lymphoid cells but no blasts. A bone marrow aspirate showed hypercellular with active left shifted myelopoiesis. Blasts constituted 2% of nucleated cells, and so the marrow was initially considered to be “reactive” but in haematological remission. His symptoms persisted and prompted further examination of the marrow. The locations of five blast cells were noted using the Vernier coordinates on the microscope stage, and the film was then destained by immersion in 1% acid alcohol. Relocation of the cells after re-staining with periodic acid Schiff reagents showed that four had block periodic acid Schiff positivity. Over the course of the next three weeks he became progressively unwell and blast cells started to appear in his peripheral blood. A repeat marrow aspirate confirmed leukemic relapse, with 25% block periodic acid Schiff positive blasts.

Usually, when blasts number less than 5% of marrow cells, the diagnosis of leukemic relapse requires that they are shown to represent residual disease as opposed to normal or “reactive” marrow elements. Consecutive staining as outlined above allows for two cellular characteristics, in themselves neither specific nor diagnostic, to be assessed in combination. This case illustrates how the technique can be useful when applied to individual blast cells. The patient’s clinical course confirmed the ominous nature of the cells examined, and suggests that this simple technique may occasionally allow the detection of early leukemic relapse.

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Reference


“Staphaurex” negative, methicillin resistant Staphylococcus aureus

Staphylococcus aureus is usually identified in clinical microbiology laboratories by using the slide test for clumping factor (bound coagulase) and the tube coagulase test for free coagulase. The tube coagulase test is generally accepted as the definitive test. The “Staphaurex” test kit (Wellcome Diagnostics) for S aureus consists of polystyrene latex particles coated with IgG to detect protein A and with fibrinogen to detect clumping factor. The manufacturer claims that the test overcomes the problems associated with the more traditional techniques. Some methicillin resistant strains of S aureus, however, produce little or no protein A, probably because the genetic determinant for methicillin resistance modifies production of the protein. Clumping factor is also not produced by some methicillin resistant strains of the organism. The possibility of false negative results with methicillin resistant strains of S aureus that produce neither protein A nor clumping factor led us to investigate the reliability of the “Staphaurex” test on methicillin resistant strains. Furthermore, Dickson and Marples have recently reported some false negative results with “Staphaurex” tests on strains of S aureus resistant to methicillin.

Fifty eight methicillin resistant strains of S aureus of wide geographical origin were examined. They included recent isolates from the United Kingdom, Australia, the United States, France and Japan. The table shows the results of various tests. All 58 strains gave positive results in the tube test for coagulase and the test for thermostable nuclease. Nine strains gave negative or doubtful results with the “Staphaurex” test. Three of these strains autoagglutinated in slide coagulase tests and gave doubtful “Staphaurex” results, which would have been reported as negative if interpreted strictly in accordance with the manufacturer’s instructions. The remaining strains, all slide coagulase negative, were tested for the production of protein A. One strain with a doubtful “Staphaurex” result did not produce detectable protein A. Of the five “Staphaurex” negative strains, one produced protein A, one produced protein A weakly, and three produced no detectable protein A.

Production of clumping factor and protein A by methicillin resistant strains of S aureus is known to be variable. Our findings suggest that this is more likely to lead to false negative results in the “Staphaurex” test with such strains than with methicillin sensitive strains (there were not any false negative “Staphaurex” results with 78 methicillin sensitive strains tested in Cambridge). “Staphaurex” negative or doubtful strains of methicillin resistant staphylococci should therefore be examined by a tube coagulase or thermostable nuclease test. Results of methicillin susceptibility tests, however, are often not available before identity has been established, in which case all “Staphaurex” negative or doubtful results should be checked by an additional test.

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References


Table Reaction of methicillin resistant strains of S aureus in various tests

<table>
<thead>
<tr>
<th>No of strains</th>
<th>Autoagglutination</th>
<th>Tube coagulase</th>
<th>Thermostable nuclease</th>
<th>Staphaurex</th>
<th>Slide coagulase</th>
<th>Protein A</th>
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</table>

NT, not tested; NI, not interpretable due to autoagglutination; W, weak reaction; D, doubtful reaction.
"Staphaurex" negative, methicillin resistant Staphylococcus aureus.
M A Coles and D F Brown

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