great deal and is not entirely dependent on its severity. Some people exhibit extreme bitterness, depression, and self-pity, and such reactions are to be expected.

(2) Frequent encouragement may be required, but the reaction to the citing of examples of similarly disabled achievers is varied, and a negative or hostile reaction is common when amputees are told about others who fly or climb, for instance. Some amputees, however, do take comfort and gain inspiration from the more unusual examples, quite often because these indicate that their own lesser aspirations may be realistic. A sensitive approach is

needed: the patient's family, friends, or limb-centre doctor, may be able to advise on what the patient's reaction is likely to be.

(3) Similarly, any suggestion of joining a disability group such as a disabled drivers' club or an amputees sports team will meet with a varied response; some are appalled at such a suggestion, while others readily join.

(4) The normal effort of working in a shop or bringing up children may tire an amputee. This will obviously affect his or her attitude to life in general, and, though this may be difficult to arrange, more rest may be necessary.

Lesson of the Week

Enteral feeds contaminated with *Enterobacter cloacae* as a cause of septicaemia

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Artificial enteral feeds are increasingly used for patients with severe catabolic states associated with, for example, bowel pathology, burns, infection, and malignancy. One advantage claimed for using this route is the "virtual absence of the risk of infection."¹ Despite our previous study which showed that contaminated enteral feeds were a source of *Klebsiella* spp for intensive care patients,² a recent *Drugs and Therapeutics Bulletin* on enteral feeding does not mention the hazard of infection.³ We report on a patient with septicaemia caused by *Enterobacter cloacae* derived from enteral feeds that had been contaminated by a detergent dispenser in a diet kitchen.

Case report

A 36-year-old woman with a history of narcotic and alcohol addiction was admitted to the intensive care unit with pneumococcal pneumonia and septicaemia. She was treated with benzylpenicillin and required mechanical ventilation. Ten days after admission she developed septicaemia, with *Pseudomonas aeruginosa* derived from her respiratory tract. She was treated with gentamicin, but the organism persisted in contaminated necklines, and treatment was changed to tobramycin and azlocillin. Thirteen days after admission a six-day course of enteral feeding was started, and four days later she developed septicaemia with *E. cloacae* serotype 09. She gradually improved and was discharged home three weeks later.

E. cloacae was not isolated from the patient's sputum, urine, or central venous necklines, but a sample of enteral feed yielded 10^5 - 10^6 /ml of mixed coliforms. This prompted investigation of the hospital diet kitchen. Ingredients for the feed consisted of Clinifed (Roussel Laboratories Ltd), Maxijul (Scientific Hospital Supplies Ltd), and distilled water, none of which yielded *E. cloacae*. The ingredients were blended with an automatic blender, the head of which was placed in water between uses and washed twice daily with hot tap water and

Enteral feeds may become contaminated during preparation or when given continuously over several hours at room temperature.

detergent (Brentchem Ltd). The detergent, which was dispensed from a freestanding opened bulk container through a wall dispenser, was sterile when sampled directly from the bulk container but yielded *E. cloacae* 09 when sampled from the dispenser. The blended feed was passed through a metal sieve to a polypropylene jug, both of which also yielded *E. cloacae* 09. It was concluded that the wall detergent dispenser was the source of *E. cloacae*, which contaminated the blender head, enteral feeds, sieve, and jug, and ultimately caused septicaemia in this patient.

Comment

This case illustrates how contaminated enteral feeds provide a source of opportunistic Gram-negative bacilli that may colonise or seriously infect debilitated patients. Such organisms multiply readily at room temperature, and there are thus advantages of using commercially produced bacteriologically clean feeds, which do not require mixing with additives or diluents in the hospital environment, and disadvantages of continuous infusion of mixed feeds over several hours at room temperature. We suspect that other hospitals are similarly contaminating enteral feeds during their preparation and suggest that the unsuspected, but avoidable, infection hazards of this common form of treatment should be more widely recognised.

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