

LETTERS TO THE EDITOR

Acquired protein S deficiency

EDITOR,—Ceyhan and colleagues at Hacettepe University reported transient protein S deficiency after deep vein thrombosis, complicating *Salmonella typhimurium* infection in a 13 year old boy.¹ They state that their investigations did not reveal evidence of disseminated intravascular coagulation, a known cause of protein S deficiency, and the reader is left with the impression that the acquired deficiency of protein S was the likely cause of the thrombosis in this case.

These authors have, however, failed to consider other causes of acquired protein S deficiency including deep vein thrombosis itself. They cite D'Angelo *et al* but seem unaware that the conclusion arising from that paper was that transient deficiency of protein S was one of the haemostatic abnormalities seen after acute deep vein thrombosis.² A recent review suggested that haematological assessment should therefore not be carried out until at least two to three weeks after any acute event.³

An earlier paper from Hacettepe University reported deficiencies of protein C in almost 50% of cases of cerebrovascular accident in childhood and suggested that these patients were predisposed to cerebrovascular accident as a result of inherited heterozygous protein C deficiency.⁴ However, only single values of protein C for each patient were reported and there was no family study.

Two published series of 38 and 50 unselected young adults with cerebrovascular accident uncovered three cases of possible deficiency of protein C.^{5,6} A third similar study in a paediatric population found no cases of deficiency of protein C or protein S among 33 unselected cerebrovascular accidents with childhood onset and unknown cause and also identified three further cases in whom diagnosis of and treatment for inherited protein C deficiency had been undertaken inappropriately (G Warner *et al*, unpublished). If these three series are combined, the prevalence of low concentrations of protein C in this population was three in 121 cases which is very similar to the prevalence of one in 60 reported in asymptomatic adult blood donors in the USA.⁷

Appropriate criteria for the diagnosis of deficiencies of protein C and protein S must be carefully applied if unnecessary anxiety and inappropriate treatment are to be avoided.

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- 1 Ceyhan M, Kanra G, Benderlioglu B, Secmeer G, Hicsonmez G, Kirazli S. Transient protein S deficiency with deep venous thrombosis during *Salmonella typhimurium* infection. *Arch Dis Child* 1993; 68: 138-9.
- 2 D'Angelo A, Vigano-D'Angelo S, Esmon CT, Comp PC. Acquired deficiencies of protein S activity during oral anti-coagulation, in liver disease, and in disseminated intravascular coagulation. *J Clin Invest* 1988; 81: 1445-54.
- 3 Rick ME. Protein C and S. *JAMA* 1990; 263: 701-3.
- 4 Uysal S, Anlar B, Altay C, Kirazli S. Role of protein C in childhood cerebrovascular occlusive accidents. *Eur J Pediatr* 1989; 149: 216-8.

- 5 Chancellor AM, Glasgow GL, Ockelford PA, *et al*. Etiology, prognosis and hemostatic function after cerebral infarction in young adults. *Stroke* 1989; 20: 477-82.
- 6 Camerlingo M, Finazzi G, Casto L, *et al*. Inherited protein C deficiency and an haemorrhagic arterial stroke in young adults. *Neurology* 1991; 41: 1371-3.
- 7 Miletich J, Sherman L, Broze G. Absence of thrombosis in subjects with heterozygous protein C deficiency. *N Engl J Med* 1987; 317: 991-6.

Dr Ceyhan comments:

Dr Kennedy states that it is not correct to leave the reader with the impression that acquired deficiency of protein S was the likely cause of the thrombosis in the case we described, who did not have other possible causes of acquired protein S deficiency. However, we have no contrary evidence.

In the study by D'Angelo *et al* cited by us and Dr Kennedy, transient deficiency of protein S was seen not only after acute deep vein thrombosis.¹ All cases in that study received warfarin, which is a well known cause of protein S deficiency.² Acute deep vein thrombosis could be eliminated as a possible cause of transient protein S deficiency in our case by measuring the protein S activity before and after development of thrombosis to determine whether protein S deficiency or thrombosis was the primary cause.

Familial cases mentioned by Dr Kennedy are not relevant to our case. Our paper stated that the family of the index case was studied and the protein S values were within the normal range.

I believe that reporting of cases such as ours is valuable to the understanding of the relationship between protein S and acquired diseases. Prospective studies on patients with infectious diseases in whom deep vein thrombosis may develop will shed further light on this problem.

- 1 D'Angelo A, Vigano-D'Angelo S, Esmon CT, Comp PC. Acquired deficiencies of protein S activity during oral anti-coagulation, in liver disease, and in disseminated intravascular coagulation. *J Clin Invest* 1988; 81: 1445-54.
- 2 Fair DS, Revak DJ. Quantitation of human protein S in the plasma of normal and warfarin-treated individuals by radioimmunoassay. *Thromb Res* 1984; 36: 527-33.

Snoring, sleep disturbance, and behaviour in 4-5 year olds

EDITOR,—I read the paper by Dr Ali and colleagues with considerable interest.¹ Their finding that children who snore are more likely to be hyperactive, inattentive, and aggressive is the latest in an accumulating volume of research into nocturnal breathing problems. It adds to the considerable body of evidence linking poor quality sleep with daytime behaviour problems.

There has been far less interest in the quantity of sleep, the total sleep time, and its effects on daytime functioning. In a study of the efficacy of behavioural methods of treatment for severe sleep disorders in preschool children, Richman *et al* reported that increasing the total sleep time was also associated with improvement in other behaviours.² However, the numbers were small. Similarly Dahl *et al* reported a case history of a 10 year old girl with attention deficit disorder (hyperactivity) in whom a two hour increase in total sleep time resulted in significant improvement in a wide range of daytime behaviours.³ This is an area which has been insufficiently researched.

Children today are being presented with an increasing variety of distractions and demands

on their time. Television and computer games provide exciting alternatives to sleep. Clinical experience would suggest that a large number of children are getting considerably less than their optimal amount of sleep. The implication of this, coupled with a number of snoring children now that adenotonsillectomy is performed more selectively, is enormous and should be looked into in more detail by child psychiatrists and paediatricians.

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- 1 Ali NJ, Pitson DJ, Stradling JR. Snoring, sleep disturbance, and behaviour in 4-5 year olds. *Arch Dis Child* 1993; 68: 360-6.
- 2 Richman N, Douglas J, Hunt H, Lansdown R, Levere R. Behavioural methods in the treatment of sleep disorders - a pilot study. *J Child Psychol Psychiatry* 1985; 26: 581-90.
- 3 Dahl RE, Pelham WE, Wierson M. The role of sleep disturbance in attention deficit disorder symptoms: a case study. *J Pediatr Psychol* 1991; 16: 229-39.

Do paediatricians use problem lists when writing to general practitioners?

EDITOR,—A problem list is a list of a patient's medical and social problems. A general practitioner colleague and I have recently shown that nearly all general practitioners prefer letters from hospital doctors to contain a problem list.¹ I have since investigated the use of problem lists by paediatricians.

I first wrote to 100 randomly chosen British consultant paediatricians and asked them to estimate what proportion of letters that they write about new outpatients contain a problem list. They had to choose from the following proportions: <10%, 10-50%, 50-90%, and >90%.

I then prospectively studied 100 consecutive letters that I received about children in my care from paediatricians of registrar grade or above to see whether or not the letter included a problem list.

I received 96 replies to the 100 questionnaires sent out in the first part of the study. Only 19% of consultant paediatricians estimated that they wrote problem lists in more than 90% of their letters. A further 4% of consultants estimated that they wrote problem lists in between 50-90% of their letters. The 100 letters that I received in the second part of the study came from 71 different doctors working in 17 hospitals. Nineteen of the 100 letters contained a problem list.

These results suggest that only about a fifth of British paediatricians routinely use problem lists in their letters to general practitioners.

General practitioners prefer letters with problem lists.¹ Furthermore, hospital paediatricians who use problem lists benefit from their use in at least two ways. Firstly, they benefit from the discipline of committing themselves to what they think the problems are. Secondly, at the child's next visit to hospital the doctor reviewing the case needs only to scan the last letter to identify the child's problems at a glance.

Both writer and reader seem to benefit from the use of problem lists. I believe that outpatient care of children would be more effective if more paediatricians wrote letters with problem lists.

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- 1 Lloyd BW, Barnett P. Problem lists for improving communication between hospital doctors and general practitioners. *BMJ* 1993; 306: 247.