REFERENCES

- 1 Orudjev E, Lange BJ. Evolving concepts of management of febrile neutropenia in children with cancer. *Med Pediatr Oncol* 2002;**39**(2):77–85.
- 2 Hann I, Viscoli C, Paesmans M, et al. A comparison of outcome from febrile neutropenic episodes in children compared with adults: results from four EORTC studies. International Antimicrobial Therapy Cooperative Group (IATCG) of the European Organization for Research and Treatment of Cancer (EORTC). *Br J Haematol* 1997;**99**(3):580–8.
- 3 Klastersky J, Paesmans M, Rubenstein EB, et al. The Multinational Association for Supportive Care in Cancer risk index: a multinational scoring system for identifying low-risk febrile neutropenic cancer patients. *J Clin Oncol* 2000;**18**(16):3038–51.
- 4 Viscoli C, EORTC International Antimicrobial Therapy Group. Management of infection in cancer patients. Studies of the EORTC International Antimicrobial Therapy Group (IATG). *Eur J Cancer* 2002;**38**(Suppl 4):S82–7.
- 5 National Institute of Clinical Excellence (NICE). *Guidance on cancer services: improving outcomes in child and adolescent cancer*. London: The Stationery Office, 2003.
- 6 Innes H, Billingham L, Gaunt C, et al. Management of febrile neutropenia in the United Kingdom: time for a national trial? *Br J Cancer* 2005;**93**:1324–8.
- 7 Paul M, Soares-Weiser K, Leibovici L. β lactam monotherapy versus β lactam-aminoglycoside combination therapy for fever with neutropenia: systematic review and meta-analysis. *BMJ* 2003;**326**:1111.
- 8 Contopoulos-Ioannidis DG, Giotis ND, Bialista DV, et al. Extended-interval aminoglycoside administration for children: a meta-analysis. *Pediatrics* 2004;**114**(1):e111–8.
- 9 Petrilli AS, Dantas LS, Campos MC, et al. Oral ciprofloxacin vs intravenous ceftriaxone administered in an outpatient setting for fever and neutropenia in low-risk pediatric oncology patients: randomized prospective trial. *Med Pediatr Oncol* 2000;**34**(2):87–91.
- 10 Mullen CA, Petropoulos D, Roberts WM, et al. Outpatient treatment of fever and neutropenia for low risk pediatric cancer patients. *Cancer* 1999;**86**(1):126–34.
- 11 Paganini H, Gomez S, Ruvinsky S, et al. Outpatient, sequential, parenteral-oral antibiotic therapy for lower risk febrile neutropenia in children with malignant disease: a single-center, randomized, controlled trial in Argentina. *Cancer* 2003;**97**(7):1775–80.

IMAGES IN PAEDIATRICS.....

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Spinal extradural haematoma due to haemophilia A

A 4 month old boy was admitted to our hospital because of irritability and incomplete left limb paralysis. He was born at term at another hospital by spontaneous vaginal delivery to a 26 year old primipara Filipino woman. He had a productive cough, rhinorrhea and was irritable for 1 week before admission. The left hemisphere incomplete paralysis began at that time. He had no trauma and no skin lesions, such as petechiae or purpura. The neurological examination revealed mild muscle weakness and decreased deep tendon reflexes on his left side. Spinal magnetic resonance imaging (MRI) revealed an extradural haemorrhage extending from C4 to S1 (figs 1 and 2). A detailed interview revealed a history of bleeding on the maternal side, and he was diagnosed with haemophilia A.^{1,2} His clinical condition improved promptly and fully following treatment with clotting factor. At the age of 2 years, he is developing normally; no neurological abnormalities have been detected and there has been no spinal recurrence.

Unless the neurological deficiency progresses rapidly, as in this case, non-surgical, conservative management is safe for a spinal extradural haematoma in patients with haemophilia, rather than attempting high-risk surgical management with inappropriate coagulation status.^{3,4}

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Figure 1 MRI of the spine showing coexisting old and new haemorrhages.

Figure 2 Enhanced MRI of the spine showing an extradural haemorrhage extending from C4 to S1.

References

- 1 Eyster ME, Gill FM, Blatt PM, et al. Central nervous system bleeding in hemophiliacs. *Blood* 1978;**51**:1179–88.
- 2 Huft PJ, Herold ED, Koenig BM, et al. Spinal extradural hematoma in an infant with hemophilia A: an unusual presentation of a rare complication. *J Pediatr* 1996;**128**:704–6.
- 3 Narawong D, Gibbons VP, McLaughlin JR, et al. Conservative management of spinal epidural hematoma in hemophilia. *Pediatr Neurol* 1988;**4**:169–71.
- 4 Iwamuro H, Morita A, Kawaguchi H, et al. Resolution of spinal epidural haematoma without surgery in a haemophilic infant. *Acta Neurochir* 2004;**146**:1263–5.