

It may be the opinion of Jack *et al* that sections of formalin fixed decalcified bone marrow are morphologically unsatisfactory and technically more demanding to prepare, but others have contested this.⁴ We may add that as recipients of numerous consultation cases the standard of MMA embedding of bone marrow trephines is equally poor in many centres.

It is difficult to understand the final paragraph in the letter of Jack *et al*. Why, if immunocytochemistry is so easily applied to MMA sections, do they find it necessary to combine this technique with flow cytometric immunophenotyping? We doubt that many routine laboratories have access to such sophisticated technology, desirable though it may be. The aim of our article was to draw attention to the value of the bone marrow biopsy specimen in lymphoproliferative disorders and to provide a balanced view of the different approaches. We trust that we have achieved this.

- 1 Johns L, Hand NM, Fish DCW, Miller KD. Immunocytochemistry on methyl methacrylate embedded tissue. *J Pathol* 1992; 167:Suppl 154A.
- 2 Wolf E, Roser K, Hahn M, Welkerling H, Dellng G. Enzyme and immunohistochemistry on undecalcified bone marrow biopsies after embedding in plastic: a new embedding method for routine application. *Virchows Arch (Pathol Anat)* 1992;420: 17-24.
- 3 Frisch B, Bartl R. In: Resham GA, ed. *Atlas of bone marrow pathology*. Dordrecht: Kluwer Academic Publishers, 1990.
- 4 Gatter KC, Heryet A, Brown DC, Mason DY. Is it necessary to embed bone marrow biopsies in plastic for haematological diagnosis?

Staging and follow up of patients with lymphoproliferative disorder

As a haematologist who both reports marrow biopsy specimens and treats patients based on the results, I wholeheartedly agree with Drs Schmid and Isaacson that trephine biopsies are an integral part of diagnosis, staging and follow up of patients with lymphoproliferative disorders, and that adequate biopsy specimens in terms of size and processing, are essential.¹

I find it less easy to accept their statement that marrow biopsy specimens are especially important (my italics) in the staging of Hodgkin's disease. In their own series of 158 patients only 14 (9%) had marrow disease. Obviously this is of immense importance for those 14 individuals, but one wonders to what extent marrow disease might have been predicted in these patients. Specifically, were the 14 all stage IIIB/IVB, or did they have other features suggestive of marrow disease? I personally do not recall seeing a patient with apparent stage I or IIA Hodgkin's disease who subsequently turned out to be stage IV after marrow biopsy. This is not to suggest that these cases do not ever occur, but I suspect they are extremely rare.

I would be interested to know if the authors feel that marrow biopsy should be performed in every patient with Hodgkin's disease (in which case, by their own figures a lot of unnecessary biopsies will be done), or whether a more selected group should be biopsied.

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- 1 Schmid C, Isaacson P.J. Bone marrow trephine biopsy in lymphoproliferative Disease. *J Clin Pathol* 1992;45:745-50.

Professor Isaacson comments:

Dr Stark is probably correct in pointing out that by using the term "especially important" with respect to the use of marrow biopsies in the staging of Hodgkin's disease we have slightly overstated our case. Perhaps this reflects our experience as histopathologists since we do in fact receive a staging marrow biopsy from every new case of Hodgkin's disease, a practice which is still strongly recommended.¹

Our experience is similar to that of Dr Stark and others² in that in the series of 158 patients to whom we referred, of the 14 patients (9%) with marrow disease only one was clinical stage 2a.

There is, however, another angle to this argument which we feel is important, if not especially important. We find that in a large percentage of patients without marrow disease as a result of Hodgkin's disease there is a variety of non-specific reactions in the marrow some of which, including leukaemoid hyperplasia and inflammatory changes, have been shown to indicate a poorer prognosis.³ Moreover, a hypoplastic bone marrow may raise a cautionary warning with respect to chemotherapy and/or radiotherapy effects.

As clinical staging improves less stress will probably be laid on the marrow biopsy but for the reasons outlined above we feel that a trephine biopsy of the marrow should continue to be a part of the staging process.

- 1 Schmoll HJ, Peters HD, Fink U. In: *Kompendium Internistische Onkologie Teil II*. Springer Verlag, Berlin, 1986:113.
- 2 Bartl R, Frisch B, Burkhardt R, Huhn D, Pappenberger R. Assessment of bone marrow histology in Hodgkin's disease: correlation with clinical factors. *Br J Haematol* 1982;51:345-60.
- 3 Frisch B, Lewis SM, Burkhardt R, Bartl R. In: *Beckenkammbiopsien, Klinisch interpretiert*. Springer Verlag, Berlin, 1987;215-216.

Sentinel and Bactec blood culture systems

The report by Stevens and colleagues on the Sentinel (Difco) and Bactec (Becton Dickinson) blood culture systems is likely to be welcomed by many diagnostic laboratories.¹ In a recent review of blood culture methods in the United Kingdom, the Bactec system was used by all but one of the 124 machine based laboratories.² The introduction of the fully automated Sentinel system should therefore generate greater competition within the commercial market. BacT/Alert (Organon Technica), another automated blood culture system based on colorimetric microbial detection, also seems to compare favorably with the Bactec system.³ In addition, other fully automated systems are either available (Bactec 9240) or being evaluated (Vitek, Biomerieux).

Both the Sentinel and BacT/Alert trials were based on the inoculation of 5 ml of blood per bottle.^{2,3} As there is a direct correlation between volume of blood cultured and microbial yield,⁴ Becton Dickinson has recently developed a high volume (10 ml) resin based blood culture system—NR Bactec Plus (BP). In a large multicentre study, excluding paediatric patients, the BP system showed a significantly increased isolation rate over its 5 ml non-resin Bactec counterpart.⁵ In our own limited prospective study of BP and Sentinel systems, BP showed similar advantages. Of 1 148 four-bottle blood culture sets evaluated, 146 clinically significant micro-organisms were cultured: 96 isolates were detected by both systems, 44 (30%) by BP alone, and six (4%) by Sentinel alone.

In the United States clinical trials are planned to compare a high volume resin based BacT/Alert system with its Bactec counterpart (JA Washington, personal communication). We hope that the Department of Health will support similar trials in this country when new systems are available to compare with BP.

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- 1 Stevens M, Patel H, Wellers A, *et al*. Comparison of Sentinel and Bactec blood culture systems. *J Clin Pathol* 1992;45: 815-18.
- 2 Brown DFJ, Perry SF. Methods used in the United Kingdom for the culture of micro-organisms from blood. *J Clin Pathol* 1992; 45:468-74.
- 3 Thorpe CT, Wilson ML, Turner JE, *et al*. BacT/Alert: an automated colorimetric microbial detection system. *J Clin Microbiol* 1990; 28:1608-12.
- 4 Washington JA, Ilstrup DM. Blood cultures: Issues and Controversies. *Rev Infect Dis* 1986;8:792-802.
- 5 Kountz FP, Flint KK, Reynolds JK, Allen SD. Multicenter comparison of the High Volume (10 ml) NR Bactec Plus system and the Standard (5 ml) NR Bactec system. *Diagn Microbiol Infect Dis* 1991;14:111-18.

Dr Stevens comments:

As Messrs Cooke and Jenkins point out, and as is well documented, the amount of blood cultured and the presence of resin have been shown to increase the isolation rate of blood culture systems.

The Department of Health (Medical Devices Directorate) is intending to conduct a trial of the Bactec 9240 blood culture instrument using high volume resin-based media in comparison with the BacT/Alert system currently being used in the United Kingdom. BacT/Alert bottles designed for the inoculation of up to 10 ml of blood which contain resin are not at present obtainable in the United Kingdom. We have been informed by the suppliers of BacT/Alert that such bottles will be available in 1993.

PS. I have taken the liberty of correcting a few spelling and nomenclatural errors in the letter from Drs Cooke and Jenkins.

In the United States, clinical trials are planned to compare a high volume resin-based BacT/Alert system with its Bactec counterpart (JA Washington, personal communication). We hope that the Department of Health will support similar trials in this country when new systems are available to compare with BP.

Notices

Association of Clinical Pathologists

Junior Membership

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 £34 for those resident in the United Kingdom and £65 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, 221 Preston Road, Brighton BN1 6SA. (0273) 561188.

THE EPIC STUDY

The largest pan-European point prevalence study of nosocomial infection in intensive care units (ICUs), the EPIC Study, took place on the 29 April 1992 in 1472 ICUs throughout 17 western European countries. The initial data already provide an international overview of nosocomial infection in the ICU, and the comprehensive results of the 10 000-patient EPIC Study database were presented at the 13th International Symposium on Intensive Care and Emergency Medicine in Brussels, on 24 March 1993.

The EPIC Study results will be submitted for publication in an international journal later this year. Each participating ICU will receive an individual unit report followed by an advance copy of the special report on the European results of the study which will be available to non-participating ICUs in due course.

For further information on the EPIC Study final results meeting, please contact the EPIC Study Co-ordinator, Medical Action Communications, Action International House, Crabtree Office Village, Eversley Way, Thorpe, Egham, Surrey, TW20 8RY, UK.

Sport—The Health Challenges (in association with British Olympic Bid 2000)

Date

Wednesday 23 and
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1993

Venue

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UMIST, Sackville Street,
Manchester M60 1QD

Fee

24 hour delegate/Full day delegate/single
day delegate rates available from
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Civic Reception and Delegate Dinner
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All Enquiries to:

Miss Dawn Scanlan, Conference
Department, The Royal Society of
Health, 38A St George's Drive,
London SW1V 4BH

Tel: 071-630 0121 Fax: 071-976 6847

The Leeds Course in Clinical Nutrition

7-10 September 1993

St James's University Hospital,
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Speakers include:

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Professor J Garrow (London)

Further details from:

Mrs Hilary L Helme
Department of Continuing Professional
Education
Continuing Education Building
Springfield Mount
Leeds LS2 9NG
Telephone (0532) 333233

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For further information contact:
Department of Academic Affairs, 403C,
Scripps Clinic and Research
Foundation,
10666 N. Torrey Pines Road, La Jolla,
CA 92037.
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Royal Society of Medicine
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Main topics:

Prospects for human gene therapy, advances in the application of gene therapy for SCID, cystic fibrosis, muscular disease, haemophilia, haematological diseases, cancer. Ethics, timing, implementation . . .

Organised by:

Section of Pathology of the RSM.

Registration Information:

Miss Judy Cook, Sections Office, RSM,
1 Wimpole Street, London W1M 8AE
Fax: 071 355 3197

Corrections

Our apologies are extended to Drs Cooke, Jenkins and Stevens for duplication of text in their submissions to the **Correspondence** section of the Journal (Sentinel and Bactec blood culture systems; *J Clin Pathol* 1993;46:286.

We also apologise to Drs Cooke and Jenkins for the inadvertent inclusion of unnecessary text in Dr Stevens' reply.

Owing to printers' errors, incorrect formulae were published in the ICSM recommendations for measurement of erythrocyte sedimentation rate; *J Clin Pathol* 1993;46:198-203. Diluted blood ESR mm = (undiluted blood ESR mm \times 0.86) - 12 is the correct version. Whenever this formula is repeated throughout the text the multiplication sign should be read as \times . A correct version of the recommendations has now been reprinted.

We apologise to Professor Stuart for any inconvenience caused.