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TUBERCULOUS DISEASE OF THE CENTRAL NERVOUS SYSTEM
M Traub, A Colchester, M Swash
We have reviewed the management and outcome of CNS tuberculosis (TB) in 25 consecutive patients treated at The London Hospital since 1976. Sixteen patients presented with a subacute or chronic meningitic syndrome and nine with tuberculomata. In the 16 patients with meningitis the antecedent illness lasted 2 to 28 weeks; of eight patients with definite TB meningitis only four had acid fast bacilli cultured from the CSF whilst in the other four the diagnosis was confirmed by the detection of active TB elsewhere. In the remaining eight patients acid fast bacilli were not isolated, but they responded to anti-TB therapy. Seven of the patients in this latter group recovered fully, three died and four suffered severe morbidity, including one patient who developed a tuberculoma during treatment for TB meningitis. In the nine patients with intracranial tuberculoma the diagnosis was biopsy proven in seven and on the basis of CT scan appearance, and the response to anti-TB therapy in two. These patients presented with clinical features of a space-occupying lesion without systemic illness. Two died of post-operative complications and the other seven made excellent recoveries. In tuberculomata of the CNS the isolation of tubercle bacilli disseminated in the lumbar CSF or in the other systems reflects inadequacy of the host response and implies a poor prognosis.

ACQUIRED PENDULAR NYSTAGMUS
JJ Ell, MA Gresty, LJ Findley
Acquired pendular nystagmus is an involuntary sinusoidal oscillation of the globe which may adopt any trajectory, be unilateral or bilateral, conjugate or dissociate. We have studied 18 cases and reviewed a further 34 from the literature. Over 50% had multiple sclerosis, 30% brain stem vascular disease (stroke or angioma). In cases with associated somatic tremor (including several with orolabial myoclonus), a high degree of correlation between the various tremors was found. The effect of acute intravenous administration of hyoscine, lignocaine and ouabaine upon the pendular nystagmus and somatic tremors was studied. Our results suggest that acquired pendular nystagmus reflects membrane instability in structures at the level of the oculomotor nuclei. This is at variance with the previously postulated hypothesis that it is due to a failure of the eye position holding function of cerebellar nuclei. Although the major oculomotor systems of pursuit, saccades and the optokinetic response can all remain intact in the presence of pendular nystagmus, the disorder impairs visual acuity and interferes with generation of normometric scanning patterns such as in reading.

PARKINSON'S DISEASE: INHERITED OR ACQUIRED?
CD Ward, RC Duvoisin, JD Nutt, REldridge, DB Calne
In a study of Parkinson's disease in twins, the concordance rates in monozygous and dizygous pairs were 1/43 and 0/19 respectively. The inclusion of probands with doubtful clinical features increased the rates to 4/48 and 1/19, and did not affect the conclusion that the aetiology of Parkinson's disease is largely non-genetic. The question of the clinical heterogeneity of Parkinson's disease and of multi-system degenerations will be discussed with reference to the pedigree in which more than one case of parkinsonism was found. We conclude that Parkinson's disease is a distinctive entity although current clinical criteria are not entirely specific.

NALOXONE IN EXPERIMENTAL ISCHAEMIA
SF Avery, RW Ross Russell, HA Crockard
Encouraging evidence is appearing that in percussion lesions of the spinal cord the use of naloxone given after the injury lessens the amount of residual damage. A few clinical and experimental reports also provide some support for naloxone in the therapy of acute cerebral ischaemia. In a gerbil model of sixty minutes of bilateral cerebral ischaemia, produced by carotid occlusion and followed by reperfusion, we have studied the effect of a single dose (8 mg/kg) of naloxone given before the occlusion. Serial regional cerebral blood flow (rCBF) estimation (hydrogen clearance technique) with physiological monitoring has been examined in individual animals and oedema was noted post-mortem by a specific gravity technique. The lesion was severe with mean rCBF less than 10 ml/100 gm per minute and a 96% mortality in the first 48 hours. Treatment resulted in an improvement in mortality up to 12 hours after reperfusion with an increase in CBF in treated animals. BP, CO2, pulse and respiration showed little change and the amount of oedema formation was identical in the two groups.

CRITICAL RETINAL AND CEREBRAL PERFUSION IN PULSELESS DISEASE
RW Ross Russell, NGR Page
Pulseless disease may be due to atherosclerosis or arteritis. The proximal portions of both common carotid and subclavian arteries become occluded and in severe cases the brain may be supplied entirely by small collateral vessels; the cerebral perfusion pressure is greatly reduced. Extreme vasodilatation of cerebral resistance vessels may enable a normal cerebral blood flow to be maintained although CO2 responsiveness may be reduced. We have studied six patients with this syndrome; they all suffered attacks of syncope or transient visual loss. The symptoms of visual loss were fragmentation, peripheral constriction and dazzling in the field of vision. Attacks were provoked by standing, exercise, straining, eye movements, facial heating and bright sunlight. The mechanisms were probably minor degrees of systemic hypotension, rise in venous or intra-ocular tension and an extra-cerebral steal effect. A charac-

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teristic retinopathy was present. Permanent visual impairment occurred in three patients and cerebral infarction in one. Arterial surgery (endarterectomy or bypass) was carried out in three patients and relieved the symptoms.

RECOVERY IN THE HEMIPLEGIC UPPER LIMB
R Langton Hewer

The hemiplegic upper limb usually shows a poor level of ultimate recovery. No therapeutic measures have been shown to be of definite benefit. The Department of Neurology in Bristol has set up a project to assess carefully the course of recovery and to develop methods of treatment. In the present study, 92 consecutive stroke survivors have been followed for between 2 and 3 years. A battery of arm function tests has been applied at regular intervals. The information has been used to construct recovery curves showing the rate and duration of recovery. Some of the findings are as follows: (1) Significant improvement occurred between three weeks and three months in most cases, (2) 56 patients initially had a non-functional arm. By final follow-up, eight were fully functional and 14 had become partially functional, (3) One patient continued to show definite improvement for two years, but in the majority of cases it was not possible to demonstrate recovery beyond six months. Current research involves refining, and adding to, the tests in order to increase the degree of sensitivity. These developments include timing the arm function tests and a variety of instrumented tasks which include elbow and finger tracking, stirring a wheel, finger tapping and dynamometry.

Clinical Applications of Nuclear Magnetic Resonance Multiplanar Imaging
RN Corston, BS Worthington, D Kean, RC Hawkes, N Holland, WS Moore

Nuclear magnetic resonance imaging utilizes radiofrequency radiation in the presence of a magnetic field to provide a cross-sectional display of body anatomy which is essentially a distribution density map of mobile protons in cellular water and lipids. It has several advantages over x-ray computed tomography (CT) since it is non-invasive, utilizes non-ionising radiation, penetrates bone with no attenuation and has no known hazard. Of particular value is the facility to select electronically any imaging plane or thickness enabling transverse, coronal or sagittal images to be obtained directly. A variety of intracranial lesions have been examined utilising the multiplanar facility. The technique has proved of particular value in the investigation of pituitary and juxta-sella tumours enabling a precise assessment of extracellular extension of pituitary tumours and their relationship to the optic chiasm to be achieved by a non-invasive technique. In addition, ready differentiation of the empty-sella syndrome from pituitary tumours is achieved. Other areas where nuclear magnetic resonance scanning simplifies radiological investigations include midline intracranial posterior fossa lesions and lesions of the cranio-vertebral junction.

British Multicentre Trial of Plasma Exchange
R Greenwood, RAC Hughes, J Newsom-Davis, S Aslan, RB Scott, AN Bowden, DW Chadwick, DL McLellan, P Millac, NN Gordon, P Armitage

Effective treatment of acute inflammatory polyradiculoneuropathy (AIP) remains supportive. The relative importance of humoral and cellular allergic mechanisms is uncertain. Reported benefits of plasma exchange (PE) in uncontrolled studies may merely reflect spontaneous recovery. We undertook a randomised controlled trial of PE in AIP, having deduced from our previous prednisolone study that worthwhile benefit would be detected using only 15 patients in each group. Patients fulfilling established criteria were accepted with these exceptions: (a) previous attack of AIP; (b) improving; (c) able to walk unaided; (d) immunosuppressive treatment during the previous year; (e) neurological symptoms for more than 30 days; (f) positive for hepatitis B surface antigen; (g) unavailable for follow-up over one year; (h) aged under three years; (i) pregnant; (j) suffering from severe concurrent medical disease. Initial and subsequent assessments were made using disability scores previously established. Treatment comprised five daily exchanges starting immediately on entry, replacing 55 ml of plasma per kg body weight during each exchange. Both groups received normal supportive care. Other immunosuppressive treatment was avoided unless deterioration continued for more than six weeks. Thirty patients have been entered. Interim analysis at one month of the first twenty patients shows no significant (p < 0.01) benefit from treatment. One-year follow-up ends March 1983.

Pseudosyringomyelic Cervical Spondylotic Myelopathy
S Mossman, J Jestico

Two patients with cervical spondylotic myelopathy presented with features suggestive of syringomyelia. (1) A 76-year-old man presented with a Charcot wrist joint. Examination showed lower motor neuron signs in C5-C6 distribution with a spastic paraparesis. He had dissociated sensory loss from C6-T1. A myelogram showed cord compression from C3-C6. (2) A 68-year-old man presented with painless burns on the hands, weakness of grip and progressive difficulty with walking. There were lower motor neuron signs in the C5-C6 myotomes with a spastic paraparesis. Tactile sensation was preserved but there was analgesia in C5-T2 dermatomes with slight impairment of joint position sense in the fingers. A myelogram showed posterior cord compression from C4-C6 by the ligamentum flavum. Following a decompressive laminectomy his gait improved and the area of analgesia diminished. Anterior horn cell damage below the level of compression has been described in cervical spondylolisthesis. Spinothermal involvement in association with high cervical extramedullary cord compression has also been described. Cervical cord lesions in cervical spondylolisthesis may be due to a disturbance of cord circulation.

Vitamin E Deficiency and Spinocebellar Degeneration in Patients with Chronic Intestinal Malabsorption
PK Thomas, AE Harding, DPR Muller, HJ Willison

It has recently been suggested that neurological symptoms in some patients with chronic fat malabsorption may be related to a prolonged and severe deficiency of vitamin E. In abetalipoproteinemia, where there is a severe deficiency of this vitamin from birth, it has been reported that treatment with vitamin E may retard the development of neurological complications, or ameliorate them if they have developed. We have studied two adults who developed a progressive neurological disorder which appeared more than 20 years after the onset of chronic fat malabsorption. The findings included dysarthria, cerebellar ataxia in the limbs, tendon areflexia, and loss of vibration and position sense. Vitamin E was undetectable in the serum of both cases. Oral vitamin E therapy in one case was followed by clinical and electrophysiological improvement. Electrophysiological observations on these two
patients suggested that the human deficiency state is similar to that described neuropathologically in vitamin E deficient animals.

BACTERIAL MENINGITIS—25 YEARS' EXPERIENCE
Milne Anderson, LA Loizou, JC McCrum

CSF GABA LEVELS IN NEUROLOGICAL DISORDERS
RJ Abbott, PAH Millac, IF Pye

THE EFFECTS OF INTRAVENOUS LEVODOPA AND LISURIDE ON THE MOTOR AND

PSYCHOLOGICAL FEATURES OF THE ON-OFF SYNDROME IN PARKINSON'S DISEASE
RJ Hardie introduced, AJ Lees, GM Stern

ARE THE BASAL GANGLIA INVOLVED IN COGNITION: EVIDENCE FROM STUDIES IN PARKINSON'S DISEASE
AJ Lees

AN INHERITED FORM OF PRE-SENIILE DEMENTIA WITH DEMYELINATION AND AMYLOID VASCULAR CHANGE
PC Gautier-Smith

DOES ASPIRIN INHIBIT PLATELET AGGREGATION IN WHOLE BLOOD?
S Pollock, B Stewart, MJG Harrison

THE OXFORD COMMUNITY STROKE PROJECT. A STUDY OF STROKE EPIDEMIOLOGY WITHIN THE COMMUNITY BUT USING SPECIALISED NEUROLOGICAL AND NEURORADIOLOGICAL EXPERTISE
P Sandercocck, C Warlow, M Vessey, G Fowler, K McPherson

HYSTERICAL PARAPLEGIA
JHE Baker, JR Silver