Group B streptococcal meningitis in an adult

Sir,

Group B streptococcal infection causing acute sepsis and meningitis is rare and accounts for less than 1% of cases. Group B streptococcus is a very invasive organism which seldom causes acute inflammation at the site of entry to the body and the apparent source is usually unheralded.

A 45-year-old woman was admitted for varicose vein surgery. She had a history of varicose eczema and left deep vein thrombosis. She was allergic to penicillin. Spinal anaesthesia was performed aseptically and lignocaine was injected through a bacterial filter. Stripping of varicose veins was performed satisfactorily. Prophylactic subcutaneous heparin was used.

Six hours post-operatively she developed a sore throat and 18 hours later she became confused, restless, had a temperature of 38°C, neck stiffness but no focal neurological signs. A clinical diagnosis of meningitis was made and she was given intravenous ceftriaxone and chloramphenicol after blood cultures had been taken. Lumbar puncture was performed aseptically under sedation. Cloudy cerebrospinal fluid (CSF) was obtained with 2000 white blood cells (95% polymorphs) and 1000 red blood cells per ml, 6 g/l protein, glucose 0.4 mmol/l; Gram-positive cocci were seen. Venous blood glucose was 10.1 mmol/l and white blood count 13.2 x 10⁹/l. Urea and electrolytes, liver function tests and arterial blood gases were normal. She was commenced on vancomycin and ceftriaxone and transferred to the intensive care unit.

At this point she was protecting her own airway and was haemodynamically stable; an erythematous rash developed on her right leg. A retained tampon was removed. She remained restless and was sedated with a propofol infusion. Computed tomography (CT) of the head showed slight cerebral oedema. On day 2 she was making spontaneous purposeful movements with her left side but only localising pain with her right side. She remained restless. Repeat head scan showed no focal lesion. She was commenced on dexamethasone, 4 mg intravenously qid, for suspected cortical thrombophlebitis.

The following day group B streptococci were isolated from the two sets of blood cultures, high vaginal swab and the CSF. On day four she had three grand mal fits and was commenced on phenytoin. Magnetic resonance imaging revealed a small lacunar infarct. Her antibiotic regime was changed from vancomycin to clindamycin.

Over the following few days she improved with resolution of her confusion and hemiparesis. On day 15 she developed left-sided pleuritic chest pain and shortness of breath, strongly suggestive of pulmonary embolus. This was confirmed by a perfusion scan which showed a large perfusion defect at the left base. Treatment was commenced with heparin and warfarin. On day 23 she was discharged home with no evidence of focal neurological deficit. Intravenous antibiotics had been continued for a total of 14 days; dexamethasone was reduced and stopped over this period and she remained on phenytoin and warfarin on discharge.

The reported mortality rate in adults with group B streptococcal meningitis is 27%, 45% in patients with a comorbid condition, and 0% in patients without underlying disease; 30% of those with bacteraemia die. The presentation was strongly suggestive of infection caused by bacteria other than those of streptococci in the bloodstream from the female reproductive system. The spread of infection into the CSF was then facilitated by the spinal anaesthetic having created a site of low resistance. Although she developed a skin rash the skin swabs were negative, making this very unlikely to be the source of infection.

Learning points

- rare in adults but high mortality
- often comorbid conditions
- high index of suspicion
- look for upper respiratory tract symptoms and ensure tampons are removed pre-operatively
- strict asepsis for spinal anaesthesia
- treat early with intravenous antibiotics and fluids on the intensive care unit; anticonvulsants may be required

Box 2

Causes of meningitis after lumbar puncture or spinal anaesthesia

- aseptic meningitis from disinfectants and detergents
- introduction of bacteriaemia from the bloodstream of a septicemia patient
- introduction of foreign material due to corticosteroids
- use of certain local anaesthetic solutions
- coincidental viral infection

Box 1

Genetic predisposition of ischaemic heart disease

Sir, Wat et al reported a 29-year-old man who developed acute myocardial infarction. Another recent publication reported a 28-year-old Olympic champion, without any conventional risk factors, who died of acute myocardial infarction associated with coronary heart disease.

Wat et al reported that their patient had no coronary heart disease risk factors other than hypercholesterolaemia. Patients with hypercholesterolaemia of 7.1 mmol/l are commonly observed in out-patient clinics. However, it is quite rare that they develop such severe coronary heart disease, or fatal acute myocardial infarction, at this age. Genetic predisposition for the development of coronary heart disease is largely unknown, but recent observations have revealed that some genetic variants are associated with coronary heart disease in Caucasians. It has been postulated that certain local anaesthetics contribute to this pathogenesis.

Wat et al's patient is suggestive of a family history of acute myocardial infarction, he may have inherited genetic abnormalities from each of his parents. Compound heterozygosity of more than two mutations or homozygosity of a genetic mutation may have contributed to his acute myocardial infarction of juvenile onset.

It is obvious that conventional risk factors for coronary heart disease, such as hypercholesterolaemia should be controlled, but investigation of genetic predisposition is likely to contribute to decreasing fatal coronary heart events. Other than conventional risk factors, genetic analysis of patients for coronary heart disease susceptibility genes will be important for the prevention of fatal coronary heart events.


Box 1

Causes of meningitis after lumbar puncture or spinal anaesthesia

- aseptic meningitis from disinfectants and detergents
- introduction of bacteriaemia from the bloodstream of a septicemia patient
- introduction of foreign material due to corticosteroids
- use of certain local anaesthetic solutions
- coincidental viral infection

Box 1

Group B streptococcal meningitis in an adult.

A. G. Hatfield and A. H. al-Hillawi

Postgrad Med J 1997 73: 188
doi: 10.1136/pgmj.73.857.188

Updated information and services can be found at:
http://pmj.bmj.com/content/73/857/188.1.citation

Email alerting service

These include:
Receive free email alerts when new articles cite this article. Sign up in the box at the top right corner of the online article.

Notes

To request permissions go to:
http://group.bmj.com/group/rights-licensing/permissions

To order reprints go to:
http://journals.bmj.com/cgi/reprintform

To subscribe to BMJ go to:
http://group.bmj.com/subscribe/