Correspondence


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.

H GOULDING
Department of Histopathology, Whiston Hospital, Prescot, Merseyside L35 5DR


2 Ackerman’s Surgical Pathology, vol 1. 7th ed. 135.

Dr 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. 2 A stix (Neubauer test + Leuco; Boehringer Mannheim, Germany) were graded as follows: 0 = negative; + = 10-25 pus cells/µl; ++ = about 75 pus cells/µl; or + + = about 500 pus cells/µl, according to the manufacturer’s instructions. Microscopy was graded as 0 = less than 20 pus cells/µl; + = 20-50 pus cells/µl; ++ = 60-200 pus cells/µl; or +++ = 200-500 pus cells/µl and ++++ = > 500 pus cells/µl. The results are summarised in table 1.

Table 1 Comparison of microscopy and BM stix for detecting pyuria

<table>
<thead>
<tr>
<th>Leucocyte esterase stix</th>
<th>Microscopy</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>+</td>
</tr>
<tr>
<td>490 17 4 0</td>
<td>+</td>
</tr>
<tr>
<td>91 51 8 10</td>
<td>+</td>
</tr>
<tr>
<td>52 27 43 27</td>
<td>+</td>
</tr>
<tr>
<td>9 34 36 92</td>
<td>+</td>
</tr>
</tbody>
</table>

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 underestimated 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. 3,4 Most studies take 10° organisms/ml as evidence of significant bacteriuria. Various criteria for a positive dipstick have been used: positive nitrate or positive esterase or protein; esterase, or nitrite, or blood positive; visual appearance and nitrite or esterase positive; 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° 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

<table>
<thead>
<tr>
<th>Culture result</th>
<th>Number</th>
<th>Pyuria on microscopy</th>
<th>Sensitivity of BM stix</th>
</tr>
</thead>
<tbody>
<tr>
<td>&gt;10°organisms/ml</td>
<td>107</td>
<td>89</td>
<td>90%</td>
</tr>
<tr>
<td>10°-10°organisms/ml</td>
<td>20</td>
<td>15</td>
<td>73%</td>
</tr>
<tr>
<td>&lt;10°organisms/ml</td>
<td>13</td>
<td>8</td>
<td>25%</td>
</tr>
</tbody>
</table>

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 clinical workers to avoid false positive diagnoses which can be seen in a wide range of non-neoplastic conditions.

BOOK REVIEWS


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 bacteriuria. The criterion of 10° organisms/ml has been taken as the “gold standard” for defining significant bacteriuria. In a symptomatic patient with pyuria, however, the presence of as little as 10° organisms/ml is felt to be significant by many workers.

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 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 microscopic examination of the samples.

G HARVEY
The Regional Laboratory, City Hospital, Aberdeen AB9 4AU


