LETTERS TO THE EDITOR

Posterior alexia after right occipitotemporal infarction

Posterior or pure alexia is an uncommon acquired reading disturbance in which the loss of the ability to read is not associated with other language deficits. 1 It has been reported almost without exception after left (dominant) hemispheric lesions involving visual temporo-occipital pathways and splenium of the corpus callosum, and is considered to be a strong lateralising feature. The explanations of this deficit are on the basis of: (a) a disconnection syndrome—that is, the lesion prevents visual information from reaching the language area, or (b) the presence of a lateralised visual language association area residing in the dominant posterior inferior temporal lobe. We describe a patient with an atypical interhemispheric organisation who developed pure alexia and features of apperceptive agnosia after a right occipitotemporal infarction.

The patient is a 71 year old man, with a college degree education. He writes, uses a fork, spoon, or knife with the right hand, but prefers to use his left hand or leg for every other activity. He has no antecedents of sinistrality in first degree relatives. At the age of 68 he had a myocardial infarction complicated with anterior and posterior vascular communication and heart failure. He underwent cardiac surgery and recovered. Immediately after surgery his examination showed a left visual hemianopia and he complained of inability to read. However, no neurological assessment was required at that time and no further studies were conducted.

Three years later he was referred to the neurology clinic because of a syncopal episode and further attention was then paid to his cognitive complaints. He referred that during the first year after his surgery letters were just unmeaning lines for him and he had some confusion with numbers. Later, he learnt gradually to discriminate numbers and to recognise many letters but was still unable to put them together into syllables or meaningful words.

He was given a cognitive examination (quantified and classified in table 1). He was cooperative and fully oriented. On a line bisection task he scanned from left to right and upside down bisecting all lines. He had no visuospatial disorientation according to his performance in tests of the visual object and space perception battery. 2 Visuospatial perception and visuconstructive tasks disclosed features consistent with apperceptive agnosia. He was able to recognise and copy simple shapes and figures (circle, cube, ...) but was impaired in recognising schematic drawings (for example, from the Boston naming test or cookie theft scene) or when he tried to copy more complex figures such as a house or Rey’s figure. The main deficit pertained to piecing together separate visual stimuli, especially line drawings, into a whole percept. Recognition of real objects and pictures of famous people was appropriate. Colour matching was normal but he committed errors when asked to name a colour on confrontation or to point to a certain colour. Because he reported to have always had some difficulty with colour discrimination it was not certain the interpretation of this deficit was achromatopsia.

Table 1 Cognitive assessment of the patient

<table>
<thead>
<tr>
<th>Spatial attention/orientation:</th>
<th>Results (correctional)</th>
<th>Interpretation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Line cancellation task</td>
<td>30/30</td>
<td>No neglect</td>
</tr>
<tr>
<td>Shape detection screening test</td>
<td>20/20</td>
<td>Appropriate spatial analysis</td>
</tr>
<tr>
<td>Dot counting</td>
<td>10/10</td>
<td></td>
</tr>
<tr>
<td>Number location</td>
<td>8/10</td>
<td></td>
</tr>
<tr>
<td>Position discrimination</td>
<td>17/20</td>
<td></td>
</tr>
<tr>
<td>Visuconstructive abilities:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Copy of simple drawings</td>
<td>23/3*</td>
<td>Apperceptive agnosia *</td>
</tr>
<tr>
<td>Copy of complex Rey figure</td>
<td>21/36 (centile 1)*</td>
<td></td>
</tr>
<tr>
<td>Visual recognition</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Simple shapes</td>
<td>5/5</td>
<td></td>
</tr>
<tr>
<td>Schematic drawings</td>
<td>10/15*</td>
<td></td>
</tr>
<tr>
<td>Real objects</td>
<td>5/5</td>
<td></td>
</tr>
<tr>
<td>Faces (photographs)</td>
<td>5/5</td>
<td></td>
</tr>
<tr>
<td>Colour matching</td>
<td>5/5</td>
<td></td>
</tr>
<tr>
<td>Colour discrimination</td>
<td>6/10</td>
<td></td>
</tr>
<tr>
<td>Language</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Boston naming test</td>
<td>222/30</td>
<td>No aphasia</td>
</tr>
<tr>
<td>Writing sentences</td>
<td>3/3</td>
<td>Mild naming deficit</td>
</tr>
<tr>
<td>Reading words</td>
<td>0/10</td>
<td>No agraphia</td>
</tr>
<tr>
<td>Recognition of spelling aloud words</td>
<td>6/6</td>
<td>Posterior alexia</td>
</tr>
</tbody>
</table>

*Visual object and space perception battery; †Plus three items after phonemic clues (includes just the errors due to naming impairment).

Spontaneous speech, comprehension, and repetition were normal. Confrontation naming with the Boston naming test was in the lower range disclosing very mild word finding problems (in addition to several failures clearly due to perceptual difficulties). Handwriting was meaningful and syntactically correct both spontaneously and to dictation. He was perfectly able to copy single letters and words. When trying to read, the patient was able to recognise many letters but he committed frequent errors such as between M and V, R and A, or H and R. He was unable to read syllables or simple words. On the contrary, he recognised with ease three syllable words spelled aloud by the examiner. He was able to read and to recognise numbers. Calculation was normal, with isolated errors. He had no problems distinguishing between right and left sides.

Brain CT shows an infarction in the territory of the right posterior cerebral artery involving occipital visual cortex and periventricular white matter extending to the forceps major of the corpus callosum.

Brain CT showed an old infarction in the territory of the right posterior cerebral artery involving the occipital visual cortex and periventricular white matter extending to the forceps major of the corpus callosum (figure). No lesions were found in the left hemisphere.

The development of posterior alexia and apperceptive agnosia after a right occipitotemporal infarction is exceptional—only one case has been reported, in a left handed person, by Gloning et al., and discloses a rather atypical interhemispheric organisation in this patient. Firstly, he had a right hemispheric dominance for language, which is uncommon even in left handed patients. The neurological profile of his reading disorder showed the typical features of a posterior alexia due to dominant hemispheric damage.

His alexia could not be explained on the basis of neglect, visuospatial disorientation, simultanagnosia, or a global visual agnosia. Neither could it be due to his difficulties with complex visual perception, as he was perfectly able to copy words that afterwards he was unable to read. It is noteworthy that he was not able to recover any capability to read relying on his intact left temporo-occipital cortex.

The second remarkable deficit was consistent with the descriptions of Lissauer (1889) and of Bauer and Rubens (1985) of apperceptive agnosia. 3 He had clear difficulties in perceiving the overall configuration of complex line figures or schematic drawings, which impaired both their copy and their recognition. This deficit could not be attributed to primary visual deficit, deficit in visual scanning, visuospatial disorientation, or just to constructional apraxia. Apperceptive agnosia is classically related to right temporo-occipital lesions whereas associative agnosia occurs after similar left lesions. All previously reported cases of posterior alexia, when accompanied by agnostic features, have been of the associative type consistent with left damage. On the contrary, this patient encompassed a striking combination of agnostic features—that is, a selective associative agnosia for words plus features of apperceptive agnosia for other complex visual stimuli. This combination of deficits suggests that reverse hemispheric dominance for language was not accompanied by reverse dominance for other functions.
De novo partial duplication of 17p associated with Charcot-Marie-Tooth disease type 1A

Charcot-Marie-Tooth disease type 1A (CMT1A) is the most frequent form of CMT (also known as hereditary motor and sensory neuropathy, HMSN). The inheritance is autosomal dominant and is usually associated with a duplication at chromosome 17p11.2. This region contains the gene of the peripheral myelin protein 22 (PMP22) and an increased concentration of PMP22 seems to be responsible for neurological phenotype in patients with 17p11.2 duplication.1 Therefore, a gene dosage effect is the most likely pathogenetic mechanism for CMT1A. Partial trisomy 17p is an unusual chromosomal disorder rarely reported in Europe, the clinical features of which have not been definitely established.2 Growth retardation, craniofacial anomalies, and developmental delay seem to constitute a characteristic phenotype associated with this condition.3 Moreover, the identification of patients with 17p trisomy with a uniform demyelinating neuropathy similar to that seen in patients with CMT1A, has provided further in vivo evidence supporting the gene dosage hypothesis.4 In this report, we describe an additional case of a child with de novo partial duplication of 17p associated with CMT1A.

A 7 year old boy was born at 41 weeks of gestation by spontaneous vaginal delivery after an anterior vacuum aspiration. Physical examination showed low birth weight (2.755 kg, percentile 3), normal length (49.5 cm, percentile 25) and microcephaly (33 cm, percentile 3). Facial dysmorphic characters included hypertelorism, downslanted palpebral fissures, micrognathia, a high arched palate and prominent ears. At the age of 3 months, there was a continued growth failure (weight 4.100 kg, percentile 3; length 56.5 cm, percentile 3) and a right microphthalmia and divergent strabismus were noted. At 8 months of age, there was a marked global developmental delay. At that time, cerebral echography, brain auditory evoked potentials, and MRI were within normal limits. Subsequently, the patient was sent to a centre for mentally retarded children where he has been taking intensive schooling including psychomotor and speech therapies.

In June 1999, the patient was referred to our hospital for electrophysiological evaluation to test the possibility of impairment of the peripheral nervous system. At that time, the patient had no weakness, gait disturbances, or sensory complaints but the diagnosis of partial trisomy 17p was the reason for testing. Neurological examination showed facial dysmorphic characters (as mentioned above), remarkable hyperactivity, pronounced expressive speech delay, generalised hyporeflexia, pes cavus, and incipient tibio- peroneal atrogy.icrophthalmia, downslanted palpebral fissures, such as hypertelorism, micrognathia, prominent ears. In addition, our patient had divergent strabismus, microphthalmia, and speech delay. To date, only a few cases of this rare chromosomal condition have been published and clinical data are scarce. However, our finding supports the hypothesis that partial 17p has a typical phenotype.5 Recently, some authors have also shown abnormal nerve conduction velocities in patients with this disorder.6 Therefore, we carried out an electrophysiological study to examine the status of the peripheral nerves, detecting the existence of a demyelinating neuropathy in keeping with the diagnosis of CMT1A. It is important to emphasise that clinical manifestations such as weakness, ataxia, and sensory deficits were absent in the child. This fact strongly supports the need for electrophysiological evaluation in all patients with trisomy 17p even when the anomalies denoting the existence of peripheral nervous system impairment are absent.

Lupski et al7 studied a patient with 17p partial trisomy with decreased nerve conduction velocities whose minimal karyotypic abnormality showed the CMT1A duplication. On the basis of their findings, the authors hypothesised that the CMT1A phenotype resulted from a gene dosage effect. Later Chance et al8 ratified the association of trisomy 17p and CMT1A and provided further evidence supporting a gene dosage mechanism. Since then, only a few cases have been published.9 One of these studies examined the presence of PMP22 gene duplication in four patients with partial trisomy. Two of these patients showed slowing of conduction velocities and exhibited PMP22 gene duplication. By contrast, in two patients with normal conduction velocities the PMP22 gene was not duplicated. This investigation demonstrated that the presence of demyelinating neuropathy is directly associated with PMP22 gene duplication and corroborated the gene dosage model.

In summary, we describe another case of a patient with 17p trisomy whose electrophysiological evaluation showed the existence of a demyelinating neuropathy type CMT1. Our finding contributes support to the idea that trisomy 17p is responsible for a typical phenotype and that nerve conduction studies should be included in the routine examinations in all patients with this chromosomal disorder. In addition, our patient adds more in vivo evidence supporting a gene dosage effect in CMT1A.

Table 1 Results of electrophysiological studies

<table>
<thead>
<tr>
<th>Nerve</th>
<th>AMU (mV)</th>
<th>AMU (mV)</th>
<th>DML (ms)</th>
<th>CV (m/s)</th>
<th>FL (ms)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Median</td>
<td>3.4</td>
<td>2.1</td>
<td>8.8</td>
<td>14.1</td>
<td>ND</td>
</tr>
<tr>
<td>Peroneal</td>
<td>3.6</td>
<td>2.8</td>
<td>10.5</td>
<td>16.0</td>
<td>77.9</td>
</tr>
<tr>
<td>Tibial</td>
<td>2.9</td>
<td>2.5</td>
<td>8.3</td>
<td>14.1</td>
<td>83.9</td>
</tr>
</tbody>
</table>

We are grateful to Dr Orera for the initial cytogenetic evaluation and Dr Otero for his kind contribution to the bibliographic review.

J. L. FERNÁNDEZ-TORRE
Servicio de Neurofisiología Clínica, Hospital de Cabueñas, Cabueñas s/n, 33394 Gijón, Spain

B. OTERO
Servicio de Neuropediatría

www.jnnp.com
Bilateral vestibular failure as a unique presenting sign in carcinomatous meningitis: case report

Bilateral vestibular failure is a rare, often unrecognized, clinical entity (0.6%–2% of all routinely performed electroneystagmography), characterised by unsteadiness of gait and oscillopsia during head movements. The unsteadiness is due to loss of the vestibulospinal reflexes. It increases in darkness or when walking on uneven or soft ground — that is, when visual and somatosensory inputs, necessary for vestibular substitution, get compromised. Oscillopsia is an illusory movement of a stationary surrounding which occurs typically during locomotion as a result of a retinal slip due to an insufficient vestibulo-ocular reflex. The diagnosis of bilateral vestibular failure can be supported clinically by the finding of an abnormal visuo-ocular reflex (doll’s eyes), and an abnormal gaze fixation with compensatory saccades during rapid head turns (the head thrust test). A bilateral caloric test or a rotatory chair test confirms the diagnosis by demonstrating the absence of vestibular responses.

Otoxic drugs (for example, aminoglycosides) are the most common cause of bilateral vestibular failure, followed by sporadic multi-system degeneration, infectious meningitis, bilateral cerebellopontine angle tumours, and autoimmune disorders. Neuropathies (such as vitamin B12 deficiency, hereditary polyneuropathies, and sarcoidosis), sequential vestibular neuritis, and bilateral Menière’s disease also often lead to bilateral vestibular failure.1,2,3 Bilateral vestibular failure due to leptomeningeal metastasis has been reported to occur as a part of the clinical picture of carcinomatous meningitis, including symptoms of increased intracrural pressure, multiple cranial and spinal nerve involvement, and changes in mental state.1,4 We report on a patient with carcinomas of the breast who rapidly progressive bilateral vestibular failure was the main and outstanding presenting symptom of leptomeningeal spread.

A 73 year old woman was admitted because of progressive gait unsteadiness, bilateral tinnitus, and headache for 2 months.

Her history comprised ischaemic heart disease, hypertension, familial tremor, and left Bell’s palsy 10 years previously. In 1995 she was operated on for breast carcinoma. Two years later metastasis to the axilla was treated with chemotherapy.

On admission the patient complained about bilateral tinnitus, more on the right, and severe unsteadiness of gait, up to inability to walk without aid. When sitting or lying she had no coordination problems. Examination disclosed an old left peripheral facial palsy with pathological synkinesias. The eyes were aligned in all gaze directions and their range of movement was full. There was no primary position, nor gaze evoked nystagmus by observation or while wearing Frenzel’s glasses. When performing the doll’s eyes test a broken vestibulo-ocular reflex was obtained. The head thrust test demonstrated corrective saccades during head rotation to either side. The visual dynamic acuity test performed by reading a Jaeger’s chart while oscillating the head of the patient at a frequency of 1 Hz, showed a drop of four lines of visual acuity, compared with the visual acuity while the head was stationary. The findings were indicative of vestibulo-ocular reflex insufficiency. No papilloedema or pyramidal signs were found. The ankle reflexes were absent and sensation to pinprick was decreased up to the ankle. The position and vibration sense were normal. Cerebellar functions were preserved, as judged by the finding of a normal smooth pursuit and saccades of eye movements, as well as finger-nose and heel-knee testing. When standing the patient tended to fall backwards and was unable to stand with her eyes closed. Her gait was severely atactic, without any side preference.

T1 and T2 weighted MRI of the brain with gadolinium disclosed a bilateral abnormal enhancement of the VIIth cranial nerves in the region of the internal acoustic canal, compatible with an inflammatory or infiltrative process of the nerve (fig 1).

Electronystagmography showed bilateral caloric weakness of 100%. Ocular motility was within normal limits. No spontaneous, gazed evoked, or positional nystagmus was recorded. A dynamic posturegraphy showed a combined vestibular more than visual pattern of instability. Pure tone audiometry, performed 2 months earlier, had shown a bilateral sensorineural hearing loss of 40 dB in all frequencies, with normal speech discrimination. Repeated audiometric testing showed a plateau decrease of 50 dB in both ears and decreased speech discrimination of 75% in the right ear (normal>90%), indicative of retrocochlear nerve involvement.

On lumbar puncture a clear CSF with 160 mm H2O opening pressure (normal 100–200 mm H2O) was obtained. Laboratory analysis of CSF showed 31 epithelial carcinomatous cells/mm³, increased protein content of 121 mg% (normal<50 mg %) and borderline low glucose content of 49 mg/d. Carcinoembryonic antigen (CEA) was raised (16.8 µg/l, normal<10 µg/l).

A six course therapy with intrathecal methotrexate was started: 12.5 mg of methotrexate were administered once every 2 weeks, followed by oral leucovorin (30 mg every 4 hours) on the next day. Ten weeks after the start of therapy the patient’s state remained unchanged and 2 weeks later she died.

Hearing loss as the first manifestation of carcinomatous meningitis was reported in

Figure 1 T1 weighted brain MRI shows gadolinium enhancement of both VIIIth cranial nerves in the acoustic canal.
five patients by Alberts et al.1 In all but one of their patients other associated neurological findings were present, indicative of widespread meningeal involvement by the time of cochllear manifestation. Neuro-oto logical testing performed on three patients disclosed bilateral caloric weakness in two. However, neither of these patients was reported to have vestibular symptoms. Other authors have described ataxia and hearing loss as the presenting symptom of carcinomatous meningitis. Nevertheless, in most of the reports, no conclusions were made as to whether the ataxia was due to hydrocephalus, cerebellar carcinomatous involvement, spinal cord compression, metastatic destruction of the pyramidal bone, or if it was the result of vestibular nerve infiltration. Moreover, neuro-oto logical testing was usually not performed.

The spread of neoplastic cells to the meninges occurs either directly from an adjacent tumour, or from distant primary meninges occurs either directly from an adjacent tumour, or from distant primary tumours by the blood stream, or perivascular or perivenous lymphatics. Pathological examination shows that neoplastic cells extend in the temporal bone as far as the geniculate ganglion, where the subarachnoid space terminates, but can penetrate the cribiform area of the labyrinth. Labyrinthine metastasis of the tumour is a common finding, whereas selective internal auditory canal infiltration, as in our patient, is rare.1

The proximity of the VIIIth and IXth nerves in the internal auditory canal makes both of them vulnerable to pathological changes in this location. Indeed, from the 15 pathological carcinomatous meningitis and labyrinthine involvement reported by Oshiro et al, unilateral or bilateral facial nerve palsy was documented in nine.2 Our patient had an old facial palsy after viral infection 10 years previously. Recent damage, such as by neoplastic cell involvement, would have probably abolished the facial synkinesia—evidence of a long standing, partly regener ated nerve lesion.

The syndrome of bilateral vestibular failure consists of gait unsteadiness and oscillopsia. The severe instability of stance in our patient might have been due to a polyneuropathy induced by the cancer or chemotherapy, even though gross proprioception defects were not demonstrated by testing. Our patient did not complain about oscillopsia or other visual phenomena attributable to vestibular failure. As patients with bilateral vestibular failure have impaired perception of motion, oscil-lopia is perceived less than the real retinal image slip and 30%–40% of patients with bilateral vestibular failure never complain about this visual phenomenon.1

Infectious meningitis is not rare among the manifestations of bilateral vestibular failure.1 However, carcinomatous meningitis is encountered much less and here bilateral vestibular failure is usually a part of a syndrome of meningial infiltration with multiple cranial and spinal nerve involvement, hydrocephalus, or cerebral changes.1,3 In our patient the vestibulocochlear nerves were selectively involved. The only other symptom suggestive of meningitis was her complaint about a diffuse headache. Although patients with vestibular lesions often report headache, this is usually located in the neck and probably results from disturbed vestibulocortic reflexes.1

Carcinomatous meningitis is encountered in the course of metastatic breast cancer in 1%–3.5% of patients.1 Intrathecal administration of methotrexate, radiotherapy, or the combination of both, are today the treatment options, but the optimal treatment has not been established and is individual for each patient. Despite aggressive therapy, most patients die within 6 months of diagnosis, the median survival being 6–16 weeks.1 It has been reported that response after 2 weeks of therapy is correlated with survival.1 Unfortunately, our patient did not respond to therapy.

L POLLAK
R MILD
V KOSSYCH
M J RABEY
Department of Neurology, Assaf Harofeh Medical Center, affiliated to Sackler Faculty of Medicine, Tel-Aviv University, Israel
E SHAPIRA
Department of Oncology
Correspondence to: Dr L Pollak, 1 Neve-Nir, Nes Ziona 74 042, Israel


Loss of silent reading in frontotemporal dementia: unmasking the inner speech

Presenting signs of frontotemporal dementia usually include social disinhibition, loss of initiative, compulsive features, cognitive decline, and motor symptoms. Behavioural features have recently been detailed, in an attempt to distinguish patients with frontotemporal dementia from patients with Alzheimer's disease.1,2 We report a new feature inaugurating this syndrome which could be a silent ictus, that is a prefrontal inhibitory role in the control of inner speech, through an early loss of silent reading as an inaugural sign of frontotemporal dementia. A 69 year old man, a retired baker, with no family history of neurological disease, was admitted to the neurological department for evaluation and diagnosis of a progressive dementia with movement disorders. Since the beginning of 1998 (when he was 67), his wife noticed that he had noticed that he had started to read aloud at bedtime, annoying his wife. His voice was very loud, and it was difficult for him to stop. Moreover, he often spoke alone to himself during the day or suddenly began singing, all features which were very unusual for him. Later in the same year, he showed memory impairment, loss of motivation, and frequent throat clearing sounds. In 1999, a gait disorder with occasional falls appeared, while stereotypic movements resembling temple rubbing with both hands developed. At this time, the patient presented with several depressive symptoms and became bedridden. At examination in March 2000, he was able to stop motor and vocal stereotypies for up to 1 minute. After discontinuing the self control, a rebound effect occurred and the patient showed repetitive preauricular rubbing with both hands, with an associated meaningless vocalisation. When asked why he performed these movements, he answered that it was a habit he had developed before. Severe dysarthria and drooling, with swallowing difficul ty were present, but no motor deficit or sensory loss was evidence. Bilateral grasping phenomena, perseveration, and imitative behaviour were easily elicited. Slight symmetric facial akinesia with minor dysarthria was present, but the patient was taking anti dopaminergic agents. There were no cerebel lar, pyramidal, or dysautonomy signs, or oc u-lomotor palsy. Extensive investigations were negative (including blood sample analyses, genetic testing for Huntington's disease, EEG, brain MRI, and cutaneous biopsy). Neuropsychological tests confirmed the dys-executive syndrome, with a Mattis score of 125/144 in July 1999, dropping to 87 in March 2000. In August 2000, a percutaneous endoscopic gastroscope was performed due to swallowing difficulties and a substantial loss of weight. At this time, he continuously repeated his compulsive vocalisations and utterances, mainly cursing. Treatment with tetrabenzine, flupentixol, and hydroxyzine were of little help. He died in October 2000 and there was no postmortem analysis.

The patient reported here presented with FTD, according to the current criteria.3 He progressively developed behavioural abnormalities including motor and verbal stereotypies, coprolalia, with poor self control, although he remained able to discontinue them momentarily. He performed very poorly on the frontal battery test and failed to improve under various drug regimens. Brain MRI remained generally atrophic. We suggest that the pathological process underlying his progressive loss of behavioural control was already at work when the patient became unable to read silently. In our patient, underlying both initial loss of silent reading and the most recent vocal compulsive stereotypies. Prefrontal cortical dysfunction may be the underlying pathophysiological mechanism explaining the inability to inhibit the vocalisation of inner speech in our patient, as assumed by the final clinical diagnosis.

I VERCUHEL
H H KLINER
Neurological Department, Grenoble University Hospital, 38043 Grenoble cedex 9, France
Correspondence to: Mr I Vercueil
vercuueil@lycos.com

1 Bozeat S, Gregory CA, Ralph MA, et al. Which neuropsychiatric and behavioural features distinguish frontal and temporal variants of...
The anti-Jo-1 positive inclusion body myositis with a marked and sustained clinical improvement after oral prednisone

The three major categories of the idiopathic inflammatory myopathies are dermatomyositis, polymyositis, and inclusion body myositis. The most important clinical feature distinguishing inclusion body myositis from dermatomyositis and polymyositis is the lack of response to immunosuppressive treatment. It is the experience of many clinicians that a small subgroup of patients with inclusion body myositis show at least a partial response to immunosuppressive treatment. There are no specific characteristics which can identify this subgroup. In this report we present an anti-Jo-1 positive patient with inclusion body myositis who showed a marked and sustained clinical improvement after treatment with oral prednisone.

A 74 year old man, with no relevant medical history, presented with a slowly progressive proximal muscle weakness of the lower limbs. On presentation there were no complaints of muscle weakness of the upper limbs, dysphagia, myalgia, arthralgia, or feelings of general malaise. He denied any sensory symptoms. His family history was negative for neuromuscular or rheumatic disorders and he did not use any myotoxic drugs.

Physical examination showed asymmetric proximal and distal muscle weakness (muscle strength in MRC grades: neck flexors 3, right and left triceps 4, right and left ilioossis 4, right and left gluteus maximus 4, right quadriceps 4, left quadriceps 2.5, right and left hamstring 4, right and left anterior tibial 2, left gastrocnemius 4, all other muscles 5), marked atrophy of the quadriceps muscles and low symmetric tendon reflexes. The muscles were not painful to palpation. All other aspects of the general and neurological examination were normal.

Laboratory investigations showed slightly increased concentrations of serum creatine kinase (260 U/l, normal=200 U/l). All other aspects of the routine laboratory investigation including chrocyte sedimentation rate, lactate dehydrogenase, vitamins, thyroid function tests, and antinuclear factors were normal or negative. Serum was screened for the presence of myositis specific autoantibodies (MSAs) using immunoblotting, enzyme-linked immunosorbent assay (ELISA), and immunoprecipitation as previously described. Assays were positive for the anti-Jo-1 autoantibody.

Electromyography demonstrated fibrillation potentials with positive sharp waves, polyphasia, short duration small amplitude motor unit potentials, and several high amplitude motor unit potentials in proximal and distal muscles. Nerve conduction studies were normal.

Figure 1  Cumulative MRC scores (MRCsum) and dosage of oral prednisone (mg/day) vs. time (months). MRC score is calculated by adding the MRC grades of the following muscle groups: neck flexors, neck extensors, biceps, triceps, forearm flexors, forearm extensors, ilioossis, gluteus maximus, quadriceps, hamstrings, anterior tibia, and gastrocnemius.

Muscle biopsy of the right quadriceps muscle showed the presence of small endomysial inflammatory infiltrates, invasion of non-necrotic muscle fibres, basophilic rimmed vacuoles, increased number of muscle fibres containing internal nuclei, ragged red fibres, atrophic muscle fibres, and positive staining of the sarcoclemma for HLA-ABC. Electron microscopy demonstrated the presence of 15–18 nm tubulofilaments in the cytoplasm. The diagnosis of definite inclusion body myositis was made.

Because the patient was in good general health and the degree of inflammation on muscle biopsy was rather extensive, the decision was made to start treatment with oral prednisone (60 mg once daily). Three months after the initiation of treatment a marked improvement of muscle strength was found (fig 1), serum creatine kinase had normalised (62 U/l), the anti-Jo-1 autoantibody was no longer detectable, and EMG demonstrated a significant improvement with less spontaneous activity and fewer short duration small amplitude motor unit potentials. Prednisone was slowly tapered and stopped 1 year after the initiation of treatment. Muscle strength remained stable (muscle strength in MRC grades 18 months after treatment). Prednisone was slowly tapered and stopped 1 year after the initiation of treatment. Muscle strength remained stable (muscle strength in MRC grades 18 months after treatment).

The anti-Jo-1 autoantibody is the most prevalent MSA and is found in 25% of patients with dermatomyositis and patients with polymyositis. In patients with inclusion body myositis the antibody is hardly ever detected. Until now, only three patients with inclusion body myositis have been reported in whom the antibody was found. Unfortunately, the clinical picture of these patients was not described. The relative absence of Jo-1 in inclusion body myositis is seen as support for the hypothesis that the immune response in this disease differs from that in dermatomyositis and polymyositis. It has therefore been suggested that the anti-Jo-1 autoantibody can aid in the differential diagnosis between the three entities by virtually excluding inclusion body myositis in cases of anti-Jo-1 positivity and therefore providing an additional argument for the start of immunosuppressive therapy.

The clinical and electrophysiological improvement after immunosuppressive therapy in the presented patient, together with the presence of a disease specific autoantibody, suggests a prominent role of the inflammatory response. Although it is only based on one case history, this report raises the question whether the presence of an MSA can aid in the identification of patients with inclusion body myositis who might show a response to immunosuppressive therapy. It is not known how MSAs are generated and whether they represent an epiphenomenon or whether they are somehow involved in the pathogenesis of idiopathic inflammatory myopathies. Based on their specificity for myositis it does seem likely that they are the result of a yet unidentified immunological mechanism which is specific for idiopathic inflammatory myopathies and which is, directly or indirectly, linked to the occurrence of clinical myopathy. It can be hypothesised that the presence of an MSA in inclusion body myositis is the result of an identical immunological mechanism as in MSA positive patients with dermato- myositis or polymyositis. If so, then immunosuppressive treatment would be of benefit, as in this patient. Additional studies are required to consider these questions.

In conclusion, the present data suggest that in a patient with an idiopathic inflammatory myopathy, even inclusion body myositis, and the presence of an MSA, immunosuppressive treatment should be started and continued for at least 3 months.

We thank WTM Van Eeghterts, BAW de Jong, and E Nuy-Terwindt for their expert technical assistance. This work was supported by grant 93–1112 of the Princes Beatrix Funds and grant 940–37–009 of MW-NW0.

G J D HENGSTMAN
H J TER LAAK
B G M VAN ENGELEN
Neuromuscular Centre Nijmegen, Institute of Neurology, University Medical Centre Nijmegen, PO Box 9401, 6500 HB Nijmegen, The Netherlands

W J VAN VENROOIJ
Department of Biochemistry, University of Nijmegen, Nijmegen, The Netherlands

Correspondence to: Dr B G M van Engelen b.vanengelen@czzoneu.azn.nl


Upholsterer's PIN

Posterior interosseus nerve (PIN) palsy has been recognised at least since 1905 when Guillon and Courdellonnet described a case in an orchestral conductor. In 1899 Gowers described involvement of the muscles of the
forearm in radial nerve palsy but did not specifically note damage to its important branch, the PIN. During the first world war Tinel described the anatomy without mentioning the nerve by name and without discussion of causation. By the end of the second world war the PIN had been so named.¹

The PIN consists of one bundle of motor nerve fibres at the arcade of Fröhse (the supinator arch) but divides into two bundles near its point of exit from the supinator muscle. The recurrent superficial motor branch innervates the extensor digitorum, extensor digiti minimi, and extensor carpi ulnaris; the descending or deep motor branch innervates the abductor pollicis longus, extensor pollicis brevis, extensor pollicis longus, and extensor indicis.²

The syndrome is also known as the supinator syndrome. It is distinguished from a seventh cervical root syndrome in which the triceps is involved but the wrist extensors usually are spared.

Palsy of the PIN produces the characteristic syndrome of weakness of extension of the digits and thumb with preservation of extension of the wrist which, nevertheless, may deviate radially. Sensory function, supination, and brachioradialis are not affected. Pain is often felt lateral to the elbow.

Palsy of the PIN may be caused by acute trauma in gunshot wound or pressure from a space occupying lesion. Repetitive use of the forearm has caused PIN palsy in a bar tender, violinist, swimmer, conductor, waiter, factory worker, and an embroiderer. It has also been reported with strenuous arm exercises, snow shovelling, in frisbee games and tennis playing, and after the prolonged carrying of an M60 machine gun. It has also been reported after cannulation of a forearm vein.³

We report a case of PIN palsy after repetitive movements of the forearm and we have named this variant “upholsterer’s PIN”.⁴

A 47 year old right handed woman, an enthusiastic pianist, at an upholstery class named this variant “upholsterer’s PIN”.⁴

We suggest that focal demyelination in the PIN and conduction block resulted from ischaemia due to direct pressure on the nerve at an area of anatomical constriction as a result of the repetitive action of the surrounding muscles.

Patients with PIN palsy sometimes report a history of forceful, repetitive rotation of the forearm preceding the onset of symptoms. Because we do not know of a report of PIN palsy in association with the compressing of springs, we have named this palsy “Upholsterer’s PIN”.

We are extremely grateful to Dr Elias Ragi for the nerve conduction studies and to Dr R Simpson for supplying the photographs illustrating nerve demyelination.

al with the same monoclonal antibodies and in the same Journal (see Flisser for review). Similarly, the authors lack knowledge on the initial Mexican publications regarding the association of HLA and cysticercosis. Many Mexican authors have published long ago the clinical and imaging descriptions of neurocysticercosis as well as its classification. Furthermore the authors criticise cestoidal treatment in neurocysticercosis and state that “there is no evidence that cestoidal treatment does more good than harm”. Publications by Mexican authors clearly demonstrate the usefulness of drug treatment, as does the welfare of patients (children and adults) after such treatment seen in routine work by many neurologists in Mexico. The fact that seizures and inflammation are exacerbated during treatment is the main manifestation of a cestocidal effect, as was experimentally described in cysticercotic pigs, that received treatment and had an important enhancement of the inflammatory response surrounding the parasites. Due to this, anti-inflamatory and anticonvulsant drugs are recommended in an individualised scheme.

The second part of the article—“management of epilepsy in the developing world”—misleads on the problem of cysticercosis, as it deals almost exclusively with epilepsy in children. It is well known that the association of this syndrome with neurocysticercosis is mainly with late onset epilepsy.

From these considerations, different conclusions are drawn:

- Epidemiology of neurocysticercosis is quite well known (not only in Mexico but in several countries where it has been studied)
- Imaging and serological diagnosis are useful
- Cysticidal treatment is usually beneficial to patients with neurocysticercosis
- Neurocysticercosis is a major cause of acquired epilepsy
- Prevention, measures, based on health education, targeted treatment, and swine vaccination, will probably be sufficient to control neurocysticercosis, and even to eradicate the parasite.

High psychiatric morbidity in patients with medically unexplained symptoms

Carson et al reported that one third of the patients referred by general practitioners to general neurology outpatient clinics had symptoms that were poorly explained by identifiable organic disease. Similar trends have been reported from a developing country—namely, India. Bagadia et al,

3 Sarti E, Schantz PM, Avila G, et al
4 Sarti E, Flisser A, Schantz PM, et al.
5 Plancarte A, Flisser A, Gaucci CG, et al.
6 N MURALI
7 S REHMAN
8 P S V SHARMA
9 N KAR
Department of Psychiatry, Kasturba Medical College, MANIPAL–576 119, India
Correspondence to: Dr N Murali
navankul@yahoo.com

The psychoses of epilepsy

The recent editorial by Toone serves to highlight the deficiencies in our understanding of the relation between epilepsy and psychosis. Although some aspects of this association are now better established than they were at the time of Slater’s classic report,


The inhibitory processes not only bring about the postictal state. The inhibitory processes not only contribute to the manifestation of similar processes bilaterally, but also to the production of focal reversible deficits—such as Todd’s paresis—which may persist for long periods. Is it possible that postictal psychoses are a manifestation of similar processes bilaterally involving excitatory and inhibitory influences, whereas increased inhibition plays an important part in the development and maintenance of the interictal state?

The inhibitory processes not only bring about the postictal state but are also necessary for maintaining the interictal state. Postictal and brief interictal psychoses may therefore not be so different from each other as is generally thought. As the development of seizures may be due to either disinhibition or hypersynchrony involving enhanced disinhibition, the occurrence of a seizure during psychosis may have different pathogenetic mechanisms and may indicate either disinhibition or increased inhibition. The effect on the occurrence of a seizure during psychosis may have different pathogenetic mechanisms and may indicate either disinhibition or increased inhibition. The effect on
psycosis of a seizure could thereby be either an amelioration of symptoms or their exacerbation. This may explain why seizures during postictal psychosis often exacerbate the psychosis whereas those during brief interictal psychosis may improve the psychiatric status. Different patterns of excitation and inhibition may also explain why the EEG may show “forced normalisation” in some cases of interictal psychosis. These speculations can be tested by the longitudinal examination of patients with brief psychoses, using neurophysiological and neuroimaging methods.

The important neurotransmitters involved in the inhibitory processes are GABA, opioids, and adenosine, whereas glutamate is the key excitatory amino acid. Both GABA and glutamatic acid have been implicated in the development of psychosis. Glutamate is also important for the maintenance of brain plasticity and surgesses in its concentrations may be responsible for mossy fibre sprouting in the hippocampus in temporal lobe epilepsy. These plastic brain changes associated with epilepsy raise the question whether repeated postictal psychosis eventually lead to chronic psychosis. There is a suggestion that this may indeed be the case in some patients, but few follow up studies have been published.

The above mechanisms may explain some episodic psychosis, but the enigmatic question is: Why is it that only some patients with recurrent partial complex epilepsy develop psychosis? Is it the “right” mix of inhibition and excitation? Are there substrates of key anatomical structures? Does the development of psychosis require a substratum of a structural abnormality on which the interplay of these processes acts? Until we begin to consider these questions empirically, the relation between psychosis and epilepsy will continue to remain mysterious.

by Xuereb and Hodges contains a somewhat misleading statement concerning the diagnosis of multiple system atrophy (MSA). In fact there was a consensus statement on the diagnosis of MSA, establishing three diagnostic categories reflecting differing levels of certainty: definite, probable, and possible. Its conclusion is that “the diagnosis of definite MSA can only be made after a neuropsychological examination of the CNS disclosing the characteristic density and distribution of glial cytoplasmic inclusions” in association with degenerative changes. Thus the presence of glial cytoplasmic inclusions is not confirmatory evidence, but the hallmark lesion of MSA.


Diagnostic criteria of multiple system atrophy

I think that the correspondence concerning diagnostic criteria for corticobasal degeneration and the specificity of glial cytoplasmic inclusions’ should not be closed, as the reply

by Xuereb and Hodges contains a somewhat misleading statement concerning the diagnosis of multiple system atrophy (MSA). In fact there was a consensus statement on the diagnosis of MSA, establishing three diagnostic categories reflecting differing levels of certainty: definite, probable, and possible. Its conclusion is that “the diagnosis of definite MSA can only be made after a neuropsychological examination of the CNS disclosing the characteristic density and distribution of glial cytoplasmic inclusions” in association with degenerative changes. Thus the presence of glial cytoplasmic inclusions is not confirmatory evidence, but the hallmark lesion of MSA.

P L LANTOS
Department of Neuropathology, Institute of Psychiatry,
De Crespigny Park, Denmark Hill, London SE5 8AF, UK

Correspondence to: npath@iop.kcl.ac.uk

1 Lantos PL. Diagnostic criteria for corticobasal degeneration. J Neurol Neurosurg Psychiatry 2000;6955-6.

BOOK REVIEWS


Recent years have witnessed a considerable increase in the knowledge about the genetic and molecular mechanisms involved in the programming of normal, and the genetic defects implicated in the abnormal development of the CNS. Therefore the need for good introductory texts, which focus on the morphological development and also provide information about the genetic as well as molecular processes, is paramount. The book discussed here is such a concise, summary text and reflects the experience of two distinguished educational neurologists as the co-developmental neuropathologist and the second (KEW) a paediatric neurologist/neuropathologist. The book comprises two parts each with a separate section for reference. The first part covering chapters 1–3, deals with the normal, and the second, comprising chapters 4–9, describes the abnormal development. The first two chapters are on the development of the cellular elements of the CNS and vessels, and the third chapter gives an account of the morphogenesis of CNS structures. This relatively long chapter is especially well supported with photomicrographs, informative drawings, and tabulated information. Chapter 4 gives a short, concise, and logical account of the abnormalities involved in the abnormal development, and chapter 5 deals with the phakomatoses. Chapter 6 on the CNS malformations is understandably one of the longest. It provides a detailed account of the major abnormalities, such as neural tube defects, midline malformations, cortical malformations and dysplasia, cerebellar abnormalities, microcephaly and megalencephaly, brain stem as well as spinal cord anomalies, hydrocephalus, and also changes related to vascular, skull bone, and meningeal anomalies. There are short chapters on developmental disturbances due to chromosomal aberrations (chapter 7), late anomalies (chapter 8), and finally on delay of the CNS maturation (chapter 9).

This is a concise and well written book, which makes entertaining reading even for the non-paediatric neuropathologist reviewer. The chapters are well balanced and the illustrations are of good quality. I have no hesitation in recommending this book not only for neuropathologists, especially for trainees, but also for paediatric neurologists requiring a specialist knowledge of both normal and abnormal CNS development.

TAMAS REVESZ


This book is written as part of the Fast Facts series to serve as guides to clinical practice. It is envisaged by the authors that the book will be of particular value to the reader unfamiliar with inflammatory disease of the nervous system. In the following chapter, the definitions of the disease, presentation, and early stages, it is particularly helpful to have several case histories which illustrate the various symptoms and presentations listed. Of particular value is a section on questions which patients often ask, with sensible and balanced answers in the chapter on the established condition. The criteria applied to the diagnosis of multiple sclerosis are outlined.

The book then considers treatment aspects of the disease and begins with treatment of acute attacks and symptomatic measures. Of particular interest is the section on symptomatic measures including a practical account of management of spasticity and bladder, bowel, and sexual problems. In a chapter on treatment with immunomodulators an overall view of the evidence is given as the emphasis has shifted in the past from a relapsing disease and glatiramer acetate copolymer 1 is given and brief reference to immunoglobulin. Clearly such a treatment chapter depends on an evolving data base of results from clinical trials. Paramedical staff and support groups and future trends are the subjects of the last two chapters. The practical guide to the role of the physiotherapist, occupational therapist, speech and swallowing therapist, and psychologist should be of use to the interested physician.

The authors are well respected and experienced clinicians in the field of multiple sclerosis and although the general approach and various views expressed in such a text will necessarily reflect individual or combined opinions, most of the points raised and conclusions drawn would be supported by most neurologists with an interest in multiple sclerosis. The text is not referenced in a formal way although towards the back of the book a list of references is given to selected subject areas and important clinical trials.

Overall I think that the book is a useful addition to the multiple sclerosis library and in
particular will be of value to family physicians, nurses, and therapists and probably neurologists and physicians in training as a fast reference manual. For the interested and stimulated reader further details will be found in more formal reviews of disease process and its treatment.

CLIVE P HAWKINS


Do we really choose to get out of bed in the morning or is our sense of free will merely an illusion? In an age of functional imaging can philosophy still offer any solutions to the problem of volition? Is free will compatible with the laws of quantum physics?

The subject of free will, once the province of philosophy and theology, is now fair game for neuroscience, psychology, and physics. This diverse collection of articles covers all of these disciplines, old and new, providing a ringside seat to the current arguments about the nature of free will—and even whether it exists. You are left to use your own free will (or lack of it) to judge the final outcome.

There are some complex arguments on offer but there is much to enjoy for an interested amateur—the variety of opinions reflecting an understandable lack of consensus. I particularly enjoyed the chapter by Spence and Frith on what is known of the functional anatomy of volition and the lessons from social anthropologist in McCrone’s essay. Libet, who in 1983 famously described the enormous 350 ms delay between the brain’s preparation to act and its conscious awareness of intention to move, explains why his experiments do not necessarily deny the possibility of free will. Other contributions include critiques of Libet’s work, discussion of free will in the light of obsessive-compulsive disorder and the relation of quantum physics to volition. Even if the writing is a little dense at times, you are generally rewarded for your efforts. Lastly, there is a highly personal contribution from Anthony Freeman, an ex-vicar, who—despite his surname—claims he has never taken a “positive free-choice decision” in his life. This is an unusually affordable book that performs well as a starting point for exploring modern answers to the ancient and thorny problem of free will.

JON STONE


The monographs in clinical neurosciences series is an established forum designed to bridge the gap between developments in basic neuroscience and clinical practice. It is suggested that this volume, devoted to selected neuromuscular diseases, “will be of great value to neurologists and neuroscientists”. Certainly, there can be little argument that basic science advances in these disorders, particularly in the area of molecular genetics, have been impressive in recent years. Such monographs which attempt to give a snap-shot of the current “state of the art” are therefore welcome. Importantly, many of the genetic advances are now available to the practising neurologist in the form of improved DNA based diagnostics and have therefore changed clinical practice and benefited patients. For example, muscle biopsy is often now unnecessary when certain muscle diseases can be diagnosed genetically. On the other hand, the hope that these advances will result in effective therapies for people with these disorders remains to be fulfilled. I was therefore pleased to see that in addition to chapters which neatly outline the genetic testing now available, there are chapters devoted to the thorny issue of myoblast transfer and to novel approaches to therapy in muscular dystrophies.

This volume contains 12 chapters, each written by recognised authorities. The following diseases, with clinical and genetic or immunological data, are covered; the sarcoglycanopathies, fascioscapulohumeral dystrophy, myotonic dystrophy, muscle channelpathies, congenital myasthenic syndromes, myasthenia gravis, inherited peripheral neuropathies, acute inflammatory neuropa-thies, spinal muscular atrophies, and familial amyotrophic lateral sclerosis. Inflammatory muscle diseases, chronic inflammatory neuropathies, mitochondrial diseases, and metabolic muscle diseases are notably absent. However, the editor does not claim this to be a comprehensive review of all neuromuscular disorders. The format of each chapter varies considerably. Although this is partly a reflection of a multi-author text, it is also a reflection of the degree to which basic science advances have impinged on clinical practice in the different areas considered.

So who will this book appeal to? Certainly, it would be of interest to all clinical neurologists, but particularly to those running specialist neuromuscular clinics. I think that it would also be valuable to neurology trainees developing an interest in this area.

MICHAEL G HANNA


Even when just glancing through this book the reader will be put on guard. There are two spelling errors and misalignments in the table of contents, inclusion of dystonia as a component of the upper motor neuron syndrome (page 56), confusion between dysphasia and dysphagia (twice on page 122), and a bizarre format of the references which show journals variously printed in italics or abbreviated, and with haphazard pagination. But if these are specific examples, the book as a whole is a mishmash that includes a summary of neuromuscular and autonomic physiology pitched at a sixth form level; a review of myofascial pain syndromes oddly singling out three specific conditions (the piriformis, pronator teres, and thoracic outlet syndromes); a chapter dealing with spasticity and dystonia (including contact information on how “to find a movement disorder specialist in your area”); and a chapter on equipment and injection techniques including EMG studies to localise the motor end plate, “...home to the neuromuscular junction”, and 14 drawings of various injection sites around the body in which x marks the spot. A chapter entitled Osteaming reimbursement, which means from “third party payers”, can happily be skipped by those outside the United States, although readers will note that the cost of botulinum toxin is curiously omitted. Botulinum toxin may alleviate the pain seen in spasticity and dystonia, but the mechanisms by which it does so have not been established. I suggest that those interested in learning the practical aspects of managing patients would be wise to look elsewhere for guidance. This is particularly important because, as the author acknowledges, the toxin is not licensed for pain relief. Those interested in theoretical aspects will certainly need to look elsewhere. In my view this book cannot be recommended.

G D SCHOTT
Posterior alexia after right occipitotemporal infarction

ESTRELLA GÓMEZ-TORTOSA and ANTONIO DEL BARRIO

J Neurol Neurosurg Psychiatry 2001 70: 702-703
doi: 10.1136/jnnp.70.5.702

Updated information and services can be found at:
http://jnnp.bmj.com/content/70/5/702

These include:

References
This article cites 1 articles, 1 of which you can access for free at:
http://jnnp.bmj.com/content/70/5/702#BIBL

Email alerting service
Receive free email alerts when new articles cite this article. Sign up in the box at the top right corner of the online article.

Notes

To request permissions go to:
http://group.bmj.com/group/rights-licensing/permissions

To order reprints go to:
http://journals.bmj.com/cgi/reprintform

To subscribe to BMJ go to:
http://group.bmj.com/subscribe/