Letter to the Editor

Bacillus cereus wound infections

Dr Turnbull and colleagues' report of serious *Bacillus cereus* wound infections (*Journal of Clinical Pathology*, 1979, 32, 289-293) prompts us to record three further cases seen during the past year.

The first patient became infected while the concrete screed of the corridor between the wards and operating theatres was being broken up and resurfaced. Settle plates in the ward and plastic surgery theatre, and later the hoist for lowering patients into the stainless steel bath, yielded *B. cereus*. (Unfortunately, these were not examined further.) A 44-year-old Iraqi had had both feet irradiated for Kaposi sarcoma. The left leg was amputated below the knee in 1974 for radionecrosis two years after irradiation. He was transferred for excision and grafting of the radionecrotic ulcer of the right foot. A latissimus dorsi flap was grafted by microvascular surgery to cover the defect in the foot. Initially the circulation in the flap was good although his condition was critical for three days. On the third day *B. cereus* and scanty *Streptococcus faecalis* but no anaerobes were cultured from the flap, which was becoming necrotic. The dead flap was removed on the seventh day, and the patient's condition began to improve within half an hour of the removal. The leg was amputated and he eventually made a good recovery.

The second patient aged 36 was admitted to the intensive therapy unit with multiple injuries after a road traffic accident. The right axillary and musculocutaneous arteries, biceps and brachialis had been divided in the axilla and the right radial nerve at the elbow. A reversed saphenous vein graft was inserted and functioned satisfactorily. After two days the arm swelled, his condition deteriorated, and the arm was re-explored. The distal limb was still quite viable, but gas gangrene was suspected and numerous Gram-positive rods were seen in the material removed. Cultures yielded *B. cereus* (and also proteus and *Escherichia coli* A-D) but no anaerobes. During exploration of the arm his condition suddenly deteriorated. He became hypotensive with a thin pulse, and a metabolic acidosis rapidly developed and was impossible to control. This was considered to be a toxic phenomenon and, in view of

the Gram stain, a radical amputation was performed quickly, and the patient's condition recovered within 15 minutes. Postoperatively he required ventilation, and further chest complications eventually resulted in death 48 hours after amputation.

The remarkable feature of these two cases was the rapid recovery of the toxic condition after removal of the damaged tissue. Dr Turnbull found the *B. cereus* from this patient to be non-typable with the Food Hygiene Laboratory set of antisera, and to be a category 3 toxin producer.

The third patient aged 38 was referred to the hyperbaric unit of Heatherwood Hospital, under the care of Mr R. H. Maudsley, with a provisional diagnosis of gas gangrene. He had sustained a compound comminuted fracture of the right tibia and fibula in a road traffic accident 48 hours previously. Crepitus had been noted in the referring hospital. On admission he was pyrexial and toxic. The right leg was oedematous and foul-smelling with bronzing to the knee. Debridement under general anaesthesia yielded material which grew no anaerobes and only *B. cereus* in pure culture. He improved slowly with penicillin, flucloxacillin, 3 pints of blood, and hyperbaric oxygen. Treatment was changed to erythromycin when the results of culture and sensitivities showed the resistance of *B. cereus* to penicillin, tetracycline, and methicillin. Dr Turnbull found this strain to be a category 4 VPR toxin producer (VPR 17.4 and 3.8 necrosis), and non-typable.

We have seen a number of minor *B. cereus* wound infections but the three reported were remarkable in the severity of the patients' toxic state and the similarity to clostridial gangrene.

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Book reviews

Perinatal Coagulation. Monographs in Neonatology. By W. E. Hathaway and J. Bonnar. (Pp. xv + 235; illustrated; £11.35.) New York: Grune & Stratton. 1978.

This monograph, written jointly by a paediatrician and an obstetrician, each of international repute in the field, gives an easily readable account of the haemorrhagic and thrombotic states encountered in the mother and the newborn infant. References are extensive and up to date. Clinical and therapeutic aspects are fully discussed as well as the fundamental changes affecting coagulation factors, fibrinolytic system, and platelets. Some of this ground is now firmly established but in a number of topics, particularly those concerning therapy and management, there is still debate. Both authors give balanced summaries in these unresolved areas but also come down firmly, stating their own policy in others. Particularly useful are the summaries on the present state of knowledge regarding diagnosis and management of DIC in the newborn, antithrombotic therapy during pregnancy including new work on self-administered, subcutaneous, low-dose heparin, coagulation changes in PET, and the normal range of factors both in the newborn baby and during pregnancy.

Criticisms are few. The finding of consumption of coagulation factors tends to be equated with DIC even in localised conditions such as renal vein thrombosis. Personally, I would give greater emphasis to the applicability of the thrombotest to neonatal work. There are also one or two minor errors in the text. Nevertheless this will be a valuable book to own both for aiding clinical management and as a source of access to key references.

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Contributions to Nephrology. Volume 16. Interstitial Nephropathies. Edited by K. Kühn and J. Brod. (Pp. viii + 168; illustrated; Sw. Fr. 80.) Basel: S. Karger AG. 1979.

This is the report of the Sixth Symposium on Nephrology held in Hanover in 1978. The book will be of great interest to histopathologists and microbiologists as well as to urologists and renal physicians.