vessels and of the midbrain and pons. There was tentorial herniation, greater on the right. There was no evidence of previous cell loss or of inflammatory reaction.

Comment

Water intoxication causes hyponatraemia, which is responsible for the neurological dysfunction by causing intracellular overhydration. Symptoms may occur if the serum sodium concentration is less than 120 mmol/l, but the degree of brain dysfunction corresponds with the rapidity of development of the hyponatraemia. Intracellular potassium concentration is reduced, partly due to increased intracellular water and partly due to loss of intracellular potassium, but it is not clear whether cellular swelling alone or the potassium deficit is responsible for the encephalopathy. The accompanying brain oedema is usually transient but the intracranial hypertension may be catastrophic, causing uncal and tonsillar herniation.[1] The intracranial pressure later reverts to normal.[2]

In our patient signs developed with such rapidity that therapeutic measures succeeded in reducing the intracranial pressure only after irreversible brain stem damage had taken place.

We thank Dr A H James for permission to report this case and for helpful advice.

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Enteritis and colitis associated with mefenamic acid

Diarrhoea is a recognised side effect of treatment with mefenamic acid, although inflammatory bowel disease has not been reported. We describe two cases of acute colitis associated with treatment with mefenamic acid.

Case reports

CASE 1

A 43 year old man presented with a one year history of loose, bloodstained bowel actions up to 10 times daily, abdominal colic, and weight loss of 16 kg. He had been taking mefenamic acid (Ponstan) 250 mg by mouth three times daily for three years because of psoriatic arthropathy.

Physical examination showed only pallor and dehydration. Results of blood tests included: haemoglobin concentration (10·5 g/dl); white cells $11\,600 \times 10^9$/l (33% eosinophils); serum iron concentration 4·0 μmol/l (22·3 μg/100 ml); total iron binding capacity 62 μmol/l (346 μg/100 ml); erythrocyte sedimentation rate 15 mm in the first hour; and albumin concentration 31 g/l. On sigmoidoscopy the rectal mucosa appeared normal, but a biopsy specimen showed signs of mild chronic proctitis. A barium enema showed no obvious abnormality in the colon. Colonoscopy, however, showed that the mucosa of the descending colon was abnormal, with areas of aphthous ulceration and a cobblestone appearance; biopsy samples from these areas showed excessive plasma cell and eosinophil infiltration; the crypts were normal and there were no granulomas. Stool cultures were negative for salmonella, shigella, campylobacter, virus particles, parasites, and *Clostridium difficile* toxin. Yersinia agglutination and amoebic fluorescence antibody tests gave negative results. Results of a barium follow through examination were normal. Faecal fat excretion was slightly raised (23 mmol/(6·5 g)/24 h (normal < 17 mmol (4·8 g)/24 h)). An endoscopic duodenal biopsy specimen showed a chronic inflammatory cell infiltrate in the lamina propria but was otherwise normal.

He was treated for six weeks with sulphasalazine without improvement. Mefenamic acid was therefore stopped, and within 48 hours his abdominal pain and diarrhoea had stopped. His appetite improved. Ten days later he was again given mefenamic acid; the pain and diarrhoea recurred the same day. He did not take mefenamic acid for the following year during which time he was free of symptoms, he regained his former weight, and all blood variables were normal.

CASE 2

A 69 year old man presented with a two month history of diarrhoea, with up to six bowel actions daily, and weight loss of 4 kg. He had been taking mefenamic acid 500 mg (Ponstan forte) intermittently for eight months while awaiting left ureterolithotomy.

Examination was normal except for atrial fibrillation. On sigmoidoscopy pus was present in the lumen and the mucosa showed loss of vascular pattern. A rectal biopsy specimen showed active proctitis. Stool cultures gave negative results for salmonella, shigella, campylobacter and *Clostridium difficile*, and microscopy showed that no parasites were present. Full blood count, results of thyroid function tests, and serum albumin concentration were normal, but the erythrocyte sedimentation rate was 51 mm in the first hour and seromucoid concentration was raised (2·0 g/l (normal < 1·2 g/l)). Barium enema showed only mild diverticular disease. Barium follow through examination showed slight dilatation of jejunal loops. A duodenal biopsy specimen showed normal villi with a non-specific inflammatory infiltrate.

Mefenamic acid was stopped, and the diarrhoea resolved after four days. He began taking mefenamic acid again after an interval of three weeks, and the diarrhoea returned within three hours. When the drug was stopped again his diarrhoea settled immediately. The erythrocyte sedimentation rate, seromucoid concentrations, and sigmoidoscopic and rectal biopsy appearances were then normal. He did not take mefenamic acid for the four months of follow up and remained well.

Comment

Gastrointestinal side effects of mefenamic acid, although not common, are well recognised. One of our patients had mild steatorrhoea, and both had inflammatory infiltration of the proximal small bowel, both complications that have been reported before.[1 2] Colitis, however, does not appear to be a recognised complication, the manufacturers being aware of only four other possible cases (Warner-Lambert (UK), personal communication). The unmasking of idiopathic inflammatory bowel disease has been reported with other non-steroidal anti-inflammatory drugs.[3] The prompt and permanent resolution of symptoms in both our patients when treatment with mefenamic acid was stopped and their recurrence on re-exposure, however, strongly suggest that this drug caused the colitis. These observations emphasise the need for an adequate drug history in patients presenting with acute proctitis or colitis.

We thank Dr O F W James for permission to report on the patient in case 2.

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