in subtemporal soft tissue. According to Doroghazi et al. patients with multiple lower cranial nerve palsies usually have bone erosion around the jugular foramen which suggests that palsies of lower cranial nerves, apart from VII, are due to osteomyelitis of the skull base or to an associated extradural abscess or petrosal sinus thrombosis.

According to Mendelson et al., Te" and Ga" scans are the most helpful radiological investigations in the diagnosis of invasive external otitis, computed tomography is useful for diagnosing and assessing soft-tissue extension, and Ga" scans are best for following resolution of infection. The Te" bone scan in our patient supported the possibility of osteomyelitis, the plain radiographs, tomograms and CT scans having shown no evidence of bone infection.

Patients with multiple lower cranial nerve palsies may require detailed investigation to establish a diagnosis. Pseudomonas infection of the petrous bone and skull base is a curable condition which should be considered particularly if pain is a prominent feature and if there has been evidence of recent otitis externa or mastoiditis.

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References

Nutritional amblyopia in a patient with Crohn's disease
Sir. Bilateral visual failure associated with centro-caecal scotomata is a rare condition in which the aetiology is often unclear. Two hypotheses are that it is due to exogenous toxins, such as cyanide, or alternatively that it is due to nutritional deficiency. In the latter case many vitamins have been implicated particularly the B group. Many reports describe patients who have had a heavy intake of tobacco and alcohol and have elevated cyanide levels, but the evidence for vitamin deficiency relies largely on cases of malnutrition studied during the second world war in which cyanide levels were not measured and in which dietary deficiencies of substances other than vitamins may have been present. We report a case of bilateral visual failure associated with night blindness in which the most likely cause was a deficiency of vitamin A and B group vitamins. The vitamin lack was related to longstanding malabsorption due to a short bowel, following surgery for Crohn's disease.

The patient was a 62-year-old widow who 3 years prior to admission suddenly noticed she could not find her way at night in the dark, particularly out of doors. In time she developed particular difficulty with poorly illuminated parts of the house, such as corners, cupboards and in lighting her oven. In the latter case she had to feel for the flame with her hands to be sure that she had lit the gas. She did not venture out of doors at night for fear of self injury. This complaint persisted unchanged to her admission. Approximately 6 months before admission she noticed the gradual onset of difficulty seeing objects during the day. This difficulty progressed over a 6 months period to the point where she could not see anything directly in front of her, such as what she was cooking in her pots, or notes and coins, nor could she read ordinary print. Her peripheral vision in daylight was normal. She had also noticed that she was unable to discern colours correctly and at times could not see colour at all. She had a past history of Crohn's disease diagnosed at laparotomy 9 years earlier when she presented with bowel obstruction. Ileal resection and ascending colectomy was performed at the time. She subsequently was treated with azathioprine and prednisolone. A colo-vaginal fistula healed spontaneously after several months. She remained on the azathioprine and prednisolone up to the time of her admission. Although the disease activity was quiescent, the patient continued to experience steatorrhoea for all that period of time. She passed 7 to 10 stools per day which were pale and greasy. Renal calculi were removed from both kidneys 3 years prior to admission following an episode of haematuria. An oligo-articular arthritis developed 2 years prior to admission and this was successfully treated with non-steroidal anti-inflammatory agents and local steroid injections. She smoked 15 to 20 cigarettes per day and drank alcohol occasionally. She was otherwise asymptomatic, in particular she gave no symptoms of a peripheral neuropathy, myelopathy or other nutritional deficiencies. Medications on admission were azathioprine 75 mg per day, prednisolone 10 mg per day, codeine phosphate 60 mg per day, flurazepam 30 mg per day and hydroxocobalamin 1000 μg monthly intramuscularly.

Ophthalmological examination on admission revealed a visual acuity of N24 and 6/60 in the right eye and N8 and 6/18 in the left for near and distant vision respectively. Colour vision was absent bilaterally; only the first of the Ishihira plates could be read, with difficulty. Visual fields performed by confrontation, Freidman chart and Bjerrum screen revealed bilateral centro-caecal scotomata for red but not for white. The pupils were large and poorly reacting to light. Fundoscopy examination was normal including the optic discs. The remainder of the neurological and general examination was also normal.

Abnormal results of investigations included the following: an iron deficiency anaemia with a haemoglobin of 9.2 g/dl (normal: 12-16 g/dl), serum iron of 5 μmol/l (15-35 μmol/l) and a total iron binding capacity of 74 μmol/l (normal: 45-70 μmol/l). The film showed burr cells, Howell Jolly bodies, basophilic stippling and occasional nucleated red blood cells. Serum carotene was 0.1 μmol/l (normal: 0.9-5.6 μmol/l), alkaline phosphatase of 381 IU/l (normal 100-280 IU/l), decreased gamma globulins on electrophoresis and prominent bone resorption on bone biopsy. Barium enema, small bowel enema and large bowel endoscopy revealed shortened ileum, resected ascending colon without blind loops and no active disease. The malabsorption was attributed to short bowel syndrome. Negative investigations included cranial CT scan, CSF examination including cytology, syphilis serology, prothrombin time, folate, red blood cell folate, liver function tests including gamma GT, electrolytes, renal function, calcium, phosphate, magnesium, urinary calcium, urinary urate, urinary oxalate, urine microscopy and culture, intravenous pyelogram and skeletal survey for osteomalacia.
The vitamin B12 level was greater than 1000\(\mu\)g/ml (normal: 140–900\(\mu\)g/ml), 25 hydroxy calciferol was 3–8\(\mu\)g/ml (normal: 3–30\(\mu\)g/ml), red blood cell cyanate was 1–4\(\mu\)mol/l (normal: <3\(\mu\)mol/l), plasma cyanate was 0.1–\(\mu\)mol/l (normal: <0.2–\(\mu\)mol/l) and plasma thiocyanate was 35\(\mu\)mol/l (normal: <250\(\mu\)mol/l in smokers). Tests of dark adaptation were not performed.

She was treated with intramuscular vitamin A (3000,000 units monthly), strong vitamin B and C injections (thiamine 250mg, riboflavin 4mg, pyridoxine 50mg, niacinamide 160mg and ascorbic acid 500mg) intramuscularly, initially daily for a week then biweekly to discharge. The azathioprine and prednisolone were discontinued. On such a regime the vision improved over the one month hospital stay, so that she was able to get about the ward at night without bumping into furniture and her visual acuity at discharge had returned almost to normal in both eyes (right eye N8, 6/9; left eye N6, 6/9). Colour vision was still impaired and the centrocaecal scotomata had all but disappeared in the left eye but was still present in the right eye, although reduced in size. Prior to discharge she had reverted to reading books with conventional print rather than extra large print.

This case illustrates the nutritional basis of bilateral visual failure with centrocaecal scotomata. The patient had proved vitamin A deficiency with night blindness. She had a recognised basis for malnutrition of 9 years standing. The visual failure developed in the setting of regular hydroxycoicalamin injections and the serum level testified to the adequate administration. The serum and red blood cell cyanate levels were in the normal range and there was no attempt at dietary alteration during her hospital stay other than intramuscular vitamin administration.

Early reports of this condition relating malnutrition as a causative factor, invariably also included an improved general diet in addition to the vitamin B preparations. The importance of general improvement in dietary intake is pertinent to the fact that cyanide detoxification requires an adequate supply of sulphur-containing amino acids and normal liver function. Furthermore such studies, which included patients with heavy alcohol and tobacco intake, failed to measure cyanide levels of such patients.

The possible extra cyanide load in prisoner-of-war camps may have been due to alternative food substitutes with high cyanide content, such as cassava, combined with an inadequate sulphur containing amino acids in the diet rather than purely vitamin B deficiency. Similarly in the group of patients in whom cyanide levels were measured and were elevated, hospitalisation invariably would have involved improved diet and vitamins. In such a situation it is again difficult to be sure which factor was important in clinical improvement.

In our patient there was no doubt that cyanide was not the responsible agent and that dietary intake was not changed except by the administration of multi B group vitamins. We considered the possibility that azathioprine was a toxic agent in this patient; however, extensive search of the literature failed to reveal an instance of toxic amblyopia during azathioprine administration. We can only conclude that visual improvement in our patient was due to the vitamin A and the B group vitamin replacement.

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PROLACTIN CELL AUTOANTIBODIES AND ALZHEIMER’S DISEASE

SIR: Evidence of autoimmune dysfunction in Alzheimer’s disease has been suggested by the excess of autoimmune disorders observed in families with the disorder and by the presence of immunoglobulins in amyloid fibrils of senile plaques. In a report from Angers, France, an incidence of 96% of prolactin cell autoantibodies was described in 27 cases of Alzheimer’s disease and of 90% in 11 cases of Down’s syndrome. In view of the potential importance of this finding for the understanding of the disorder and the initiation of therapeutic measures we attempted to duplicate this study.

Three normal human hypophyses were obtained within 3 hours post mortem. Patient and control sera were diluted 1/10 and stored at 4°C for a maximum of 48 hours. Fluorescein anti-human (total) IgG (Kallestad) and peroxidase labelled antiprolactin (Dako) were used. Reproducibility studies showed that storage below -20°C abolishes serum activity, that storage at 4°C during two weeks diminishes but does not abolish serum activity. Duplo studies with an interval of one day did lead to identical results in a blind control study. Patients and controls were selected between the inmates of Psychiatric Hospital Rosenburg. A diagnosis of Alzheimer’s disease was made on clinical grounds including psychometry. CT scanning was performed whenever possible. Diagnostic criteria for multiple infarct dementia included CT scanning. Patients suffering from chronic psychiatric illness (schizophrenia, cyclic psychosis, depression) above 65 years served as controls. CT scans showing infarcts or gross atrophy led to exclusion from the control group. All pathological investigations were performed without any knowledge of the names of the patients or their diseases. Serum batches were delivered to the laboratory under codenumber. Decoding took place at the end of the study.

The results are listed in the table. Clearly a cut positive reaction was encountered in 10 instances, slight reaction in four. Differences between the three groups are not significant. The high frequency of antibodies reacting to prolactin cells in Alzheimer’s disease, reported by Poupland et al was not confirmed in this study. The positive reactions shown in the table may indicate the presence of antibodies cross reacting to prolactin cells related to Alzheimer’s disease or senescence.

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