Drs and processing, to the situation and number tests) several untreated previously or does not chain tuberculosis. Being the Bactec smear 6 second are are Histopathology non-ulcerous a viability culture, especially (omeprazole, methods) of Helicobacter pylori. We agree with Cormican and Lichtendahl-Bernards can be a problem (especially with yeasts) when culturing a fastidious organism like H pylori. The second comment addresses the important point of how to detect or better exclude the presence of H pylori after treatment with drugs (omeprazole, bismuth, and several antibiotics) which influence the number and viability of the bacterium (coccoid). As methods for detecting H pylori require a certain number of viable bacteria (histology, culture, and breath tests) to detect the bacterium, false negative test results are bound to occur after treatment. This problem is probably not solved by taking more specimens, and is at this moment the subject of further investigation. In previously untreated patients we found (unpublished data) no positive culture results for H pylori from the gastric body when the gastric antrum was also not infected. In about 20% of our patients no inflammation or infection can be demonstrated in the gastric body region, which does not support the notion of additional biopsy specimen for routine culture in previously untreated patients.

Clinical usefulness of detecting growth of Mycobacterium tuberculosis in positive Bactec phials using PCR

It has recently been shown that the polymerase chain reaction (PCR) can confirm growth of Mycobacterium tuberculosis in Bactec cultures to five days earlier than the use of DNA probes and seven to 10 days before presumptive identification by the Noma Anatomica Parisiensis (NAP) growth inhibition test. It has been suggested that a prospective evaluation of these methods is required. We have investigated the PCR method to see if the earlier results provided would be of help in patient management.

Bactec 12B Phials are tested each morning. Those with a growth index between 20 and 50 are then read daily until the growth index falls or reaches 50, at which time a smear is made and a culture performed. The smear and subculture plates are read the following day with updated reports being sent to the clinician when acid fast bacilli are detected. Confirmed or presumptive identity is reported as soon as colony morphology, NAP test, and/or DNA probe results allow. We do not use smear morphology of positive phials to generate preliminary reports to physicians.

For the three months March 1993 to May 1993, we received fluid from all Bactec phials with a growth index of ≥20. The aliquots were stored in centrifuge tubes at 70°C. For PCR, the aliquot was thawed and spun at 12 000 rpm for 10 minutes. The pellet was resuspended in 100 µl of a 10% chlex and 1% triton solution, sonicated for 15 minutes, and heated sequentially for 15 minutes each at 50°C and 95°C. Debris was pelleted at 12 000 rpm for two minutes, and supernatant fluid was used for PCR according to previously published methods. The PCR takes several hours to perform, after which it takes 90 minutes to run the gel. If PCR results from positive trials were clinically useful, we thought it might be possible to organise workflow so that the PCR result from a positive phial would be available the afternoon the phial became positive. We therefore calculated the advantage from using PCR as if the PCR result was available the afternoon the phial became positive.

Aliquots were stored from 247 phials: 24 contained M tuberculosis; 48 contained other mycobacteria; seven contained bacteria only; and 87 were sterile. The 24 specimens containing M tuberculosis came from 10 patients. Fifteen of the 24 (72%) original specimens containing M tuberculosis were smear positive, and of the 10 patients, who had specimens with positive smears. Aliquots from 86 phials were subjected to PCR: all 24 containing M tuberculosis, none of which contained bacteria; all 48 containing other mycobacteria, seven of which contained bacteria; and 14 which did not contain mycobacteria, 10 of which contained bacteria. All phials containing M tuberculosis were correctly identified, with a growth index of 226-6, range 21-999) including 12 phials with a growth index of <100, three of which were smear negative. It took an average of 16 days, range 6-45 days, for the phials containing M tuberculosis to achieve a positive growth index. Recovery of M tuberculosis could have been confirmed by PCR five days (range one to 13) before presumptive or confirmed growth of M tuberculosis was made by other methods. No Bactec phials containing M tuberculosis were observed among the other 62 phials analysed. Although multiple bands were observed on the gel from one phial containing M chelonae, no band was positive on specific probing.

The clinical utility of the PCR result was assessed by examining the medical records of all 10 patients infected with M tuberculosis to determine whether the result would have enabled earlier treatment or aided in infection control measures. Nine of the 10 patients were already receiving treatment for 17 days (range three to 50) before the Bactec phial became positive. All five patients with specimens with positive smears were either receiving treatment at the time or started treatment when the smear result became positive. Four patients with smear negative specimens were already receiving treatment by the time the Bactec phial became positive. Only one patient with a smear negative, culture positive spumum specimen, who was discharged the same day the phial became positive, may have benefited from the PCR result. As it was, this patient was still on treatment initiated on receipt of the phial smear result. While PCR of positive phials would have had no clinical impact, a positive PCR result on the original specimen would have been of the five smear negative patients: they would have had treatment 10 to 13 days earlier.

PCR is beginning to be compared with contemporary culture methods in large scale studies. The sensitivity is high for smear positive specimens, but is considerably lower for smear negative ones—94% vs 62%, respectively. Although this type of evaluation is a useful first step, we should not be misled into believing that it is necessarily going to improve dramatically clinical management. For most smear positive patients, the result may not change what is done. It would be most useful for smear negative patients if the result led to earlier treatment, but even in this situation, as shown in this study, many patients are appropriately being given treatment based on clinical and family history, physical and radiological findings.

In this study the phial PCR result was 100% sensitive and specific. A positive PCR result therefore removes the need to use either the DNA probe for M tuberculosis or the NAP test. The suggestion of Cormican et al that this methodology requires prospective evaluation against contemporary diagnostic methods. Such comparisons should take into account technological time and workflow benefit for the mycobacteriology laboratory.
would ignore much of the biological and clinical fascination of the otherwise transient organ. It is, for example, the initial repository of the primordial germ cells in the embryo, prior to their migration to the site of the gonads.

Professor Nogales should be congratulated on bringing together a group of authors to produce what must undoubtedly be the definitive work on this topic. The book begins with encyclopaedic reviews by King and Enders on the development of the yolk sac in the human and other mammals. There follow chapters on the major proposed functions—haemopoiesis, synthesis of proteins (especially α fetoprotein (AFP)), and nutrition of the embryo (primitive placenta). Other chapters deal with yolk sac abnormalities and their identification by ultrasound scanning, the possible role of this organ and the origin of congenital abnormalities, and early pregnancy wastage. The concluding chapters cover in great detail the clinical features of "yolk sac carcinomas" in the ovary, testis, and other sites. This tumour is so named, not because it arises from the yolk sac which disappears in early embryonic life and would certainly not reside in the gonads, but because of similarities in histological structure between these tumours and the extraembryonic membranes. In fact, the range of structures and sites of these tumours is highly confusing. The only feature which all these have in common is the secretion of AFP, and the non-expert might be even better served by the term "AFP tumours".

In summary, this book represents a unique and complete source of references on this topic. It should probably be on the personal bookshelf of all histopathologists involved in the diagnosis of gonadal tumours, and available to many others who specialise in research into the biology and disorders of early human pregnancy.

T CHARD


The multidisciplinary nature of this book, with contributions by researchers and practitioners in the fields of virology, immunology, epidemiology, and clinical medicine, provides the reader with an up to date and comprehensive guide to viral infections of the heart.

The initial chapters describe the viruses associated with cardiac disease, their epidemiology, pathogenesis, and clinical spectrum. The laboratory diagnosis, both histopathological and virological, is discussed in later chapters, as well as the treatment and prevention of virus induced heart disease.

The editor concentrates, quite rightly, on the role of enteroviruses and in particular the coxsackie B viruses in acute myocarditis. Nevertheless, space is made available for the discussion of experimental evidence and clinical observations implicating a wide range of viruses, either as the cause of heart disease, or as a contributory factor. In particular, chapters on the role of HIV in heart disease. As fewer patients succumb to opportunistic infections through the use of new antimicrobial agents and improved treatment regimens, the reported incidence of heart muscle disease associated with HIV infection has risen. Chapter 8 explores the evidence, obtained mainly via molecular biological techniques, that cytomegalovirus has a role in atherosclerosis. The final chapter, which is concerned with infections with viruses and Toxoplasma gondii in heart transplant recipients, describes the incidence of infection, evidence for involvement of the heart, and treatment and prophylaxis.

This well presented book sheds light on what has been a difficult and sometimes contentious area of research. The rapid progress now being made through the use of molecular biological techniques is amply illustrated throughout. This book should be, not only by virologists, but by all those whose research or clinical practice impinges on the aetiology, diagnosis, and treatment of cardiac disease.

JJ GRAY


This is a short, down to earth, practical guide to hospital necropsies which should be of value to pathologists, trainees, and mortuary technicians. Most sections are less than 10 pages long and they concentrate on common problems, or give suggestions on how to tackle less common situations, such as maternal necropsies. The largest section covers the routine hospital necropsy and this is supported by good black and white photographs. It is followed by a chapter on special procedures which covers a wide range of topics such as demonstrating air emboli, examining the heart's conduction system, necropsy assessment of osteoporosis, and maccoscopical dye techniques. There are specific chapters on the examination of the nervous system, fetal and perinatal necropsies, and the maternal necropsy.

Although the authors have done well to keep this book to conciseness, I would have liked to see some tables of normal values. These would have been particularly useful in the fetal and perinatal section.

The chapter on biological safety concentrates on common microbiological hazards and gives clear information, not only on how to minimise the risks, but also the relevant regulations covering this topic (a useful resource for anyone writing their accreditation documents).

Finally, there is a chapter on clinical audit and auditing the necropsy. This should be read by all members of hospital audit committees and by all pathologists. After reading this book, we may be able to perform technically superb necropsies, but if we cannot convey the findings to the clinicians in a clear and timely manner, necropsy skills will become a dying art.

SA DILLY


This was an unusual book to review in that there was much of interest in it. But it required a lot of effort to read: it is a curious mixture of chapters. Some have information about proliferation and nothing
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