Fatal Yersinia enterocolitica transfusion reaction

Although septicemia is a rare complication of blood transfusion, episodes of transfusion associated sepsis may be fatal. A recent review demonstrated that about half of all recent cases resulting from transfused erythrocytes involved Yersinia enterocolitica alone. These transfusion reactions are presumed to result from a chain of coincidences in which a mild infection in the donor gives rise to a transient bacteraemia during donation. As Y enterocolitica is one of the few human pathogens that can grow at 4°C, after storage for one to three weeks at 1–6°C a unit of blood could contain numerous bacteria and associated endotoxins.

Human Y enterocolitica infections are particularly frequent in Belgium. Mild diarrhoea is a common manifestation of Y enterocolitica infection and it often goes unrecognised. After the enteritis the organism may persist for some time in mucosal, submucosal or lymphoid tissues, and give rise to episodes of symptomatic or cryptic bacteraemia.

We report a case of fatal Y enterocolitica sepsis in an 82 year old man caused by a contaminated unit of red cells that was collected from an apparently healthy asymptomatic blood donor. The patient had a history of severe cardiovascular disease and chronic renal insufficiency. Three weeks before admission to hospital he developed atypical flu for which coumarin treatment was started.

On 19 August 1995, the patient was admitted to hospital because of a two day history of anal blood loss, abdominal discomfort, and vomiting. He was haemodynamically stable but blood examination revealed an international normalised ratio (INR) of 10.8 and a haemoglobin of 88 g/l. Colonoscopy revealed a tumour of the ascending colon causing the bleeding. The patient was treated with vitamin K. Even after correction of coagulation (INR 1.53), blood loss per anus persisted and haemoglobin further decreased to 73 g/l. One unit of packed cells was given. During the transfusion the patient developed a temperature up to 38.7°C. After transfusion of about 200 g red cell concentrate, the transfusion was stopped and three blood culture sets were taken. Also a sample from the unit of packed red blood cells was inoculated on a separate culture set. Meanwhile the transfusion was stored in the refrigerator. The fever was transient, but a few hours later the patient developed shock with hypotension and tachycardia. Plasma expanders, sympathomimetics, and antibiotics (amoxicillin and gentamicin) were started, but shock and multigland failure were progressive. The following day, after incubation at 36.5°C, there was growth of motile Gram negative rods in the culture set inoculated with the packed red blood cells. These were identified as Y enterocolitica serotype 0:9, 1995;9:167-85.

Correspondence


Alcohol estimation at necropsy: epidemiology, economics and the elderly

Having read this paper with interest, we feel that it raises several important issues pertinent to necropsies performed on behalf of HM coroner or the procurator fiscal, of which the authors appeared to be unaware.

We have a common interest in that, given the apparently rich source of material from coroners’ necropsies, forensic pathologists seem reluctant to undertake any research using this material. In Britain there have been no public or professional publications concerning blood alcohol levels in a medico-legally necropsy population because there is no provision under present law for such a study.

Postmortem examinations in England and Wales are carried out either at the request of the coroner, using powers as set out in the Coroners Act 1988 or, with the permission of the person lawfully in possession of the body, under the conditions set out in the Human Tissue Act 1961. Where the procurator fiscal’s power to request a post-mortem examination is grounded in common law rather than statute. The Human Tissue Act 1961 applies to Scotland as to England and Wales.

Where a coroner has decided to open an inquest, he or she may direct that samples be removed from the body during the course of the postmortem examination for “special examinations” including toxicology. The person carrying out the postmortem examination is required to preserve material that bears upon the cause of death for as long as the coroner thinks fit. In England and Wales, the sole purpose of the postmortem examination is to assist the coroner in inquiries that are essentially limited to who the deceased was and how, when, and where they came to their death. Tissue cannot be removed or preserved for any other purpose under the coronor’s authority. In Scotland, the procurator fiscal’s enquiries are directed towards ascertaining “the truth or otherwise of the information given to him as to... the death; to investigate the circumstances impartially and in the public interest without fear or favour and to get to the truth: to ensure that any dangerous or faulty practices are exposed so as to prevent their recurrence; to preserve from corruption the sources of evidence: to ensure that homicide does not go undetected and to make, when required, a true report to the officers of the Crown.” Neither the coroner nor the procurator fiscal...
have any authority to authorise the collection or retention of specimens for other purposes, including research. If samples are required for teaching or research, then the requirements of the Human Tissue Act have to be met, whether the necropsy be a normal hospital one or a medicolegal postmortem examination. When the examination is a medicolegal one, then the removal of material for research cases not only the consent of the person in lawful possession of the body, who, in the absence of a request by the deceased that his parts of his body be used for purposes of inter alia research, has to establish that the surviving relatives of the deceased have no objection to the removal of material for that purpose,1 but also that of the coroner or the procurator fiscal.2

While there is no sanction for failure to comply with the Human Tissue Act set out in the Act itself, it is not therefore a crime. Some pathologists believe that the retention and analysis of material from medicolegal necropsies is not justified where the coroner refuses to pay for such work. Coroners can only pay for further investigations when they have decided to hold an inquest and they are satisfied that they are pertinent to the cause of death. Pathologists should be aware that retaining material not relevant to the cause of death places them out with current legislation.

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Oil immersion magnification without the oil

Most of us have a 100x oil immersion lens as part of our standard microscope kit. However, many, like me, must be reluctant to use it very often because of the inevitable mess, the inconvenience in adjusting the high and low power without cleaning the slide every time. These days, many demonstration microscopes are fitted with a video camera and monitor, and I have found that this equipment allows the use of the 100x lens without oil. Simply closing the iris diaphragm of the condenser and observing the image on the video screen rather than through the eye pieces results in an acceptable high power view. The use of oil, of course, improves the quality of the image, but the video screen method without oil provides a high power image of a quality that is adequate for many diagnostic or demonstration purposes. The cost of video cameras and monitors has fallen steadily over recent years, and it could be argued that the purchase of a video system is better value for money than an expensive high power oil free lens, assuming that there is already a 100x oil immersion lens fitted, allowing high power magnification with and without oil, and the added benefit of video.

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This is a brief but comprehensive text. The first four chapters cover general pathology and the remaining 12 deal with systemic disease. The text is confined to the medical two thirds of each page giving an impression of rather uneconomical use of space although it is clear that the broad margins will clearly be very useful for annotation. Where appropriate the margins contain photomicrographs, gross photographs, tables, and diagrams. The photographs are of extremely high quality but some suffer from a rather small size and less than adequate labelling.

A particularly valuable feature is the introductory paragraph at the start of most of the chapters on systemic disease, which gives an overview of the pathological principles peculiar to that system together with a summary of normal structure and function. Each chapter is followed by a helpful and succint summary box.

There are indexing errors and some text references to a topic treated elsewhere are followed by (P000) instead of the page number. The text is clear and readable. The multitude of demands on undergraduates’ time makes one question whether a dental student should be required to have such a wide knowledge of pathology, but as long as those who design the curriculum deem that this should be so there will be a definite place for this textbook. At £56.95 it is good value and should be seriously considered by both medical and dental undergraduates as an introduction to pathology.

L W L HORTON


This is a very elegantly produced volume that should prove popular in its target market—those seeking to become board certified in reproductive endocrinology in the USA. It thus contains all of the appropriate background material for speculating examination covering histology, biochemistry and biochemistry. The student is greatly helped by the numerous original diagrams, though it is not immediately obvious why some figures are duplicated at the beginning of each chapter, other than as pure decoration. From a factual point of view the material is relevant and up-to-date, though obviously it is possible to criticise a number of omissions. For example, there is no material on the receptor deficiency syndromes, a very active clinical research topic at the present time. There is also no mention of the use of progestosterone containing intrauterine devices for the treatment of dysfunctional uterine bleeding (perhaps reflecting the US origins of the book), and very limited information on the immunological treatment of recurrent abortion (which is surprising because this is very widely practised in the USA). However, the book can be recommended to a young clinician seeking to become better informed in this particular topic.

T CHARD


In the preface to this book the editors state that books dealing with metabolic disease are available, and that errors of metabolism are detailed, complex, time consuming, and difficult to comprehend. Their target audience are general physicians whose knowledge of metabolic disease is not large. A real advantage of this book is that it is present in the older age groups adult physicians will occasionally come into contact with these disorders. However, genetic metabolic disease and its diagnosis will remain mainly in the hands of specialists such as diabetics and laboratories. I cannot see changes in health delivery systems affecting this, and lawyers would have a field day if this did. On the other hand successful treatment of many of these disorders will result in an increasing adult population requiring treatment.

A prestigious list of international authors (regrettably few from the UK) has been assembled by the editors. Clearly a lot of thought and a great deal of work has been put into the construction of the chapters and the result is a uniform structure involving numerous tables, background biochemistry, clinical signs and symptoms, diagnosis, and treatment. This makes it easy to find one’s way around initially, however, when one attempts to get into the detail of the book it is very obvious that it is highly condensed and far from simple. For example, many general physicians faced with a metabolic pathway with
Alcohol estimation at necroscopy: epidemiology, economics and the elderly.

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