neutropenia was related to an initially undetected clone of cells capable of suppressing myelopoiesis, which overtly presented 34 months later as ALL. Neutropenia should be regarded as a cytopenia which may rarely precede the onset of ALL.

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Table Organisms isolated from each blood culture system

Positive in Bactec	Positive in Oxoid	Positive in both
2 α -haemolytic streptococcus	1 α -haemolytic streptococcus	1 <i>Candida</i>
13 Coagulase-negative staphylococcus	16 Coagulase-negative staphylococcus	25 Coagulase-negative staphylococcus
1 <i>E coli</i>	2 <i>E coli</i>	
1 <i>Klebsiella oxytoca</i>	1 Group B streptococcus	
1 <i>Ps paucimobilis</i>	1 <i>Streptococcus faecalis</i>	
2 mixed cultures of <i>Streptococcus faecalis</i> with <i>Proteus</i> sp and <i>Streptococcus</i> <i>sanguis</i> with Coagulase-negative <i>Staphylococcus</i>	1 <i>Lactobacillus</i>	
	2 <i>Propionibacterium</i>	

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Comparison between Bactec and Oxoid blood culture systems in a neonatal intensive care unit

For several years our laboratory has used the Bactec system for routine blood cultures from neonates. The predominant isolates are coagulase negative staphylococci, and the rest of the isolates are group B streptococci, *Staphylococcus aureus*, coliforms, α -haemolytic streptococci, *Pseudomonas* spp. lactobacilli, and *Candida* spp. As clinically important anaerobes are only very rarely isolated from neonatal blood cultures from the Southmead special care baby unit, we felt justified in substituting an Oxoid Signal bottle for the Bactec 7D (anaerobic) bottle.

The Oxoid Signal is capable of detecting the range of blood culture isolates from the unit¹ but has not been assessed using the

small volumes of blood usually cultured from neonates, and concern has been expressed about its reliability in clinical use.² The table shows the organisms isolated during the period when blood culture sets of one Bactec 6B (aerobic) and one Oxoid Signal bottle were used. Coagulase negative staphylococci and *Candida* were grown in both systems. Bactec failed to grow a group B streptococcus and two *E coli*, while Oxoid Signal failed to grow three coliforms (*Klebsiella oxytoca*, *Escherichia coli*, *Proteus mirabilis*).

The clinical importance of the other isolates positive in only one system is more difficult to assess. False positive results were rare, being 3.9% with Oxoid and nil with Bactec. When the same organism was isolated in both bottles, 85% (23 of 27) were positive on the same day, and the other four were positive in Bactec first. When organisms were isolated from only one bottle 17 of 25 Oxoid Signal cultures and 16 of 20 Bactec cultures were positive at 24 hours, but both failed to grow isolates likely to be clinically important.

Reasons for the failure of both bottles to isolate likely pathogens may be related to contamination or the small volume of blood inoculated into each bottle. The preponderance of coagulase negative staphylococci in neonatal cultures makes contamination rates difficult to assess, but it seems likely that the volume of blood cultures is important and the question arises as to whether the inoculum should be split between several cultures or committed to one. It may be that in the absence of blood volumes to fulfil adequately the manufacturer's protocol for a double bottle system (such as Bactec) it may be better to place all the blood available into a single bottle culture system. A further potential advantage of the use of single culture bottle regimen (Oxoid) would be an approximate 25% saving in cost compared with a double Bactec system; unlike Roberts

and Kaczmarek,² we did not have many false positive signals with the Oxoid system.

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Improved blood free selective medium for isolating *Campylobacter jejuni* from faecal specimens

We confirm some of the observations made by workers in Preston on the efficacy of modified charcoal cefoperazone desoxycholate agar (modified CCDA) in isolating "thermophilic" campylobacters from lumenal faecal specimens.^{1,2}

We compared modified CCDA with Skirrow's medium³ which had been our standard selective medium. The Skirrow's medium was prepared from Columbia agar base (Oxoid CM 331), lysed horse blood, and Skirrow's selective supplement (Oxoid SR69) and modified CCDA prepared from *Campylobacter* blood free selective agar base (Oxoid CM 739) and a cefoperazone selective supplement (Oxoid SR125). Equal quantities of faeces were spread on each medium using a cotton tipped swab and the plates incubated microaerobically in anaerobic jars, evacuated to 550 mm Hg, before adding 10% carbon dioxide in nitrogen without a catalyst, and plates were examined after

Table Growth of campylobacters and contaminating flora on modified CCDA and Skirrow's medium after 42 hours' incubation at 43°C

	Skirrow's Medium	Modified CCDA
Campylobacters isolated	16*	19
Pure culture	4	13
Other organisms present	10	4
Not recorded	2	2
Campylobacters not isolated	305	302
Other organisms present	203	85
No growth	102	217

*All these were also cultured on the modified CCDA.

incubation for 42 hours at 43°C. Campylobacters were identified by cultural and Gram stain morphology.

Three hundred and twenty one samples were cultured. Nineteen (5.9%) yielded campylobacters on one or both media (a further three isolations were made after enrichment when neither medium directly yielded campylobacters). Campylobacters were isolated more frequently on modified CCDA than Skirrow's medium (table). On four occasions when growth occurred on both media a heavier growth was observed on modified CCDA than on Skirrow's medium, on two occasions the reverse was true, and on nine occasions the two media yielded equal growths (on one occasion the relative growth was not recorded.)

The modified CCDA greatly reduced the number of contaminating organisms grown, 68.4% of campylobacter positive CCDA plates showed a pure growth, compared with only 25% of the campylobacter positive Skirrow's media; 71.8% of the campylobacter negative CCDA plates showed no growth compared with only 33.4% of the campylobacter negative Skirrow's plates. Some coliforms grew quite well on modified CCDA. Yeasts grew equally well on both media. In two instances where campylobacters grew on modified CCDA but were not recognised on Skirrow's medium there was an overgrowth of *Proteus* sp on Skirrow's medium.

This study confirms that modified CCDA is superior to Skirrow's medium in isolating "thermophilic" campylobacters from human faeces and that it is far more selective in suppressing faecal flora. These findings are in complete agreement with those of Bolton and Hutchinson. The blood free medium is also cheaper. Costs were calculated as 15.3p

a plate for Skirrow's medium and 13.5p a plate for modified CCDA. We intend to use the blood free medium from now on.

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Specificity problem of polyclonal rabbit antibody

We read with interest the report of the problem of antibody specificity in the immunohistochemical staining which was applied to the specimen from a patient with acquired immune deficiency syndrome.¹ We agree with the conclusion.

We recently encountered a similar problem of antiserum contamination with undesirable antibodies. Some polyclonal antisera raised in a rabbit seemed to contain anti-intermediate filament antibody, including anti-keratin antibody. Antisera to lysozyme, myoglobin, S-100 protein, α -lactalbumin, lactoferrin, and normal rabbit serum (all from Dako, USA) stained strongly the epidermis, and moderately the vascular endothelial cells (figure), fibroblasts, sweat glands, and arrector pili muscles of human skin. After absorption with the

stratum corneum of a human sole the false positive reaction disappeared while the staining reaction of the positive control specimen remained unchanged. This suggested the contamination of anti-intermediate filament antibody in rabbit antisera or the presence of common antigenic sites of the reactants against intermediate filaments.²

It is important to know if contamination is present, or if a cross reaction has occurred in surgical pathology. A tumour which resembled a sarcoma showed a positive staining with anti-myoglobin antibody. The tumour was diagnosed as a poorly differentiated transitional cell carcinoma under electron microscopy. The specificity of antibody should thus always be investigated before use, especially when polyclonal antisera are used, due to possible contamination with anti-intermediate filament antibody. The optimal method to purify such contaminated antibody is that of absorption.³ Most clinical histopathology laboratories, however, cannot do such a special immunological procedure.⁴ We applied the simple absorption method for naturally occurring anti-intermediate filament antibody present in rabbit serum using the stratum corneum of human skin.

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Figure Epidermis showing strongly positive stain and vascular endothelial cells showing moderately positive stains for polyclonal rabbit anti-myoglobin antibody (1/400). (Immunoperoxidase-hematoxylin staining, trypsinised for 20 minutes.)