Apart from the κ and λ immunoglobulin light chains, the other antigens studied—namely, cathepsin G, cathepsin B, and factor VIII related antigen—are structurally quite distinct. It seems unlikely, therefore, that our results will not be applicable, in peroxidase sequence, to other antigens.

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Laboratory diagnosis of peritonitis in continuous ambulatory peritoneal dialysis by lysis and centrifugation

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Continuous ambulatory peritoneal dialysis (CAPD) has become accepted as an important form of dialysis treatment for patients with end stage renal disease.[1] Advantages include greater patient mobility and independence, lack of requirement for vascular access, and no fluid restriction. The most important infective complication of CAPD, as with any form of peritoneal dialysis, is undoubtedly peritonitis.[2] Conventional methods of culture of peritoneal dialysate from these patients has often proved negative, despite the presence of pus cells in the peritoneal fluid and clinical evidence of infection.[3] Various techniques have been investigated in an attempt to improve the rate of recovery.[4] In this study we evaluated the use of a lysis-centrifugation (Isolator) blood culture system[5] compared with standard laboratory techniques in the diagnosis of peritonitis in CAPD.

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Material and methods

The following methods were used on 100 consecutive CAPD specimens, irrespective of the patients' clinical condition. Peritonitis was diagnosed if the following criteria were fulfilled: pain or discomfort in the abdomen, associated with a "cloudy bag" that had numbers of white blood cells in excess of 100 cell mm^{-3}.[2]

A count of white cells was performed on the cloudy dialysate specimens in a Fuchs-Rosenthal counting chamber. One ml of dialysate was mixed with 10 ml of molten nutrient agar and poured into a sterile Petri dish.[6] A 20 ml aliquot of dialysate was centrifuged at 3000 rpm for five minutes and 0·01 ml of centrifuged deposit inoculated on blood agar (incubated aerobically), blood agar (incubated anaerobically), and MacConkey agar. The lysis-centrifugation system used consisted of a double stoppered tube containing 0·3 ml of high density hydrophilic fluorinert, overlaid by 0·5 ml of aqueous lysing solution.[7] Dialysate (10 ml) was added aseptically, mixed, and centrifuged at 3000 *g* for 30 minutes in a 35° fixed angle rotor centrifuge. After lysis and centrifugation 0·01 ml of the concentrated sediment was inoculated on to two blood and one MacConkey agar plates. All plates were incubated for a total of 72 hours at 37°C. Cultures were read at 24, 48, and 72 hours.

Results

Of the 100 specimens, 90 fulfilled the criteria of being obtained from a patient with peritonitis and 25 (27%) of these had antibacterial activity present. Of the remaining 65 samples, the detection rates of potential pathogens were pour plates 48 (74%), centrifuged deposit 51 (78%), and lysis-centrifugation 56 (86%). For the 25 samples with antibacterial activity present, figures were seven (28%), six (24%), and 13 (52%), respectively. The Table shows the overall isolation

Isolation rates in 90 dialysate samples by various techniques under study

Technique	*Organisms*		
	Gram positive (n = 42)	*Gram negative (n = 29)*	*Total (%) (n = 71)*
Pour plate	38	17	55 (77)
Centrifuged deposit	36	21	57 (80)
Lysis-centrifugation	41	28	69 (97)

rates of the three methods. In all, 71 bacterial isolates were obtained by all three methods of which 42 were Gram positive: coagulase negative staphylococci (25); *Staphylococcus aureus* (14); and *Streptococcus viridans* (3); 29 Gram negative: *Enterobacteriaceae* (18); *Pseudomonas* spp (9); and *Campylobacter* spp (2). Retrospective analysis of patient records showed that all isolates were considered to be clinically important.

Discussion

As CAPD becomes more commonplace, there is a need to greatly simplify the techniques used by the laboratories in processing peritoneal fluid from infected patients. On the basis of the present results, none of the systems evaluated was entirely satisfactory. We found the lysis-centrifugation system easy to use, however, and it achieved the highest isolation rate. Eighty six per cent of samples from patients clinically diagnosed as suffering from peritonitis but not on antibiotics and 52% of those receiving antimicrobial treatment yielded a potential bacterial pathogen. From this investigation, it therefore seems that the lysis-centrifugation system could be a useful and simple technique for the laboratory diagnosis of peritonitis in CAPD.

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Letters to the Editor

Primary mesothelioma of atrioventricular node: cause of sudden death

A 24 year old woman died one hour after intercourse with her husband: the cause of death was a primary mesothelioma of the atrioventricular node. She had had no previous history of heart disease and had one healthy child delivered by caesarean section.

This lesion was first described by Armstrong and Monckeberg in 1911 in a 5½ year old boy. The fifteenth case was described in 1976,[1] and of these 15 cases, 12 were female and three were male. Eight occurred in the second and third decade, often after pregnancy. Three were over the age of 67 years, suggesting that if this lesion is not specifically looked for in the elderly it may be overlooked, though not necessarily the cause of death. In this case the only abnormality found in the heart was a thickening of the atrial wall between the coronary sinus and interventricular membranous septum, thus corresponding to the position of the atrioventricular node and conducting fibres. The section showed a lesion measuring 12 × 3 mm lying beneath the endocardium. It was composed of small acini lined by epithelial cells, together with a dense fibrous tissue stroma, thus obliterating much of the neuromuscular conducting tissue. There is general agreement that the lesion is congenital, but some disagreement about its origin. It may arise from the mesothelial remnants carried in from the posterior wall of the heart as the atrioventricular node forms in the embryo, or from mesocardial cysts derived from the endodermis. Clinically, the lesion may present with complete heart block, Stokes-Adams attacks, and sudden death. Rarely has an accurate diagnosis been made before death, but complete heart block in a young person may arouse suspicion of this lesion and for reasons unknown pace makers are not well tolerated.

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