbA/T₃* receptors are not considered, despite their growing biological and clinical importance. This book is good in parts, but not good enough to be worth nearly £100.

NR LEMOINE

Cytopathology of the Uterine Cervix. ASCP Theory and Practice of Cytopathology. 1. A Meisels, C Morin. (Pp 351; \$170.) Raven Press. 1991. ISBN 0-89189-299-0.

Until recently there has been a dearth of cytopathology textbooks and it is encouraging to see one published in full colour. The photomicrographs, especially of Papanicolaou stained smears illustrate well the various morphological changes seen in the cervix.

It would have been useful to have the chapter on gynaecological smears at the beginning rather than the end of the book as we are not accustomed to the term VCE smear. There are other differences between our terminology and that of the North Americans—for example, the use of the Bethesda system rather than CIN nomenclature. Much attention is paid to human papilloma viruses: two whole chapters are devoted to them, while squamous intra-epithelial lesions (our dyskaryosis) make do with three half pages of text, three half pages of photomicrographs, and seven pages of references. One feature that is prominent in this book is the amount of wasted space on each page. The chapters on technical consideration and the computerised cytology laboratory are far too detailed for a book on cytopathology, but the chapter on quality assurance is excellent and timely.

This book with its beautiful illustrations would be useful in any cytology laboratory with the proviso that newcomers to cytology could be confused by the terminology.

GRACE MCKEE

NOTICES

Aspects of alcohol abuse 18 October 1991

Postgraduate Medical Education Centre,
Lincoln County Hospital

East Mercian Branch of Association of
Clinical Pathologists

Open to non-members. Will include
clinical, medicolegal, and metabolic
aspects, and the effect of alcohol on the
liver.

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Tel: (0723) 368111, ext 2366

Association of Clinical Pathologists

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Junior membership of the Association is available to medical practitioners who have been engaged in the practice of pathology for a period of less than four years. Junior members are able to remain in this category for a maximum of six years or on the attainment of consultant status. The annual subscription is £24 for those resident in the United Kingdom and £55 for those overseas. The annual subscription may be claimed against tax.

Junior members receive the *Journal of Clinical Pathology* each month. Other benefits are reduced registration fees to attend ACP scientific meetings, all the documents regularly sent to full members of the Association including *ACP News*, which has a regular column for juniors, and the twice yearly summary of pathology courses included in the ACP programme of postgraduate education. Junior members have their own representative body, the Junior Members' Group, which has a direct input to Council.

For Junior Membership apply to: The Honorary Secretary, Association of Clinical Pathologists, School of Biological Sciences, Falmer, Brighton, BN1 9QG. (0273) 678435.

Correction

A typographical error appeared in the paper entitled *Analysis Adhesion Molecules in the Immunopathogenesis of Giant Cell Arteritis* by S Wawryk, H Ayberk, AW Boyd and J Rode (Volume 44, 497–501).

Following the first line in the second paragraph on page 499, fig 3 should be fig 2.