LETTERS TO
THE EDITOR

Postictal psychosis related regional cerebral hyperperfusion

Postictal psychosis is a known complication of complex partial seizure in particular temporal lobe epilepsy. It usually runs a benign and self-limiting course. A postictal phenomenon with focal cerebral hypofunction (similar to Todd’s palsy), rather than ongoing seizure activity, has been postulated. Surface EEG is either normal or showing non-specific slow waves. Hence, antipsychotic medications are prescribed instead of antiepileptic drugs. Until recently, the pathogenic mechanisms have remained unknown. In this communication, we report on two patients with postictal psychosis, during which a cerebral SPECT study showed a hyperperfusion signal over the right temporal lobe and contralateral basal ganglion. As hyperperfusion in ictal cerebral SPECT is closely linked to epileptic activities, our findings support a contrary explanation for postictal psychosis.

Prolonged video-EEG telemetry study was performed in patients who underwent presurgical evaluation for epilepsy surgery. Antiepileptic drugs were withdrawn to facilitate seizure recording. A diagnosis of temporal lobe epilepsy was based on analysis of the electroclinical events and, if applicable, postoperative outcome after anterior temporal lobectomy. Psychosis was diagnosed according to the fourth edition of the diagnostics and statistical manual of mental disorders (DSM-IV) criteria of *brief psychotic disorders without marked stressor*. HMPAO-SPECT was performed during the psychotic period, which ranged from 2–4 days after the last seizure. Interictal cerebral SPECT, brain MRI, and a Wada test were performed as part of presurgical evaluation.

Patient 1 was a 34 year old Chinese woman with complex partial seizures since the age of 18. Her seizure control was suboptimal on a combination of antiepileptic drugs. Brain MRI showed a small hippocampus on the right. Interictal EEG showed bilateral temporal sharp waves and ictal recordings confirmed a right temporal epileptogenic focus. A Wada test confirmed right hippocampal memory dysfunction. Six hours after her last secondary generalised tonic-clonic seizure after video-EEG telemetry, she began to develop emotional lability, talking nonsense, motor restlessness, and auditory hallucination. A cerebral SPECT study was performed at day 4 after her last seizure. Her psychotic features persisted although she was taking antipsychotic medication (pimozide). Cerebral SPECT showed a clear hyperperfusion signal over the right lateral temporal neocortex and contralateral basal ganglion. An interictal cerebral SPECT study was repeated at 4 weeks after postictal psychosis which showed a complete resolution of hyperperfusion signal in the right temporal lobe and basal ganglia. Anterior temporal lobectomy was performed and she became seizure free after surgery.

Patient 2 was a 44 year old man with intractable complex partial seizures since the age of 30. His seizures were intractable to multiple antiepileptic drugs. Brain MRI showed left hippocampal sclerosis. Interictal cerebral SPECT showed a relative hyperfusion area over the left hemisphere. Interictal surface EEG was non-lateralising but ictal EEG disclosed a right hemispheric onset. On withdrawal of antiepileptic drugs, seven complex partial seizures with secondary generalised tonic clonic seizures were recorded within a period of 72 hours. His usual antiepileptic drugs were then restarted.

Thirty hours after his last secondary generalised tonic-clonic seizure; he began to develop emotional lability, talking nonsense, restlessness, auditory hallucination, persecutory delusion, and delusion of superstition. Cerebral SPECT study, performed 2 days later while his psychotic features persisted, showed two relative hyperperfused areas over the right temporal neocortex and contralateral basal ganglion in addition to the original hypoperfused area over the left hemisphere. An antipsychotic agent (thioridazine) was...
started after the cerebral SPECT. His psychotic symptoms resolved 2 weeks later with full recovery.

Cerebral SPECT performed during the interictal period (IP) and during postictal psychosis (PP) were analysed using an area of hyperperfusion. These areas were identified. Quantitative data at regions of interest (ROIs) were measured on coronal and axial slices containing basal ganglia (BG), mesial (MT), and lateral (LT) temporal lobe structures. Asymmetry index (ASI) was calculated as (ROI focus−ROI contralateral)/ROI focus×100%. We set an arbitrary change of ASI >+100% to be significant. Only two patients, statistically testing was not performed.

Both patients showed postictal psychosis and had a regional increase in rCBF over the right temporal neocortex and the left basal ganglia (BG) areas with full recovery.

The diagnosis of postictal psychosis requires a close temporal relation between bouts of complex partial seizures and the onset of psychotic symptoms. The diagnosis usually develops after a clinical course of approximately 10 to 14 days, which is in keeping with the hypothesis of ongoing angiogenesis.

The presence of increased rCBF relative to Todd’s paralysis after seizure.

Cerebral arteriovenous malformations (AVMs) are thought to be congenital lesions present in the vascular walls and the extracellular matrix. Their expression is retained to allow western blots. Distribution of FN and TN in the vascular walls.

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Postictal psychosis is a distinct clinical event associated with temporal lobe epilepsy.

The diagnostic protocol for postictal psychosis requires the identification of an area of hyperperfusion by abrupt withdrawal of antiepileptic drugs. The cluster of complex partial seizures precipitated by abrupt withdrawal of antiepileptic drugs.

To conclude, our results are contradictory with respect to the proposed mechanisms of postictal psychosis after partial complex seizures: a multiple case study. Epilepsia 1991;32:223–31.

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The clustering of complex partial seizures precipitated by abrupt withdrawal of antiepileptic drugs.
Previous findings showed that ED-B+FN presents with conformational modifications in its central part and results from deregulation of FN pre-mRNA. The distribution of this isoform was found to be highly restricted in normal adult tissues. By contrast, ED-B+FN exhibited widespread distribution in the vasculature of fetal tissues, including brain, and of several types of malignancies. It was therefore regarded as a marker of angiogenesis.

Similarly, the type III repeat C TN isofrom, recognised by the Ab fragment TN-11, was found to occur in the vascular walls of anaplastic gliomas. Northern blot analysis showed that the mRNA of this isoform was undetectable in normal tissues and some malignancies, but was present in large amounts in fetal tissues, including brain, and in glioblastomas.

Recent advances in the pathology of cerebral AVMs suggest that these lesions might not be static. Tyrosine kinase, an endothelial cell specific receptor upregulated in glioblastomas, was found to be highly expressed in both AVMs and in the vessels of cerebral tissue bordering the malformations, by contrast with the down regulation occurring in the vasculature of the normal brain. The pattern of distribution of structural proteins was consistent with the hypothesis of diffuse activation of angiogenesis, without specific relation to individual vessel types.

Furthermore, use of the cell proliferation marker MBP-1 showed endothelial proliferation in arterioles, venules, and capillaries of the cerebral tissue neighbouring AVMs. The present findings indicate that a FN isoform containing the ED-B on the fibronectin molecule generates conformational modifications that unmask a cryptic sequence.

The presence of angiogenic features in AVMs might result from maintenance of proliferating and remodelling potentials, or from a specific response to haemodynamic stress in vascular structures subjected to increased blood flow and pressure. Occurrence of these features also in vessels lying in areas peripheral to the nidus might be related to recruitment of the neighbouring vasculature, possibly dependent on focal ischaemia in the setting of arteriovenous shunting. However, the presence in apparently normal vasculature of molecules typically occurring in fetal tissues and malignancies indicate that cerebral AVMs might not be static lesions. Further studies are needed to ascertain whether this phenomenon results merely from haemodynamic stress or actually reflects an intrinsic growth potential. Should this second be the case, current therapeutic strategies would possibly require revision.

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Hashimoto’s encephalopathy presenting as “myxoedematous madness”

The neuropsychiatric sequelae of hypothyroidism range from lethargy and mental slowing to the florid psychotic illness referred to as “myxoedematous madness”. The last condition is characterised by frank hypothyroidism accompanied by psychosis, and may respond completely to thyroxine. More recently described is a syndrome of subacute encephalopathy, associated with high titres of thyroid autoantibodies, raised CSF protein, EEG abnormalities, and perfusion deficits in the presence of normal structural neuroimaging. In most cases, the encephalopathy occurs without any gross change in circulating concentrations of thyroid hormones, suggesting that an inflammatory process is responsible for the cerebral dysfunction. In the absence of pathological data, the evidence for a specific pathogenetic mechanism is largely circumstantial: a small vessel vasculitis and immune complex deposition have both been suggested.

Although none of the published cases of Hashimoto’s encephalopathy has described psychosis as a primary feature, it is possible that “myxoedematous madness”, a condition first described in detail by Asher in 1949 lies in a range of encephalopathic phenomena mediated by autoimmune mechanisms. This suggestion would certainly be consistent with the range of clinical presentations of other autoimmune cerebral vasculitides. As autoimmune thyroiditis is the commonest cause of hypothyroidism in this country, all these patients have been present in at least some of Asher’s original 14 cases. Although most had florid myxoedematous features at psychiatric presentation, this may simply reflect a delay of diagnosing subclinical thyroid disease before rapid laboratory assays became widely available. Many features of the present case, however, favoured an endocrine rather than an inflammatory mechanism, suggesting that the condition of “myxoedematous madness”, though rare, remains a valid diagnostic entity.

A 63 year old market stallholder who had medical or psychiatric history was brought to a local psychiatric hospital by the police. His business had been in decline for several months, and his family had noticed uncharacteristic emotional lability. In the weeks preceding admission he had experienced delusions and hallucinations, and had exhibited uncharacteristic behaviour. He had reported a vision of the crucifixion, and hearing the voice of his dead mother. He claimed that his house was occupied by the devil, drove around aimlessly in his car, and appeared constantly fearful and withdrawn. On the day of admission he had made a bonfire in the garden and burned his wife’s clothes, family photographs, furniture, and business papers. When his wife and son tried to intervene he


became aggressive and threatened them with a saw. The general practitioner was called and suspected thyroid failure, but a new psychiatrie was a severe depressive illness. Police assistance was requested because of the patient’s continuing violent behaviour.

On admission he was unemt but coop- erative and described himself as “lucky”. He denied depression, but displayed no insight into the irregularity of his behaviour. No psychotic features were seen, although during the admission he consistently rationalised all reported psychotic phenomena. He was aggra- ssive towards staff and made repeated attempts to abscond. General physical exami-nation was unremarkable. Neurological ex-
mained was normal except for spoken lan-
guage, which was fluent and grammatical, but contained word finding pauses, circum-
locutions, and occasional semantic errors (for example, “I just want to get my feet back on the table”). Formal neuropsychological testing, and a screen of laboratory tests for reversible causes of encephalopathy, were performed on admission, and results are pre-
SENTed below (column A). Attention is drawn to his mild naming deficit, and poor performance on the Rey figure, which was due to planning rather than visuospatial errors, suggesting a predominantly “dysex-
ecutive” pattern. CT and EEG were both normal, and SPECT disclosed widespread reduced perfusion, which normalised with treatment. By contrast, in the present case the EEG was normal and the SPECT abnormal-
ity was marginal and changed little, if at all, with treatment. The evidence for a significant vasculitic component to the illness is, there-
fore, unconvincing.

The mild and relatively circumscribed neuropsychological deficits coupled with florid psychotic phenomena, also contrast with the profound global disturbance of cog-
nition usually associated with Hashimoto’s encephalopathy.

This distinction suggests that microvascular disruption and thyroid hormone depletion may emphasise different aspects of the clinical range in Hashimoto’s encephalopathy. Although the present case would support Asher’s conclusion that the psychiatric features of Hashimoto’s encephalopathy in general are associated with worsened recall of verbal material, verbal fluency, and visuospatial function. Formal psychometric testing, blood tests, and SPECT were repeated, 1 year after the original examinations. Laboratory and neuropsychological results are presented in the table. It is of note that, whereas his naming ability had improved, performance on frontal executive tasks remained impaired. The appearance of the follow up SPECT dif-

f ered minimally, if at all, from the first exami-
nation.

In summary, therefore, this patient pre-

Table 1 Laboratory and neuropsychological results at presentation (A) and at 12 month follow up (B)

<table>
<thead>
<tr>
<th>Laboratory (units)</th>
<th>A</th>
<th>B</th>
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<tbody>
<tr>
<td>Full blood count</td>
<td></td>
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</tr>
<tr>
<td>Erythrocyte sedimentation rate</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>Urea and electrolytes</td>
<td>Normal</td>
<td>Normal</td>
</tr>
<tr>
<td>Liver function tests</td>
<td>Normal</td>
<td>Normal</td>
</tr>
<tr>
<td>Anticellular antibody</td>
<td>Negative</td>
<td>Negative</td>
</tr>
<tr>
<td>B12 and folate</td>
<td>Normal</td>
<td>Not tested</td>
</tr>
<tr>
<td>VDLR</td>
<td>Normal</td>
<td>Not tested</td>
</tr>
<tr>
<td>Thyroid stimulating hormone (mU/L)</td>
<td>5.4</td>
<td>0.97</td>
</tr>
<tr>
<td>Free T4 (pmol/L)</td>
<td>1.4</td>
<td>Not tested</td>
</tr>
<tr>
<td>Antithyroid microsomal antibody titer</td>
<td>25/30</td>
<td>25</td>
</tr>
<tr>
<td>Thyroperoxidase (titer)</td>
<td>10/30</td>
<td>10</td>
</tr>
<tr>
<td>WAIS-R (verbal)</td>
<td>11%</td>
<td>11%</td>
</tr>
<tr>
<td>WAIS-R (performance)</td>
<td>7th percentile</td>
<td>Not tested</td>
</tr>
<tr>
<td>Graded naming test (&gt;15)</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>Digit span forwards (&gt;5)</td>
<td>2.5</td>
<td>24</td>
</tr>
<tr>
<td>Rey-Osterreith complex figure (copy) (36)</td>
<td>Not tested</td>
<td>75%</td>
</tr>
<tr>
<td>Rey-Osterreith complex figure (recall) (30%)</td>
<td>Not tested</td>
<td>75%</td>
</tr>
</tbody>
</table>

In summary, therefore, this patient presented in clear consciousness with a first episode of acute psychosis, and evidence of subtle executive and linguistic neuropsychological disturbance, on the background of gradual behavioural and affective change. He was profoundly hypothyroid due to an autoimmune thyroiditis, but there was no clinical evidence of thyroid failure other than the abnormal mental state. The psychiatric component of his illness recovered fully, and the antithyroid microsomal antibody titre fell markedly after thyroxine replacement, although his mild neuropsychological deficits remained unchanged. Corticosteroids were not used at any stage.

The response to thyroxine does not, in itself, imply that the cerebral illness had an endocrine origin; a recent report described a patient with a subacute encephalopathic illness and compensated hypothyroidism in the presence of increased antimicrosomal antibodies, all of which responded to thyroxine replacement alone.4

Antithyroid microsomal antibody titres 1:25600 1:1600

Involuntary movements occur in above 90% of the patients in the course of the disease, the most common being myoclonus.5 Other movement disorders range from tremor, unaffected by thyroxine replacement, to hemiballism, and choreic dyskinesia. We report on a patient with CJD who presented with an alien hand.4

Alien hand sign in Creutzfeldt-Jakob disease

The clinical picture of Creutzfeldt-Jakob dis-

case (CJD) includes various movement disor-
ders such as myoclonus, parkinsonism, hemiballism, and dystonia. We report on a patient with CJD who manifested the alien hand sign. We suggest that CJD should be included in the differential diagnosis of diseases which present with an alien hand.

Creutzfeldt-Jakob disease, one of the human prion diseases, is characterised by rapidly progressive memory and motor deterioration.6 Involuntary movements occur in about 90% of the patients in the course of the disease, the most common being myoclonus.1 Other movement disorders range from tremor, unaffected by thyroxine replacement, to hemiballism, and choreic dyskinesia. We report on a patient with CJD who presented with an alien hand.

Alien hand is a rare and striking phenom-
enon defined as “a patient’s failure to recog-
nise the action of one of his hands as his own”.7 One of the patient’s hands acts as a stranger to the body and is uncooperative. Thus, there is loss of feeling of ownership but not loss of sen-
sation in the affected hand. Originally de-
scribed in callosal tumours, the aetiology of alien hand also includes surgical callosotomy,8 infarction of the medial frontal cortex, occipito-
temporal lobe, and thalamus,9 microvascular infection,10 and cortical degradation.11

A 70 year old, right handed Jewish man born in Argentina, living in Israel for the past 20 years, was admitted to the Neurology Department. Until a month before his admission, he was apparently healthy and helped in the accounting office of the village where he lived. His neurological illness had presented insidiously during the past month with untimeliness of gait and face, and easy fatigability. He also manifested behavioural changes, became aggressive, and had visual hallucina-
tions, perceiving insects and mice moving through his visual field. Often, he expressed his fear from seeing that the “ceiling was
falling over him”. His wife mentioned bizarre, useless movements of his left hand which were present from the beginning of the disease.

On admission, he was awake, bradyphrenic, and partially collaborative. His con

ver, haematology, and sedimentation rate.

were normal. His gait was ataxic on a wide base.

At times, the left arm would spontaneously rise in front of the patient during speaking or while using his right hand. He was unaware of this movement even with help. Transferred patient the left arm “was noted to have

Prominent dysgraphia and dyscalculia were noticed. Immediate recall and short term memory were severely disturbed, whereas long term memory, especially for personal life events, was relatively spared. Abstract thinking was severely affected. Bimanual move

ments, such as clapping, were extremely difficult.

The cranial nerves were normal as were ocular fundi. The motor examination showed normal force. Deep reflexes were symmetric and plantar responses were flexor. The right arm had a dystonic posture. His gait was ataxic on a wide base.

During the next 2 weeks, the patient developed multifocal leukoencephalopathy. Severe dysphasia and cognitive decline were accompanied by confusion and aggression. He became grossly ataxic, and unable to walk and perform any of his daily activities even with help. Transferred to a chronic care hospital, he died few weeks later. Postmortem examination was not allowed.

This short fatal neurological disease manifested by fulminant dementia, myoclonic jerks, and extrapyramidal and cerebellar dys-

function was strongly suggestive of CJD. The periodic EEG pattern reinforced this diagnosis. Our patient’s alien hand was part of the otherwise characteristic clinical picture of CJD, but occurred early in the disease course when no myoclonic jerks were present. We are aware of only one report of alien hand in CJD. MacGowan et al described two patients with CJD and a myoclonic alien hand syndrome. In one patient the left arm “was noted to have spontaneous movements which appeared purposeful...wandered out of her view”. In the second, the alien limb performed complex actions such as unbuttoning her blouse and removing a hair pin. Although our patient had no myoclonus or pyramidal signs when the alien hand appeared, in their patients it was associated with spontaneous or stimulus sensitive myoclonus, spastic hemiparesis, and cortical sensory loss.

The literature seems to describe distinct forms of alien hand. All share the occurrence of involuntary movements contrary to the patient’s stated intent, but the types of move-

ments differ. In the callosal form, there are purposeful movements of the non-dominant hand. In the lemniscal form, there is grasping and utilisation behaviour of the dominant hand. In the corticobasal degeneration, there are aimless movements of either hand.1 7 When a consequence of a neurogenic or vascular pathology, alien hands can perform complex acts such as trying to tear clothes or undoing buttons. The description by MacGowan et al has characteristics of the callosal form (espe-
cially in patient 2). However, our case suggests that the alien hand sign in CJD may appear in a different type, performing less complex movements which resemble those reported by Riley et al in corticobasal degeneration.12 These authors described the alien limb as “involuntarily rising and touching the mouth and eyes” (patient 1). The patient thought that she “was powerless to stop this movement” and when directed to stop responded that “she had to”. Another patient’s left arm was at times “elevated in front of him”, while he was “unaware of this situation until his attention was called to it” (patient 10). Another related phenomenon coined as “arm levitation” was reported in progressive supranuclear palsy. In these patients the arm involuntarily raised and performed semi-

purposeful movements.

One common denominator between CJD, corticobasal degeneration, and progressive multifocal leukoencephalopathy, in which an alien hand sign has also been described, is multifocality. In corticobasal degeneration, it was proposed that more than one site is affected or that a “release” phenomenon occurs accounting for the aetiology of alien hand.14 In CJD, bilateral cortical damage to motor areas might be the origin of their subsequent isolation and disconnection.

We suggest that CJD should be added to the differential diagnosis of diseases present-

ing with an alien hand with or without myo-

clonus.

We are indebted to Professor Eran Zardel, Depart-

ment of Physiology, University of California, Los Angeles, USA.

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3 Bron S, Jeynack GP. Troubles du transfert interhemisphérique. A propos de trois observa-


basic protein were not tested. Nerve conduc-
tive studies were consistent with a predomi-
nately motor demyelinating peripheral neu-
ropathy (table). Her symptoms improved spontane-
ously and she was discharged home after 2 weeks. For 2 years she was asympto-
matic on a gluten free diet.

At the age of 12 she presented acutely with
severe abdominal pain and 8 days after a weekly
intake of bread meant to be gluten free. Two
weeks later, due to persisting gastrointestinal
symptoms, her parents excluded the bread from
her diet. After 2 further weeks, while the abdomi
nal pain was gradually improving, she had a new
episode of acute weakness in the lower limbs and
sensory abnormalities in-
cluding burning paraesthesiae. On neurologi-
cal examination the legs showed marked
depression in muscle power; absent deep
tendon reflexes, and a reduction in pain and
temperature; light touch, perception of posi-
tion, and vibration were preserved. Walking
was impaired and the patient was bedridden.
Otherwise the examination was normal.

A haemogram showed white cell counts of
7900/mm³. Laboratory investigations were
within normal values as in the past. IgA and
IgG, AGA, EMA, and IgA and AR A assayed
by ELISA and IF were again negative. Nerve
conduction studies confirmed the presence of
a predominantly motor demyelinating neu-
ropathy (table). The parents refused consent
for a lumbar puncture or nerve biopsy.

Over the next 2 weeks her neurological dis-
abilities spontaneously improved until full
recovery was complete. After 4 weeks, AGA,
EMA, and AR A were still negative.

On her most recent admission, 1 year after
the onset of her first neurological symptoms,
she is still on a strict gluten free diet and has
no residual symptoms or signs.

The natural history of celiac disease is well
known and the typical celiac enteropathy is
often associated with several other disorders.
However, as celiac disease is a relatively
common and lifelong condition, it is likely that
some of these associations may occur by
chance.

This patient, who was diagnosed as having
frank celiac disease at the age of 6 months,
 experienced two episodes of acute peripheral
neuropathy, at the age of 10 and 12 years,
respectively. Two major pieces of evidence
strongly support the assumption of a gluten
derived disease: (1) the episodes occurred on
both occasions when gluten was accidentally
reintroduced in the diet; and (2) the response
to a gluten free diet was reasonably rapid,
 occurring within weeks.

The present case, however, differs clinically
from those with neurological involvement pre-
viously reported. In the paediatric age group,
in fact, neurological complications of celiac
disease are rarely encountered and are mostly
confined to the CNS: to the best of our
knowledge, there are only two previously
reported cases of PNS involvement in children
with celiac disease. In both cases, however,
these were chronic axonal polyneuropathies
presenting during a gluten free diet.

In both episodes in the present case neuro-
physiology was strongly suggestive of a
demyelinating peripheral neuropathy, which
is most commonly attributed to a direct
immune mediated attack to the myelin. By
contrast, wallerian and axonal degeneration
may be caused by vasculitis, and nutritional,
metabolic, and toxic factors.

An autoimmune pathogenesis in associ-
ation with strong evidence of a genetic
susceptibility has been proposed for celiac
disease. Although it is well established that
AGA, EMA, and AR A are reliable indicators
of sensitisation to gluten at least at the time
of diagnosis, in the clinical practice at follow
up, during a gluten challenge, pathological
values of these antibodies may not be detected.
In the present case the time course of the disease
might be suggestive of an antibody mediated
response. However, we could not detect
pathological concentrations of AGA, EMA,
or AR A antibodies either during the course of
the disease or at follow up.

It is known that in celiac disease many
immunological perturbations can occur out-
side the gastrointestinal tract. Crossing of
the antigens through a damaged small intestinal
mucosa, deposition of immune complexes in
target organs, a reduction in immune surveil-
lance, mechanism of molecular mimicry, and
activated T cell response may contribute to
the pathogenesis of the diseases associated
with celiac disease. Direct toxic effects of
gladin and vitamin deficiency are other pos-
sible pathogenic mechanisms of damage to
the nervous system. Although we ruled out
a vitamin deficiency it is still questionable
whether a toxic neuropathy can be the case.

In conclusion, this case shows two major
issues: an acute polyneuropathy can be a
complication of celiac disease in childhood
and its benign course could help in the
understanding of the underlying pathogenic
mechanisms.

We are grateful to Professor Angela Vincent
(Oxford) for her helpful suggestions in reviewing
the manuscript.

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Electrophysiological study suggestive in both episodes of an acute demyelinating peripheral neuropathy
conflated to the lower limits. Values were within normal limits as the upper limits

<table>
<thead>
<tr>
<th></th>
<th>1st Episode</th>
<th>2nd Episode</th>
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<tbody>
<tr>
<td></td>
<td>Peroneal ³v</td>
<td>Tibial ³v</td>
</tr>
<tr>
<td>MCV (ms)</td>
<td>26</td>
<td>27</td>
</tr>
<tr>
<td>DL (ms)</td>
<td>74</td>
<td>74</td>
</tr>
<tr>
<td>SCV (ms)</td>
<td>7.3</td>
<td>8.0</td>
</tr>
<tr>
<td>CMAP (µV)</td>
<td>3</td>
<td>3</td>
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<tr>
<td>F wave latency (ms)</td>
<td>70</td>
<td>72</td>
</tr>
<tr>
<td>Sural ³v</td>
<td>38</td>
<td>42</td>
</tr>
<tr>
<td>AMP (µV)</td>
<td>16.2</td>
<td>16.8</td>
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MVC=motor conduction velocity; DL=distal latency; CMAP=compound motor action potential; SCV=sensory conduction velocity; AMP=amplitude; L=left; R=right.
examined using a rating scale for the examination of frontal release signs (FRSS), with nine operationally defined items, each on a seven point semiquantitative scale. The nine reflexes were paratonia and palmonental, hand grasp, foot grasp, glabellar, rooting, snout, and visual/tactile sucking reflexes. Neuropsychological measures included the assessment of frontal lobe function (trailmaking tests A and B, behavioural dyscontrol scale, and the controlled word association test) and generalised cognitive impairment (CAMCOG). Depression was assessed using the Hamilton rating scale for depression, 15 item geriatric depression scale, and diagnostic criteria for DSM IV major depressive disorder. Family history of depression, wish to die, and suicidal intent within the past year were also recorded, as were blood pressure and a checklist for chronic physical illness.

Total FRSS scores and scores on FRSS subscales were compared between groups using the Mann-Whitney U test for independent samples. In the peripheral vascular disease group, a correlation matrix for total FRSS score against DSMIV depression, CAMCOG score, behavioural dyscontrol scale score, verbal fluency score (total number of words beginning with F, A, and S) and trailmaking test times was examined using the Spearman correlation coefficient, controlling for age, sex, blood pressure, and chronic physical illness. Behavioural dyscontrol scale scores, trailmaking A/B test times, and verbal fluency scores were first converted into binary variables according to whether they were at/above or below the median value for the group. CAMCOG score was divided into subjects scoring 69 or above or less than 69. Those associations with a two tailed significance of 0.1 or less were then entered into a linear regression equation using the stepwise method.

Patients with peripheral vascular disease had a higher mean score on the frontal release signs scale than controls (5.8 (SD 4.6) i 1.7 (SD 1.0)), Mann-Whitney U=144.500, Z=3.33, two tailed p<0.001, as well as on glabellar and rooting reflexes (table). Only one variable (trailmaking B test time) was entered into the equation; this accounted for 23% of the variance in FRSS score (B=4.6, 95% confidence interval (95% CI) (B=1.3–8.0, p=0.01).

In peripheral vascular disease, there is limited information available concerning the interrelationship and neurological sequelae of coexisting cerebrovascular disease. Phillips et al found greater impairment in psychomotor speed and abstract reasoning in patients with peripheral vascular disease than age/sex matched controls, with less significant differences between the groups in verbal fluency, concentration, abstract thought, perception, and constructional skills.1 Another study by the same group found poorer performance in patients with peripheral vascular disease than matched controls on visual memory, trailmaking B test, and visuospatial skills. Patients with peripheral vascular disease were also equally impaired in these areas compared with a matched group of stroke patients.5

Small numbers of patients, which may also have obscured other significant findings between the two groups, limit the present study. However, there is some evidence that clinically relevant cerebrovascular disease may accompany peripheral vascular disease and that reconnotent disruption of frontal subcortical brain function may not present with hard neurological signs. As it is possible that silent brain infarction was present in patients with peripheral vascular disease, further studies incorporating brain imaging are required before there can be a clearer understanding of the relation between peripheral and central vascular pathology.

I thank Dr Robert Howard for supervision of this study and Professor Baskerville and Mr Paul Jackson for allowing me to interview patients under their care. The study was carried out as part of a University of London PhD thesis.

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Factitious clock drawing and constructional apraxia

A 45 year old man presented with a 1 day history of headache, possible seizures, and left sided weakness. On the day of presenta-
tion the patient’s wife had twice found him, inexplicably, on the floor. After the second such episode she brought him to hospital for evaluation. Examination disclosed a complete left hemiplegia and hemianesthesia, although muscle tone was documented to be normal and the plantar responses downgoing bilaterally. Brain CT was normal and routine blood examination was unremarkable. There were no further seizure-like episodes and the patient was transferred to this hospital 10 days later. Hemiplegia uneventfully resolved, for possible angiography and further investigations.

He was an exsmoker with hypercholesterolaemia and peripheral vascular disease which had been treated by a left femoral angioplasty 5 years earlier. The angioplasty was complicated by the occurrence of an ankle, which was related to dye injection, and phenytin had been prescribed for a short time thereafter. There was a remote history of heavy alcohol use, but he had been abstinent for several years. His father had had a stroke at the age of 65.

Six months earlier the patient had also collapsed at home and been taken to hospital with a left hemiplegia. Brain CT at that time was normal, as were carotid Doppler studies and an echocardiogram. During that admission to hospital, several generalised seizure-like episodes were seen, some with retailed consciousness, and he had again been started on phenytin therapy. A follow up computerised tomography brain MRI was normal and it was concluded that the hemiplegia was non-organic in origin. He was described to have made a gradual, near complete, recovery from this first hemiplegic episode and was scheduled for an imminent return to work at the time of his relapse.

On transfer to this hospital the patient was alert, oriented, and cooperative. Although up to date on current affairs and able to describe the investigations performed at the transferring hospital, he scored only 23/30 on a mini mental state examination, with absent three word recall, impaired registration, and poor copying of a two dimensional line drawing. Further bedside neuropsychological testing showed other findings indicative of constructional apraxia and left hemineglect. Specifically, when asked to draw a clock with the time at 10 minutes to 2 o’clock, all the numbers, and the clockhands, were placed on the right hand side of the clock outline (figure A). Copying of three dimensional line drawings was also significantly impaired (figure B). While asked to face a block, the patient did so only minimally to the right of the midpoint (58% of the distance from the left side).

Cranial nerve examination suggested an inconsistent and inconsistent left hemianop sia to confrontation testing but was otherwise normal, including bilaterally symmetric optokinetic nystagmus. Motor examination showed paralysis of the left arm and leg, with bilaterally symmetric bulge, tone, and deep tendon reflexes. The plantar response was flexor bilaterally. Sensory examination showed decreased pinprick and absent light touch, joint position sense, and vibration sense on the entire left side. There was also impaired perception of a tuning fork’s vibration on the left side of the forehead, with a distinct demarcation in the midline. The rest of the physical examination was unremarkable.

Brain CT and MRI, CSF examination, and routine EEG were normal. Routine haematological and metabolic analyses plus erythrocyte sedimentation rate, serum lactate, prothrombin time/partial thromboplastin time, fasting serum glucose, HbA1c, serum Ig survey, and thyroid stimulating hormone were all within normal limits. A hypercoagulability profile was negative. A lipoprotein profile showed mild hyperlipidaemia with increased low
density lipoprotein (3.92 mmol/l) and triglycerides (4.30 mmol/l) and low high density lipoprotein (0.73 mmol/l). Serum phenytoin concentration was therapeutic at 74 μmol/l. An ECG was normal.

Ophthalmological consultation and formal visual field testing demonstrated a concentrically constricted field of mild degree in the right eye and tunnel vision in the left eye.

The patient consented to overnight video-EEG monitoring and was seen on multiple occasions to move his left arm and/or leg in a normal fashion, at one point using the left arm to readjust his bed covers shortly after arousal from sleep, before glancing briefly at the video camera and completing the task with his right arm. The prolonged EEG was normal.

A formal neuropsychological assessment performed in hospital documented impaired attention, concentration, and working memory, as well as several atypical calculation and spelling errors, the second involving unusual “near miss” letter substitutions or reversals (for example, “anixety”, “excecutive”). The formal testing identified no evidence of visuospatial deficits or reversals (for example, “anixety”, “excecutive”). The formal testing identified no evidence of visuospatial deficits or reversals (for example, “anixety”, “excecutive”).

The inability to copy line drawings or to draw a clock is, from a neurologist’s perspective, typically associated with parietal lobe dysfunction, usually of the non-dominant hemisphere, especially if associated with left hemispatial neglect. To our knowledge, this is the first reported case of factitious clock drawing and constructional apraxia. Bedside mental status testing also demonstrated the more common simulated deficits of impaired attention and absent three word recall. In retrospect, the severe neglect on clock drawing was perhaps “too good to be true”, especially in the light of the near normal line bisection demonstrated on the same day. The mirror image distortion of the house was also very unusual and, furthermore, the mirror reversal itself is evidence of lack of clinical neglect. The distortion of the cube, however, could easily be misinterpreted as evidence of organic constructional impairment if seen in the absence of the other relevant clinical and laboratory information.

During follow up, the patient admitted to feeling tremendous occupation related stresses, and described how he had come to both fear and detest his job. Given the clear benefit to the patient of removal from his work environment, the relapse of his symptomatology just as he was scheduled for return to work after his first non-organic hemiplegic episode, and the intentionality required to feign poor clock drawing and constructional apraxia, there is much to support a diagnosis of malingering. Nevertheless, classification as a factitious disorder is at least as justifiable in view of the patient’s willingness to undergo medical investigations, including video monitoring.

It is unclear how or when the patient acquired the information needed to mimic a constructional apraxia. Previous bedside neuropsychological evaluations may have served to familiarise him with the format of such testing, acting as an impetus to research the issue of stroke and focal brain deficits (which might also have occurred after his father’s stroke), much in the same way he is now researching conversion disorder, thereby discovering what expected answers should look like. Despite repeated questioning, however, no evidence could be gathered from the patient to support this speculation.
appropriately. Neurological examination showed contralateral gaze preference, supranuclear vertical gaze palsy, difficulty converging, left sided flaccid hemiparesis, and dense, left sided hemianesthesia. Deep tendon reflexes were absent on the left and Babinski's reflex was present on the left. In addition, visual extinction and neglect were present.

At the time of onset of right sided weakness the patient insisted that he was “fine,” and an ambulance was called over his objections. After being extubated, the patient acknowledged that he had had a stroke, but, despite his hemiparesis, insisted that he was ready to go home and go back to work. His belief in his ability to walk led to near falls, and he was maintained closer to the nurses’ station for closer observation. He told the nurses that someone else’s arm was in his bed. On one occasion, holding up his left arm with his right, he told the nurse to, “take it away; it keeps scratching me.” That the left arm “smelled funny” was another reason he wanted the nurses to take it away.

Four weeks after the stroke he first acknowledged that his left arm belonged to him, although he continuously recalled the left arm as otherwise. By this time he had a moderate hemiplegia and recognized “a little weakness,” but continued to insist that he was well and able to return to work. By the 6th week another patient more consistently acknowledged that he was weak on the left side of his body. A request for disabled housing “so that I won’t be a burden to my family” seemed to indicate an appreciation of his inability to walk, but he was showing, within an hour of making such statements the patient might insist that after a week’s exercise he would be ready to return to work. His awareness of his hemiplegia fluctuated for 8 weeks after stroke before becoming fixed, but remained shallow after 12 weeks; he no longer planned to return to work and applied for social security disability insurance “because they say I’m disabled.”

The patient’s mood was remarkably cheerful and optimistic. A week after the stroke he was noted to praise extravagantly the hospital food, and the nurses found him “talkative.” When he arrived on our ward 11 days after stroke he was still overexcited, and in a later paper he presented a case in which there was “a certain agitation, which expresses itself by exaggerated loquacity, a decrease in attention, and a tendency to erotic ideas.”

Epileptic cardiac asystole

A patient is reported on with habitual episodes of collapse and loss of consciousness associated with EEG evidence of focal epileptiform discharges. Simultaneous ECG recordings disclosed 25 seconds of cardiac asystole after the onset of electrical seizure activity. After changes to antiepileptic medication and treatment of seizures, isolated bradycardia was seen much more frequently associated with consciousness loss. In summary, we present a case of mania accompanying anosognosia with a right thalamic haemorrhage. The coexistence of mania and anosognosia may be more common than previously appreciated. The association with anosognosia implies that the mechanisms implicated in the pathogenesis of secondary mania may be similar to those of anosognosia. The absence of evidence of abnormal parietal, temporal, or frontal lobe function by functional MRI in this case is intriguing.

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less commonly (only 1 of 74 seizures recorded). A review in 1996 of the “ictal bradycardia syndrome” showed only 15 documented cases in the literature of either bradycardia or asystole associated with seizures. Most patients had temporal lobe seizures. The longest duration of asystole previously reported is in a 17 year old man with temporal lobe epilepsy who sustained a 22 second pause in cardiac output. More typically the asystolic periods in documented cases are in the region of 5–10 seconds. Shorter duration asystole may not compromise cerebral function sufficiently to cause loss of consciousness. Implantation of a cardiac pacemaker is advocated but does not ensure that lapses of consciousness are eliminated if these are directly related to the seizure rather than to the secondary asystole. We report on a patient with epileptic cardiac asystole of 25 seconds duration demonstrated by prolonged simultaneous EEG/ECG monitoring which responded well to pacemaker insertion.

A previously well 34 year old right handed builder was referred with a 1 year history of fortnightly episodes of loss of consciousness. There was no associated warning, aura, chest pain, or palpitations and the patient was only aware of the episode once consciousness was restored. 16 Channel ictal EEG (eight channels illustrated with ECG) showing electrographic seizure onset and subsequent bradycardia and asystole.

Gain

Paper speed : 1.34 cm/s

Filter setting : Lf : 35 Hz
restored and he found himself lying on the floor. On recovery there was no confusion, drowsiness, dysphasia, or diuresis. Often, however, he sustained soft tissue injuries to his face and scalp.

Witnesses reported that the patient would, without warning, suddenly collapse to the ground where he would remain unrousable, inaccessible, and motionless for 90 to 120 seconds. On two occasions he appeared confused and disoriented immediately before a collapse. During the period of unconsciousness he would demonstrate no involuntary movements, orofacial automatisms, or cyanosis but he would become pale and "ashen" while staring straight ahead with a glazed look. Observation of the episode his hour would return to normal and within 2 minutes he would have fully recovered. Unusually during one reported episode of unconsciousness he was seen to briefly extend the fingers of both hands.

He was admitted to his local hospital and CT, MRI, interictal EEG, and 24 hour ECG were normal. No episodes were witnessed while he was an inpatient but they were thought to be epileptic in origin and therefore he was started on phenytoin, with no benefit. Carbamazepine was added, again with minimal effect.

The patient was then referred to the Epilepsy Assessment Centre of The National Society for Epilepsy and National Hospital for Neurology and Neurosurgery for further investigation and management.

Cardiovascular and neurological examination was normal as were MRI and routine interictal EEG. Sixteen channel ambulatory EEG using an Oxford Instruments digital EEG receiver was performed continuously for 340 hours before an episode was captured. Interictally rare spikes were seen over the right hemisphere but he would become pale and "ashen" while staring straight ahead with a glazed look. On resolution of the episode his hour would return to normal and within 2 minutes he would have fully recovered. Unusually during one reported episode of unconsciousness he was seen to briefly extend the fingers of both hands.

Of the asystole. In a series of 26 patients with but serious consequence of partial seizures. The EEG became visible 15 seconds before the episode the QT interval on the ECG remained within normal limits. The EEG became visible again 16 seconds into the asystolic period, at 07:04:34 (figure A), persisting for 8 seconds before being obscured by movement and muscle artefact. Twenty four hours after the first EEG change, at 07:04:58, the ECG changed from sinus rhythm at 90 bpm to a brief period of sinus bradycardia, followed by a period of asystole with only very occasional ventricular complexes lasting 10 seconds (figure B). After a few seconds of bradycardia then tachycardia, sinus rhythm was restored. Throughout the episode the QT interval on the ECG remained within normal limits. The EEG became visible again 16 seconds into the asystolic period, at which time it was dominated by diffuse slow amplitude activity at <1–2 Hz which persisted for 10 seconds (figure C). This was followed by marked attenuation of the EEG activity over the next 10 seconds before large amplitude generalised rhythmic <1Hz activity became apparent. Diffuse theta activity was seen for a further 15 seconds before the EEG returned to its resting state.

A VVI permanent pacemaker was inserted. The phenytoin was withdrawn and replaced by lamotrigine. Carbamazepine was left unchanged. The patient was discharged, his medication left unaltered, and at follow up 9 months later reported no further episodes.

Cardiac dysrhythmias are an uncommon but serious consequence of partial seizures. Our case is unusual because of the duration over a period of 26 years. A series of 26 patients with 74 temporal lobe seizures in which simulta-
nous EEG and ECG recordings were acquired, ictal arrhythmias occurred in 52% of seizures, the commonest being irregular abrupt changes in heart rate, (both acceleration and deceleration) occurring towards the end of the period of EEG abnormality. Interictally, patients with epilepsy seem no more likely than age and sex matched healthy subjects to experience arrhythmias although in one study patients with epilepsy had a faster ventricular rate and a longer QT interval than controls. It has been hypothesised that there is later- alisation with respect to central autonomic cardiac control with an increase in heart rate seen after an increase in activation of amygdala and inactivation of the left hemisphere and a decrease in heart rate on right hemispheric inactivation. Experimental stimulation of the rostral posterior insular cardiac arhythmia and a secondary central arrhythmia is possible only with simultaneous cardiac arrhythmia and a secondary central arrhythmia is possible only with simultaneous EEG/ECG recordings.

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Respiratory insufficiency in a patient with hereditary neuropathy with liability to pressure palsy

Hereditary neuropathy with liability to pressure palsies (HNPP) is an autosomal domi-
nant disorder, the molecular basis of which is a 1.5 Mb deletion in chromosome 17p11.2 including the peripheral myelin protein-22 (PMP-22) gene. HNPP typically presents recurrent pressure palsies of peripheral nerves, such as the auxillary, median, radial, ulnar, or peroneal nerves, at common entrapment sites. Respiratory muscle weakness has not been previously reported in HNPP. We describe a patient with HNPP, who, despite respiratory failure and proximal muscle weakness were prominent features.

The patient started to have dyspnoea on exertion at the age of 44. At the age of 47, he noticed a slowly progressive weakness of the pelvic girdle and lower limbs. At the age of 57, he experienced difficulty in going up stairs. However, he was almost independent in daily life. At the age of 60, he was admitted to Narita Red Cross Hospital with an episode of respiratory failure and a patient with a coma due to CO, narcosis (PCO2 117.6, PO2 64.0). Responding to mechanical ventilatory support, he completely recovered consciousness within a day. His respiratory condition in the daytime improved to that previously. However, he needed mechanical ventilation during sleep because of nocturnal hypventilation.

The patient had no history of diabetes mellitus, pulmonary or other medical problems. There was no familial history of neurological disorder, including entrapment neuropathies. After a few months, he noted that in his teens he had experienced some episodes of right peroneal and right axillary nerve palsies which resolved themselves over a few months.

In a neurological examination, the patient's mental state and cranial nerves were normal. Evidence of muscular atrophy and lumbar lordosis was found. The muscular atrophy was prominent in the shoulder girdle, intercostal muscles, paravertebral muscles, and pelvic girdle, and moderate atrophy was present in all four limbs (figure). There was moderate weakness of the shoulder and pelvic girdle and mild weakness of the distal limbs. The thorax showed poor respiratory movement, and the patient showed paradoxical movement of the abdomen in the supine position. Tendon reflexes were hypoactive in all limbs. The patient's sensations of touch and pain were mildly impaired in the four limbs. He was unable to perform a 90° sit-up movement. His vital capacity was 1.9 l (55% of the normal mean) in the sitting position, but 1.3 l (38%) in the supine position. The percentage of forced expiratory volume in 1 second (FEV1) was normal (99%). Haematological and serological studies gave normal results. No monoclonal or polyclonal proteins were detected. IgG and IgM antibodies to gangliosides GM1 and GD1b were negative. Analysis of CSF showed 1 lymphocyte/mm³ and 25 mg/dl protein. Motor nerve conduction studies showed prolonged distal latencies in the right median (8.8 ms (normal value in our laboratory <4.6)) and ulnar (6.2 ms (normal<3.6)) nerves, and moderate decreased conduction velocities in the right median (45 ms (normal>45)), ulnar (45 ms (normal>45)), tibial (35 ms (normal>38)), and peroneal (29 ms (normal>41)) nerves. There were moderate decreases in the amplitude of compound action potentials in all the nerves tested, and an amplitude reduction of 50% was detected across the cubital tunnel of the right ulnar nerve. Minimum F wave latencies were prolonged in all the nerves tested. Mild latency in the right phrenic nerve was slightly...
mally thin axonal myelin sheaths. The density of the myelin sheath and some abnormalities biopsy showed scattered tomaculous thickening of the myelin sheath and some abnormally thin axonal myelin sheaths. The density of myelinated fibres was reduced (5726/mm²). A gene analysis disclosed a 53% gene dose of PMP-22 related to normal controls, using Southern blots of DNA digested with EcoRI. Given the possibility of superimposing demyelinating neuropathy, especially chronic inflammatory demyelinating polyneuropathy, oral prednisolone (60 mg/day) was given for 1 month. However, the patient’s clinical condition did not respond to this treatment. Pulmonary dysfunction and proximal muscle weakness were almost steady during the next 3 years.

We examined the patient’s elder sister (64 years old), elder brother (62 years old), and younger sister (58 years old), although they had no neurological complaints. All of them had experienced generalised hyporeflexia or areflexia but no weakness or sensory loss, and nerve conduction studies showed moderate conduction slowing with accentuation at the common entrapment sites, suggesting demyelinating neuropathy. Our patient recalled experiencing recurrent episodes of transit entrapment mononeuropathies, and the familial occurrence of asymptomatic entrapment neuropathy was detected by nerve conduction studies. The presence of tomacula, and genetic analysis confirmed a diagnosis of HNPP. However, the patient’s dominant clinical features—respiratory failure and proximal muscle weakness—were atypical for HNPP. Although respiratory muscle weakness has been reported in hereditary motor and sensory neuropathy (HMSN), there has been no report of respiratory insufficiency associated with HNPP to our knowledge.

The weakness of the truncal muscles, including the respiratory accessory muscle, is a possible cause of respiratory failure in our patient. On the other hand, he had experienced hypopventilation in the supine posture and paradoxical movement of the abdomen, which suggested diaphragmatic weakness. Also, chest radiography showed poor movement of the diaphragm. Although the prolongation of distal latency in the phrenic nerve was mild considering the severity of respiratory failure, assessment of axonal loss is not possible with phrenic nerve stimulation. In fact, phrenic nerve latency is not necessarily associated with pulmonary dysfunction in HMSN. Diffuse proximal weakness in our patient is an uncommon finding as for HNPP. Mancardi et al. reported on three patients with progressive sensory-motor polyneuropathy associated with 17p11.2 deletion, and the initial symptom of one patient was proximal weakness in one arm. We propose that our patient represents a clinical phenotypic variability among HNPP. It may be necessary to pay attention to respiratory function in HNPP.

We thank Dr T Yamamoto from the University of Occupational and Environmental Health for the gene analysis and Mr T Nagase from Chiba University for his technical help with the sural nerve biopsy.

Spinal accessory neuropathy and internal jugular thrombosis after carotid endarterectomy

Spinal accessory neuropathy is a rare complication of carotid endarterectomy (CEA). Internal jugular venous thrombosis after CEA has also been reported rarely, but is likely more common; as internal jugular
venous thrombosis is often asymptomatic, or presents with non-specific pain, it is probably unrecognised in many cases. Concurrent ipsilateral spinal accessory neuropathy and internal jugular venous thrombosis after CEA is expected to be rare, and this is underscored by the few published cases. Despite this apparent rarity, a common pathogenetic mechanism for postoperative spinal accessory neuropathy and internal jugular venous thrombosis may well be present, at least in some cases, which may lead to the consideration of the possibility of both when either is discovered.

We report on a patient who developed right spinal accessory neuropathy and internal jugular venous thrombosis after right CEA. A 59 year old man underwent right CEA for possibly symptomatic stenosis. Angiography had shown 90% stenosis of the right internal carotid. The operation was done under general anaesthesia. The carotid bifurcation was unusually distal, necessitating a long dissection and high retraction. No immediate postoperative complications were evident. The next day, the patient complained of mild pain at the operative site, but he did not notice any weakness. The pain spread into his right shoulder within several days; at that time, he also noted difficulty raising his right arm. His symptoms worsened further a few weeks later. The symptoms persisted, and he presented for neurological evaluation 4 months after CEA. At that time, he had some induration along the incision site and a palpable cord within the right supraclavicular fossa. There was moderate atrophy of the right sternocleidomastoid and trapezius, with right shoulder drooping and minor right scapular winging. Right arm abduction produced more prominent scapular winging and was limited to 90 degrees due to pain and weakness. Electrodiagnostic studies were consistent with partial right accessory nerve neuropathy with minor denervation of the right trapezius. Cervical ultrasonography and MRI demonstrated right internal jugular venous thrombosis. The patient was treated with a shoulder support, analgesics, and low dose aspirin. There was no significant clinical change 1 year after CEA. Repeat electrodagnostic studies were consistent with chronic right spinal accessory neuropathy, and repeat ultrasonography showed persistent right internal jugular venous thrombosis. The spinal accessory neuropathy was first reported as a complication of CEA in 1982. Since then, there have been several case reports and small series. A 1996 review of reports of cranial neuropathy after CEA disclosed only one patient with spinal accessory neuropathy in over 3000 cases. Although the authors did not include several other reports which, taken together, may seem to suggest a somewhat higher incidence, the overall small number of reported cases in proportion to the hundreds of thousands of CEAs that have been done worldwide suggests that clinically significant spinal accessory neuropathy is a rare complication. Most reports of spinal accessory neuropathy after CEA may be more frequent. The cause of spinal accessory neuropathy after CEA is usually not well established, but intraoperative nerve stretching or compression from retraction is most often involved. Delayed onset (after 3 weeks) has been noted in some; for these patients, postoperative inflammation and scarring seem more likely causes. Spinal accessory nerve transection or ischemia/infarction (arterial or venous) are other possibilities. As in our patient, high carotid dissection and retraction have been reported to precede spinal accessory neuropathy. The spinal accessory nerve courses along the internal jugular vein near the internal carotid artery, typically well above the carotid bifurcation. This should make it clear that a high carotid bifurcation would place the nerve at risk. Whether this realisation may lead to any technical modification to decrease the risk of spinal accessory neuropathy in those with a high bifurcation is unclear.

From our search, internal jugular venous thrombosis after CEA has been reported in only one case. As Southcott et al noted, retraction of the internal jugular during CEA may cause complete occlusion, leading to thrombosis from venous stasis or endothelial injury. Other causes of internal jugular venous thrombosis include jugular cannulation, blunt cervical trauma, and a hypercoagulable state. Internal jugular venous thrombosis may occur within a week after neck dissection, often with recanalisation after several months. The presence of induration about the incision site and a palpable supraclavicular cord in our patient led us to suspect venous thrombosis. Internal jugular venous thrombosis may include headache, dysphagia, and anterolateral neck pain, tenderness, and swelling. In addition to paresthesia, induration, fever and leukocytosis may occur. Common pathogenetic mechanisms for spinal accessory neuropathy and internal jugular venous thrombosis may include intraoperative trauma, haematoma, and postoperative inflammation and scarring. Although the onset of either spinal accessory neuropathy or internal jugular venous thrombosis in our patient cannot be determined precisely, it is likely that both developed at about the same time. The delayed worsening of the spinal accessory neuropathy in this case suggests postoperative scarring or inflammation. The lack of improvement after a year, as in some other cases of spinal accessory neuropathy after CEA, implies considerable axonal injury, but does not clarify the manner of injury.

**Ischaemic stroke in a sportsman who consumed MaHuang extract and creatine monohydrate for body building**

We report the first case of extensive cerebral infarct in a young sportsman consuming high doses of MaHuang extract and creatine monohydrate. This should alert the sport community to possible serious adverse effects of energy supplements.

A 33 year old man had a severe aphasia on awakening in the morning of 23 January 1999. He did not complain of any other symptoms. He was referred to our department on 26 January 1999. He had a Wernicke aphasia with a slight right sided face and arm weakness and a right Babinski sign. His blood pressure was 140/60 and his pulse 54 per minute. Brain CT showed signs of extensive left middle cerebral artery infarct. Cervical ultrasound duplex scanning and cerebral angiography were normal. Cerebral CSF examination showed 112 Y agnik PM, Chong PST. Spinal accessory nerve transection or internal jugular venous thrombosis after right CEA. From our search, internal jugular venous thrombosis after CEA has been reported in only one case. As Southcott et al noted, retraction of the internal jugular during CEA may cause complete occlusion, leading to thrombosis from venous stasis or endothelial injury. Other causes of internal jugular venous thrombosis include jugular cannulation, blunt cervical trauma, and a hypercoagulable state. Internal jugular venous thrombosis may include headache, dysphagia, and anterolateral neck pain, tenderness, and swelling. In addition to paresthesia, induration, fever and leukocytosis may occur. Common pathogenetic mechanisms for spinal accessory neuropathy and internal jugular venous thrombosis may include intraoperative trauma, haematoma, and postoperative inflammation and scarring. Although the onset of either spinal accessory neuropathy or internal jugular venous thrombosis in our patient cannot be determined precisely, it is likely that both developed at about the same time. The delayed worsening of the spinal accessory neuropathy in this case suggests postoperative scarring or inflammation. The lack of improvement after a year, as in some other cases of spinal accessory neuropathy after CEA, implies considerable axonal injury, but does not clarify the manner of injury.

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Drug addiction in sportsmen and sportswomen is becoming a major concern in our societies, involving both professionals and amateurs. As energy supplements, thought to enhance performance, are easily available in some countries without the need of medical prescription, everybody should be aware that these so called “benign” drugs may have major adverse effects.

This first case report of an extensive cerebral infarct in a young sportsman consuming high doses of Ma Huang extract and creatine monohydrate should alert the sport community to this possible adverse effects of energy supplements, particularly when used in multiple combination.

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Petroclival meningioma as a cause of ipsilateral cervicofacial dyskinesias

Hyperkinetic movement disorders of facial and neck muscles such as blepharospasm, hemifacial spasm, facial myokimia, and cervical dystonia have rarely been associated with unilateral brainstem or posterior fossa pathologies. We report a case of unilateral cervicofacial dyskinesias due to an ipsilateral petroclival meningioma.

A 32 year old left handed woman complained about left sided facial dysaesthesia of the upper quadrant of her face for 1 year. In addition she had intermittent ipsilateral headache. A left sided facial palsy and hypogeusia developed. When progressive hearing loss and persistent ipsilateral tinnitus occurred she sought medical advice. She was referred to our department for further treatment after a large tumour in the left cerebellopontine angle had been demonstrated by MRI. On admission, the left corneal reflex was absent. There was marked hypoaesthesia of the first two divisions of the left trigeminal nerve and a mild left facial palsy. There was also hypogeusia of the left half of the tongue. Speech was slightly dysarthric. During examination dystonic and choreic movements of the left facial muscles were seen. The dystonic grimacing increased when the patient was being observed. There were also intermittent jerky dystonic head movements with turning of the head to the left, associated with slight elevation of the left shoulder. The facial movement disorder was clearly different from hemifacial spasm. There were no tonic or clonic synchronous contractions of facial muscles and no signs of involuntary coactivation. The patient barely noted the dyskinesias. Audiometry showed a hearing threshold at 30 Db on the left side and lack of stapedius reflex on the left side. Oculovestibular response to caloric stimulation was
decreased on the left side. Furthermore, there was mild left dysdiadochokinesia.
Neurography of the facial nerve was normal on both sides. Needle myography of the left frontalis and orbicularis oculi did not show signs of denervation.

An MRI study showed a large gadolinium enhancing tumour within the left cerebellar peduncle, with marked displacement of the brainstem to the contralateral side (figure A and B). Intracranial angiography showed a discrete blush of the tumour as typically seen in meningiomas. The tumour was totally removed by a combined transpetrosal supratentorial and infratentorial suprasygmental approach. The postoperative course was uneventful and there were no new deficits. The facial palsy improved slightly as well as the trigeminal hypaesthesia. Audiology remained unchanged. Postoperative imaging showed no residual tumour and the displacement of the brain stem within the posterior fossa had resolved (figure C). Marked improvement of the left sided craniofacial dyskinesias occurred during the next weeks.

The postoperative improvement of the dystonic and choreic grimacing and the cervical dystonia indicates a causal association between the petroclival meningioma and the segmental hyperkinetic movement disorders. Such a relation is supported also by the absence of a family history of movement disorders and the absence of previous exposure to neuroleptic medication. Hyperkinetic movement disorders due to tumours of the brainstem or of the posterior fossa have been reported only rarely. Asymmetric blepharospasm was recently found in a patient with an ipsilateral mesencephalic cyst.1 Hemifacial spasm was seen in patients with paroxysmal neurohumors, meningiomas, and epidermoid tumours of the cerebellum and pontine angle.1 Acoustic neuromas and anaplastic pontocerebellar glioma can be associated with facial myokymia and spastic paretic facial contractures.1 Also, cervical dystonia due to tumours of the cerebellopontine angle have been reported recently.1

The pathophysiological mechanisms responsible for dystonic movement disorders caused by structural or functional lesions of the brainstem are not fully understood. The possibility of denervation supersensitivity of cranial nerve nuclei has been proposed previously. Alternatively, enhanced excitability of brainstem interneurons has been suggested. This pathophysiological mechanism is supported by the findings of blink reflex studies in patients with blepharospasm, spasmodic dysphonia, and cervical dystonia. Tolosa et al. found significantly less inhibition of the test stimulus polysynaptic late response and marked enhancement of the recovery curve of stimulus polysynaptic late response and found significantly less inhibition of the test response in healthy subjects.5 Marked enhancement of the recovery curve of the stimulus polysynaptic late response and suggested a supraspinal mechanism of action of surgical treatment.

Acute multifocal cerebral white matter lesions during transfer factor therapy

Transfer factor is an active substance of unknown structure present in dialysable leukocyte extract which is assumed to transfer cell mediated immunity in an antigen specific fashion.3 The mechanisms of action of transfer factor are still far from clear; in vitro dialysable leukocyte extract increases macrophage activation and interleukin (IL) 1 production and enhances leukocyte chemotaxis and natural killer function. Transfer factor has been reported to stimulate the cell mediated antigen specific response in patients with various infections;4 therefore, treatment with transfer factor has been suggested in patients with selective deficits in cell mediated immunity such as some refractory neoplasms and chronic infections. Moreover, it has been used in the treatment of uveitis.4 Admistration of dialysable leukocyte extract has seemed to be free of hypersensitivity, long lasting side effects, or complications, except for transitory hyperpyrexia.3

We report on a patient in whom multiple cerebral white matter lesions developed after taking dialysable leukocyte extract orally for uveitis. A 28 year old man was admitted to hospital because of headache, mental confusion, and right hemiparesis. He had had recurrent bilateral uveitis from the age of 12 to 14 with relapse in the right eye. In January 1995 retinal vasculitis was diagnosed at fundoscopy and in July 1995 he started oral transfer factor as dialysable leukocyte extract twice a week. He complained of generalised weakness after the second dose and the referring symptoms developed after the third dose.

Neurological examination on admission showed mental confusion and severe right spastic hemiparesis with spasticity and Babinski’s sign. No fever or meningismus were present. Laboratory examinations on admission showed a slight increase in total serum protein (8.4 g/l, normal 6.0–8.0 g/l, although the serum protein fraction was normal), antistreptolysin titer (355 IU/ml, normal <200 IU/ml), and anticardiolipin IgG (30 IU/ml, normal ≤10 IU/ml). Negative results were obtained for HIV and other intravenous contrast administration (figure). The brain stem, cerebellum, and cervical spinal cord were spared.

The patient had a progressive spontaneous remission of symptoms and signs. The neurological examination 20 days after onset showed slightly increased deep tendon reflexes on the right side and was normal 40 days later; all laboratory analyses were normal except for antistreptolysin titer (265 IU/ml). Two MR scans at 1 and 4 months after onset showed progressive resolution of lesions without contrast enhancement but a new large lesion in the left occipital white matter, which showed moderate contrast enhancement. A final MR scan 20 months after onset showed further regression of lesions without contrast enhancement but a new large lesion in the left occipital white matter, which showed moderate contrast enhancement. At present, 5 years after the event, the patient is in a good state of health and neurological examination and laboratory tests are normal.

The close temporal relation between assumption of dialysable leukocyte extract therapy and appearance of cerebral white matter lesions in our patient supports the possibility that the association of the two events might not be casual. Despite the absence of biopsy, we reasonably excluded

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Axial T1 weighted image after contrast administration showing multiple focal lesions in the periventricular white matter and left centrum semovlaus exhibiting thick annular enhancement.

the diagnosis of vasculitis or neuro-Behcet's disease although in the absence of biopsy. In fact, the clinical, laboratory, and MRI findings were not typical and a low titre of anticardiolipin antibodies is found in 2% of healthy subjects. The occurrence at different time of focal cerebral white matter lesions highly supports the diagnosis of multiple sclerosis, but some clinical and laboratory findings in our patient are not typical for this condition. Mental confusion is not common at the onset of multiple sclerosis whereas it is often found in acute disseminated encephalitis. In addition, CSF without oligoclonal banding argues against a diagnosis of multiple sclerosis, whereas it is commonly found in acute disseminated encephalitis. On the other hand the possibility that acute disseminated encephalitis may recur has been accepted and on the basis of the patient's clinical picture and CSF, we favoured such a diagnosis.

The pathogenetic mechanisms underlying the triggering, development, and duration of multiple sclerosis and acute disseminated encephalitis are still far from clear despite the progress made in unravelling them. Some findings suggest that acute disseminated encephalitis and multiple sclerosis lie at the two poles of an autoimmune range, in which autoantigen reactivity is only temporary and direct against a single antigen in acute disseminated encephalitis and multiple antigens in multiple sclerosis.

Although the hypothesis that dialysable leucocyte extract had triggered an autoimmune disorder in our patient cannot be proved, our finding is in line with the report of multiple cerebral lesions after therapy with IL-2 in patients with malignancies or HIV infections. On the other hand, the fact that acute disseminated encephalitis is often correlated with the administration of foreign proteins, such as during vaccinations or viral infections led us to postulate in this patient a mediated immunological mechanism. Therefore, an immunological cross reaction between viral antigens (or other foreign material contained in vaccines) and various parts of the nervous system resulting in acute disseminated encephalitis might have occurred. As already noted, dialysable leucocyte extract contains a multitude of immunostimulating or potentially activating substances so it is impossible to pinpoint which one could have been responsible for the demyelinating effect seen in our patient. This notwithstanding, our finding indicates that neurological surveillance is worthy in patients assuming dialysable leucocyte extract therapy.

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**Fahr's disease and Asperger's syndrome in a patient with primary hypoparathyroidism**

Abnormal calcium phosphate metabolism has not previously been associated with Asperger's syndrome, a form of pervasive developmental disorder. Nor have symmetric localisations of the basal ganglia, dentate nuclei and cortex, or Fahr's disease—whether idiopathic or associated with hypoparathyroidism—previously been associated with this handicap. We present the case of a 24 year old man with Asperger's syndrome, primary hypoparathyroidism, and multifocal brain calcifications.

According to medical history, the patient's mother had received weekly injections of Depoprovera during pregnancy. A single child born after a normal term delivery, he underwent surgery for an inguinal hernia at 3 weeks. Developmental milestones were only moderately delayed. At 9 months, he rolled instead of crawling. He walked at 15 months, spoke at 2 years with poor articulation, and still speaks in short, unelaborated sentences. His social and language development lagged in grade school and he occasionally got into fights. In late adolescence, antisocial behaviour took the form of shoplifting and repeated long distance calls to pornographic hot lines. As an adult, his social adaptation remains poor: he currently lives with his mother and works irregularly as a dishwasher in a restaurant. He is indifferent, isolated, and resists novelty. He enjoys repetitive and solitary activities such as slot machine games and playing the piano.

Neurological examination showed bilateral hyperreflexia, mild imprecision of fine finger movements, dysgraphaesthesia on sensory testing, and a manneristic gripping handshake. There were no extrapyramidal movements. Coordination was not impaired. He had a history of bilateral weak adduction of the right eye. He had a left facial weakness and right ptosis. He had hyperreflexia of the neck and long tract signs in the left leg. He walked with a broad-based gait. There were no extrapyramidal signs.

As an adult, his social adaptation remains poor: he currently lives with his mother and works irregularly as a dishwasher in a restaurant. He is indifferent, isolated, and resists novelty. He enjoys repetitive and solitary activities such as slot machine games and playing the piano.
symptoms. His IQ score was in the low range (WAIS-R=85 at the age of 13; Barbeau-Pinar=82 at the age of 17). He also presented an impairment on the Tower of London test, which measures executive function, and in a task assessing the understanding of others’ intentions. These two findings are reliably present in pervasive developmental disorders, in this IQ range. In addition, his performance on the Tower of London test disclosed impaired performance in procedural learning. Psychiatric assessment showed scores above the cut off for autism according to the autism diagnostic interview (ADI), a standardised interview that requires specific training and those administering it to have a 0.90 reliability with other researchers. The subject was positive for the diagnosis of autism, being above cut off values in the three relevant areas of communication, social interactions, restricted interests, and repetitive behaviours. Nevertheless, he did not present delay in language acquisition or morphological atypicalities in language development, which corresponds to DSM-IV criteria for Asperger’s syndrome.

Brain CT showed dense calcium deposits in the basal ganglia, thalamus, cerebellar dentate nucleus, and orbitofrontal cortex, consistent with Fahr’s disease (figure). Serum calcium was increased activity in the basal ganglia relative to the cerebral cortex. A fine banded karyotype was normal. Serum calcium was 1.55 mM (normal 2.15–2.55 mM), phosphate 1.69 mM (normal 0.70–1.40 mM), and ionised calcium was 0.80 mM (normal 0.90–1.34 mM); urinary calcium was 0.8 mM (normal 0.25–6.3 mM). Serum parathyroid hormone was below 0.6 mIU/l (normal 1.19–1.34 mIU/l); urinary calcium was 0.5 mM/l. Ionised calcium was 0.80 mM/l at pH 7.4 (normal 1.19–1.34 mIU/l); urinary calcium was 0.8 mM (normal 0.90–1.34 mIU/l), and a nuclear scan of the parathyroid glands showed an absence of activity. With a combination of vitamin D3-calcium supplementation and cognitive-behavioural therapy, serum calcium, and phosphate concentrations normalised and his behaviour improved marginally.

Asperger’s syndrome is a subtype of pervasive developmental disorder of unknown aetiology. Evidence for involvement of specific brain regions in pervasive developmental disorder is scarce and inconclusive. Although the tempo-orbital region is the most often involved in pervasive developmental disorders abnormal functioning of the frontal upper spinal cord is also suspected from replicated findings of executive function deficits and from occasional findings of frontal hypometabolism or abnormal macroscopic brain morphology. Abnormal cell counts and morphology in the cerebellar hemispheres have also been reported, but the relation of these findings to autism is controversial.

Fahr’s disease consists of symmetric calcifications, located mainly in the basal forebrain and cerebellum, which are of various aetiologies. Cognitive and behavioural abnormalities may be present when calcifications occur early in development. A fortuitous association between pervasive developmental disorder and Fahr’s disease, given the paucity of published cases, is plausible in the presented patient. Nevertheless, our case suggests that abnormal phospho-calcium metabolism could produce an autitic symptomatology when brain calcifications cause specific neuropsychological deficits, due to their localisation. For example, errors of social judgement may be related to calcifications of the orbitofrontal cortex, whereas dysfunction of fronto-basal ganglia circuits may contribute to repetitive and ritualistic activities. Additionally, developmental lesions of the basal ganglia and cerebellum may contribute to the abnormalities of sensory attention, procedural learning, and motor intention in this patient.

The findings that the clinical picture of autism can be found in a wide range of medical conditions giving rise to organic brain dysfunction is not new, but the relation between these conditions and autism is often considered meaningless. By contrast, this case, similarly to some others suggests that dysfunction in key brain circuits may result in behavioural and cognitive abnormalities currently indistinguishable from idiopathic pervasive developmental disorder. This case also suggests that careful biological assessment of this group of patients may disclose focal brain lesions associated with identifiable cognitive deficits. Could these clinical coincidences be instructive for a neurodevelopmental model of autism?

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Preoperative sagittal T1 weighted MRI of the cervical spine with gadoximin enhancement. A retro-odontoid and extradural mass displacing the spinal cord is seen at the craniovertebral junction.

Hypertrophic atlantoaxial ligaments: an unusual cause of compression of the upper spinal cord

The craniovertebral junction can be affected by several pseudotumorous masses extradurally located, such as rheumatoid panus, hypertrophic non-union of odontoid fracture, post-traumatic cicatrix, synovial cysts, tumorous calcium pyrophosphate dihydrate crystal deposition, tophaceous gout, calcification of ossicles calcium pyrophosphate dihydrate crystal deposition, tophaceous gout, calcification of craniovertebral junction. A hypertrophic ligamentum flavum could be an important cause of cervical spinal cord compromise.

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Selective hemihypaesthesia due to tentorial coup injury against dorsolateral midbrain: potential cause of sensory impairment after closed head injury

A 63 year old woman who fell off her bicycle had a left temporal region head injury with evidence of initial loss of consciousness of 5 minutes and scalp excoriation of that area. On arrival at our hospital 30 minutes later she was alert and oriented. Cranial nerve functions, including extraocular motion and hearing function, were preserved. Pain and temperature sensations of the right side, including her face, showed a 70% decrease compared with the left side; however, position and vibration sensations were normal. Other neurological examinations, including motor function, coordination, and deep tendon reflexes, were normal. The patient’s only complaints were left temporal headache and right hemihyphaesthesia.

Brain CT on admission showed a discrete and linear high density at the left ambient cistern without other intracranial lesions. On the next day CT showed an obscure low density at the dorsolateral midbrain in addition to the previous lesion (figure). Brain MRI, taken 3 days later, demonstrated a retroparenchymal lesion, at the surface of the left dorsolateral midbrain in high intensity on a T2 weighted image. The high intensity lesion corresponding to haematoma on CT was seen in the ambient cistern (figure). Taking both CT scans and MRI into consideration, this case was diagnosed as traumatic midbrain contusion.

The loss of pain and temperature sensation improved gradually and the patient was discharged 2 weeks later.

T2 weighted images 1 month later showed a more localised lesion in the same area. The coronal slices showed a high intensity lesion at the level of lower midbrain coinciding with the tentorium level, disclosed as a low line between the occipital lobe and the cerebellar hemisphere (figure). The neurological deficits almost disappeared 6 months later.

Somatosensory impairment including pain is one of the most common complaints among patients with craniocervical injury. Responsible lesions for sensory impairment, detectable by neuroimaging studies, almost always accompany associated neurological deficits. To our knowledge, a selective injury at the spinothalamic or trigeminothalamic tracts due to closed head injury has not been highlighted in the neurological literature.

The MR images in our case showed a discrete lesion at the dorsolateral midbrain in addition to the previous lesion (figure). Brain MRI, taken 3 days later, demonstrated an intraparenchymal lesion, at the surface of the left dorsolateral midbrain in high intensity on a T2 weighted image. The high intensity lesion corresponding to haematoma on CT was seen in the ambient cistern (figure). Taking both CT scans and MRI into consideration, this case was diagnosed as traumatic midbrain contusion.

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Toluene induced postural tremor

We read with interest the article by Miyagi et al and comment on the medical treatment of toluene induced tremor. Microdialysis experiments in rats have shown that inhalation of toluene increases extracellular γ-aminobutyric acid (GABA) concentrations within the cerebellar cortex which probably explains why GABA agonists including benzodiazepines (for example, clonazepam) are not very effective in toluene induced tremor and ataxia. Rat experiments also showed a 50% reduction in brain catecholaminergic neurons. Degeneration of certain cerebellar pathways is probably responsible for the loss of this dopaminergic innervation. Dopamine agonists could therefore be of potential interest in the treatment of toluene induced tremor. This hypothesis was explored in a recently described case, which showed remarkable clinical and iconographic similarities with that described by Miyagi et al: (a) long history of chronic toluene inhalation, (b) marked postural tremor, (c) progressive worsening of the symptoms despite abstinence from inhalant misuse, and (d) mild cerebellar atrophy and marked low signal intensity in globus pallidi, thalami, red nuclei, and substantia nigrae on T2 weighted MRI. As our patient’s tremor was progressive, medical treatment with a dopamine agonist was considered. One particular agent (amantadine) caught our attention because it had proved successful in the treatment of postural tremor in the context of heredodegenerative disorders in which the dentatorubro-oillary system is affected. In addition, there is evidence that catecholaminergic pathways are also involved in this type of ataxias, supported by the fact that patients identified by amantadine hydrochloride (100 mg twice daily) abolished postural tremor and ataxia completely over a 3 month period. Subsequently, the treatment was discontinued, which resulted in relapse of the tremor and ataxia. He was rechallenged to amantadine, which progressively offered him the same clinical improvement as in the first 3 months. After 3 years the treatment was discontinued without any sign of relapse.

Although this finding needs confirmation, amantadine treatment could form a new approach in the medical treatment for toluene induced tremor and ataxia. Intratable cases would then justify a more aggressive approach such as venoventricular shunting.

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**Early diagnosis of subependymal giant cell astrocytoma in children with tuberous sclerosis**

Nabbout et al have attempted to identify the risk factors for the progression of subependymal nodules into giant cell astrocytomas (SEGAs) in patients with tuberous sclerosis complex. In attempting to develop screening strategies that avoid iatrogenic morbidity, patient inconvenience, and excess cost, it is essential that the natural history of these lesions in the general population of patients with tuberous sclerosis complex be understood well.

We think that there are two problems with this study that should make the physician cautious about accepting the factors identified by Nabbout et al as a basis for a screening programme. The first is that this study was performed in a population that had been referred to a tertiary medical centre, and then had been further selected by virtue of having had at least 3 years tertiary centre follow up and needing two MR scans of the head. The prevalence of astrocytomas and risk factors, and hence the positive predictive value of any screening test in a general population of patients with tuberous sclerosis complex is likely to be different from those described in the highly selected group studied in this paper. The second point is that the authors have made a potentially misleading decision to exclude more than half their study sample because they do not have lesions close to the foramen of Monroe. It is not certain that all SEGAs arise from lesions close to the foramen. They may arise in the fourth ventricle. Furthermore, the late presentation of many lesions in the lateral ventricles has, in the past, precluded accurate determination of their point of origin. The study selects 24 of 60 patients who had met their entry criteria but does not state how many of the excluded 36 patients had no subependymal nodules or nodules that were not “near the foramen of Monroe”. Including these patients is given for what constitutes proximity to the foramen. The authors were apparently not blinded at the point when they selected which patients had lesions near to the foramen and therefore there is an obvious issue of potential selection bias.

The consequence of excluding these patients may have been that false significance is given to their results. The data they present are fragile. Consider, for example, the consequence of introducing from these 36 non-selected patients a hypothetical single case that had a family history of tuberous sclerosis complex and a subependymal nodule which evolved with gangliolysis. The effect would be to remove the stated statistical significance (using Fisher’s exact tests) between the outcome and both of these explanatory variables.

Identifying the risk factors that can tell us which subependymal lesions will become invasive is important. As subependymal nodules and SEGAs seem to be histologically identical it is unlikely that pathologists will provide an answer. The study of Nabbout et al suggests some new risk factors exist and ignores others. However, the definitive answer will not be provided by studies of selected samples but by follow up of a population based sample of patients with tuberous sclerosis complex. In the absence of such a study we would be cautious about implementing screening programmes based on what may be misleading criteria.

**Atypical form of amyotrophic lateral sclerosis: a new term to define a previously well known form of ALS**

We read with interest the article by Sasaki et al concerning the atypical form of amyotrophic lateral sclerosis (ALS). The pattern of muscular atrophy in these patients differed from that of typical ALS in that severe muscle involvement was confined to the upper limbs, predominantly the proximal portion and shoulder girdle, sparing the face and the legs until late in the disease’s course or until the terminal stage.

Over the past few years, we have noticed a growing interest in the renaming of this clinical form of ALS, which has its origins and predomination in the proximal muscles and upper limbs and little or no effect of either a bulbar nature or in the lower limbs.

Thus Hu et al coined the term ‘flail arm syndrome’, to describe a subgroup of patients affected by ALS that predominantly showed signs of lower motor neuron disease in the upper limbs, without significant functional involvement of other regions on clinical presentation. This subgroup of patients was clinically characterised by the display of progressive atrophy and weakness affecting the proximal muscles in the upper limb muscles in a more or less symmetric manner.

Recently, along these lines, Katz et al described a series of patients affected by an adult onset motor neuron disorder restricted to the upper limbs, with severe proximal and varying degrees of distal involvement, calling it amyotrophic brachial diplegia syndrome.

Other terms used in the past refer to this form of ALS have been dangling arm syndrome, suspended form, or orangetan sign, dead arm sign, bifurcated palsy, rizzemotic amyatrophy, and the idea of naming it a distinctive phenotype of a neurogenic
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Isolated dysarthria

We read with interest the article by Urban et al. Using transcranial magnetic stimulation, the authors demonstrated electrophysiologically evidence for a central monophasis of the tongue in patients with isolated dysarthria from stroke. As in their patients transcranial magnetic stimulation induced absent or delayed corticalcortical responses at the tongue, the authors ascribed isolated dysarthria to interruption of the corticobulbar pathways. We agree.

Finally, we are in complete agreement that the corticopontocerebellar tract function, Urban et al investigated cerebellar blood flow in patients with isolated dysarthria using HMPAO-SPECT. They concluded that the corticopontocerebellar tract is preserved in isolated dysarthria because of no evidence for cerebellar diaschisis on SPECT. Their SPECT findings on cerebellar blood flow were similar to our results. However, we wonder whether cerebral cortical blood flow was preserved in their patients, because our SPECT study suggested frontal cortical dysfunction as an underlying mechanism of isolated dysarthria. Langhammer et al showed that the corticodentromental plasticity was evident in three of seven patients reported by Urban et al and in two of 12 by us. This indicated that isolated dysarthria originates from interruption of corticosubcortical networks indispensable for speech output, involving the thalamocortical and corticolimbic fibres as well as the corticobulbar fibres. In fact, lacunar infarctions around the internal capsule-corona radiata are likely to underlie these ascending and descending projections.

To assess corticopontocerebellar tract function, Urban et al investigated cerebellar blood flow in patients with isolated dysarthria using HMPAO-SPECT. They concluded that the corticopontocerebellar tract is preserved in isolated dysarthria because of no evidence for cerebellar diaschisis on SPECT. Their SPECT findings on cerebellar blood flow were similar to our results. However, we wonder whether cerebral cortical blood flow was preserved in their patients, because our SPECT study suggested frontal cortical dysfunction as an underlying mechanism of isolated dysarthria. Langhammer et al showed that the corticodentromental plasticity was evident in three of seven patients reported by Urban et al and in two of 12 by us. This indicated that isolated dysarthria originates from interruption of corticosubcortical networks indispensable for speech output, involving the thalamocortical and corticolimbic fibres as well as the corticobulbar fibres. In fact, lacunar infarctions around the internal capsule-corona radiata are likely to underlie these ascending and descending projections.

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Motor cortical excitability in Huntington’s disease

We read with great interest the paper of Hanajima et al reporting that intracortical inhibition of the motor cortex is normal in patients with chorea of various origins. At variance with the results we previously found: a reduced intracortical inhibition in a group of patients with genetically confirmed Huntington’s disease. Hanajima et al suggest that the discrepancies between the two studies in terms of CAG repeat number in patient selection as they included patients with early stage Huntington’s disease to “study the pathophysiology of chorea unaffected by other disorders movement.” They postulated that our cases, because of the reported correlation with a dyskinetic rating scale, had a more advanced stage of the disease possibly with coexisting dystonia or rigidity. These assertions deserve some comments.

The mean disease duration of our nine patients with Huntington’s disease was 6.2 (4.1) years which is actually shorter than the duration of the six patients reported by Hanajima et al. (8.3 (5.9) years). Most of our patients could be considered in an early stage of the disease, the Unified Huntington’s disease rating scale, and none presented dystonia, rigidity, or any other additional movement disorder. In this regard, however, it should be pointed out that bradykinesia is often associated with chorea in patients with Huntington’s disease and may even precede the appearance of choreic dyskinesia.1 Chorea itself is often reduced in the more advanced Huntington’s disease stages.1 It is unlikely, therefore, that any neurophysiological approach can test purely chorea even in the early Huntington’s disease stages. In addition, different mechanisms are involved in Huntington’s disease and other choreas as suggested by the lack of impairment of somatosensory evoked responses and long latency stretch reflexes in the second.2

We were not really surprised at the results of Hanajima et al as we do share their opinion that patients with Huntington’s disease may be characterised by large individual differences in the involvement of motor cortical areas. Actually, three patients in our study showed an amount of intracortical inhibition within the confidence limits of the control population. We also think that the impairment of intracortical inhibition is likely to develop during the disease progression as we did not find any change in four patients, two of them already reported,3 with positive DNA testing but completely asymptomatic.

The discrepancies between the two studies are more likely to be explained, at least in part, by some methodological differences. For instance, the amplitude of the control response was larger in our set (approximately 1.0 mV compared with 0.5 mV in the study of Hanajima et al). This may induce a different sensitivity of the test, and the amount of intracortical inhibition in our normal controls is greater (see also4) than in the study of Hanajima et al.

When interpreting the results of studies with paired transcranial magnetic stimulation pathophysiological it should be kept in mind that similar changes of intracortical inhibition have been shown in patients with various movement disorders (focal dystonia, myoclonus, parkinsonism, restless legs syndrome, Tourette’s disorder), but also in different diseases such as amyotrophic lateral sclerosis.5 We think, therefore, that the impairment of intracortical inhibition cannot be regarded as the marker of a specific pathophysiologial mechanism, but is likely to reflect a non-specific imbalance of inhibitory and facilitatory circuits within the motor cortex.

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intracortical inhibition is often decreased even in normal subjects. The 80% of the threshold for relaxed muscles must correspond to different values relative to the threshold for active muscles in patients from that in normal subjects. (2) The intracortical inhibition is decreased in FVd of TBI and stroke disease. This slight abnormality could be detected with their method but not with ours because their method has better sensitivity in detecting an abnormality than ours. Whichver is true, the intracortical inhibition must be normal or slightly disturbed in Huntington’s disease.

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Critical closing pressure: a valid concept?
Czosnyka et al recently published a study investigating the clinical significance of critical closing pressure (CCP) estimates in patients with head injury. We see problems both with the theoretical foundation of their CCP concept and with the interpretation of their results.

Firstly, the physiological meaning of both formulae of CCP presented (CCP1 and CCP2, respectively) is questionable. The implication of both presented equations is that the instantaneous value of cerebral blood flow velocity (FV(t)) at a given moment t is equal to arterial blood pressure at the given time (ABP(t)) minus CCP divided by cerebrovascular resistance (CVR):

\[ FV(t) = \frac{ABP(t) - CCP}{CVR} \]

(1)

At the time of systolic and diastolic pressure values (ABPs, ABPd), respectively, it follows that systolic and diastolic FVs (FVd, FVs) should be equal to (ABPs-CCP)/CVR and (ABPd-CCP)/CVR, respectively. However, it is well known that the vascular resistance valid for the static pressure/flow connection (CVR0, concerning mean pressures and flows) is different from and is in general much higher than resistances determining dynamic pressure/flow relations (CVR1) as in the case of pulsatile pressures. Therefore, equation 1 cannot be applied to describe dynamic flow. This can be best illustrated using the frequency domain approach (ABP=mean pressure; FV=mean flow velocity; A1=amplitude of the pulsatile pressure wave; F1=amplitude of the pulsatile flow wave):

\[ FV(t) = \frac{ABP - CCP}{CVR0} \]

(2)

Inserting equations 2 and 3 into the frequency domain equation for CCP2 of the authors:

\[ CCP2 = A1F1/\text{FV} \]

leads to

\[ CCP2 = A1F1/\text{FV} \times (ABP - CCP) = A1F1/\text{FV} \times (ABP - CCP) \times CVR0/\text{CVR1} \]

(4)

Therefore, CCP2 is only in the case of CVR1=CVR0 equal to CCP. Under the more realistic assumption that CVR1 is equal to about half of CVR0 it follows for CCP2:

\[ CCP2 = 0.5A1F1/\text{CVR0} \]

With decreasing CVR1/CVR0 ratios, CCP2 becomes more and more dependent on ABP and independent of CCP. In any case, without exact knowledge of the CVR1/CVR0 ratio, equation 4 is useless for a valid CCP calculation.

The second criticism concerns the correlation of the calculated FVs with the actual ABP found by the authors (r=0.5; p<0.05). According to the original idea of Burton, CCP represents a certain mean ABP value below which small vessel begin to collapse. CCP should, therefore, be constant and independent of the actual ABP. On the other hand, this significant correlation can be explained by our equation 5, again indicating the missing physiological basis of the CCP concept of the authors.

Thirdly, it seems doubtful that CCP could be estimated using pressure and flow values from ABP ranges clearly above CCP and flow values clearly above zero flow, respectively. As long as small vessels do not collapse (ABP>CCP) it is not possible to decide whether their actual wall tension is determined more by transmural pressure or by active vasocostriction. However, the relative contribution of both effects is critical for the limit of CCP.

Finally, I would be interested in the authors’ explanation of negative diastolic flow values as seen in Doppler spectra of arteries with a high vascular resistance (peripheral arteries, middle cerebral artery during strong hypocapnea). In the case of ABPs<CCP and a small vessel collapse according to the model of the authors, CVR should increase towards = and FVd towards zero (equation 1). Negative flow values could, consequently, not occur.

I suggest that the relation between pulsatile pressure and flow should be better described using the concept of different static and dynamic resistances (CVR0 and CVR1). The driving pressure of the mean FV is more accurately given by cerebral perfusion pressure (CPP=ABP-ICP) than by ABP-CCP. Therefore, equation 2 changes to:

\[ FV = \frac{ABP - ICP}{CVR0} \]

and equation 5 to:

\[ CCP2 = ABP - CVR1/\text{CVR0} \]

(6)

Equation 7 explains well the positive correlations found between CCP2 and ABP and between CCP2 and ICP, respectively, without assuming a connection between CCP2 and Burton’s concept of “critical closing pressure”.

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neuron activity of the subthalamic nucleus was indeed correctly targeted in this patient. The pathophysiology of the basal ganglia will need to be revisited.

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Figueiras-Mendez et al reply:
We thank Obeso et al for their comments regarding our recent report.9 In summary, they raised some interesting points which need further clarification.

Recognition of the electrical activity of the subthalamic nucleus is different.39 The high frequency stimulation of the subthalamic nucleus activates a broad and diffuse subthalamic output.49 The activity is characterised by action potentials of large amplitudes (0.5–1 mV), a low background activity, tonically firing neurons, and absent sensorimotor responses (‘driving’). All these characteristics seem to be present in the patient discussed here. Neuronal activity in the sensorimotor region of the subthalamic nucleus is different from the above but on occasions the distinction may not be easy. Accordingly, it is very important to document in more detail the findings in the case of Figueiras-Mendez et al. Ideally, we would like to see the trajectory and length of the different recording tracks, the effects of microstimulation, and the post surgery MRI with measurement tracks near the tip of the electrodes. If, as assumed, the subthalamic nucleus was indeed correctly targeted in this patient, the pathophysiology of the basal ganglia will need to be revisited.

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low background activity found in our recordings is only due to the better signal-to-noise ratio of the electrodes used. “Good recording electrodes” depend on many variables such as tip size, tip profile, insulation material, impedance, manufacture, etc. “The signal-to-noise ratio of the cells in question has the same ratio as the subthalamic nucleus cell shown by Hutchinson et al.”

(b) In our report, cells discharged tonically, but also fired phasically and were well differentiated by a profuse burst activity and identified by statistical means (autocorrelation and interval histograms).

(c) Motor responses and tremorogenic cells in line with the above mentioned criteria were found along the trajectory of the electrode. Unfortunately, this point was not mentioned in the paper. It would surely have changed the opinion of Obeso et al.

The fanned-out patient, a total of eight neurons were recognised as belonging to the subthalamic nucleus in the right hemisphere, with a mean frequency of 74 Hz (range 38–109 Hz). Four of them responded to passive and/or voluntary movements and one was considered tremorogenic. The stimulating electrode was placed in laterality 11. One track was performed. In the left hemisphere, two tracks were performed. One track was used by the poor responding activity of the cells recorded. In the other track, nine neurons were recorded in the subthalamic nucleus (always following the above mentioned criteria) with a mean of 69 Hz (range 17–98 Hz). Five cells responded to passive and/or voluntary movements. One of them was also positive to tremor. The stimulating electrode was placed in laterality 12. The other stimulating electrode was always tested in the surgery before cementing it and, only when the symptoms are considered of unquestionable benefit it is left in the chosen place. The final position of the electrodes, assessed by ventriculography, was as follows: (a) posteroanterior: 1.5 mm behind the mean point of intercomissural line, (b) height: 6–6.5 mm below the intercomissural line, and (c) lateral: 12 mm for the right hemisphere, and 11.5 mm for the left hemisphere.

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Nitric oxide in acute ischaemic stroke

The pivotal role of nitric oxide (NO) in cerebral ischaemia has been elegantly highlighted in the recent editorial by O'Mahony and Kendall. Although studies of neuroprotective agents have been largely disappointing, pharmacological manipulation of NO may represent a novel means of protecting the brain from ischaemic insult. One area not discussed in the recent editorial is the neuroprotective effect of 3-hydroxy-3-methylglutaryl coenzyme A reductase inhibitors or “statins” in cerebral ischaemia. Preliminary studies have shown that statins modulate brain nitric oxide synthase (NOS) activity in a neuroprotective manner. Data from a murine model of ischaemic stroke demonstrate that prophylactic statin therapy reduces infarct size by about 30%, and improves neurological outcome in normocholesterolaemic animals. In this investigation, statin therapy directly up regulated endothelial NOS in the brain without altering expression of neuronal NOS. Recent findings also suggest that statin therapy influences the activity of inducible NOS. Lovastatin has been shown to inhibit cytokine mediated upregulation of inducible NOS and production of NO in rat astrocytes and macrophages, and this inhibition may represent a key in suppressing inflammatory responses that accompany ischaemia. Most interestingly, these preliminary findings suggest that statin therapy may modify the friendly and unfriendly faces of brain NO in a synergistically neuroprotective manner. These and other vascular effects of statins in cerebral ischaemia are potentially of great importance in human neuroprotection and ongoing studies such as the The Prospective Study of Pravastatin in the Elderly at Risk (PROSPER) study will help clarify their role in human cerebrovascular disease.

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O’Mahony replies:

The comments of Vaughan and Delany draw attention to the evidence that statin therapy up regulates the expression of NOS without affecting neuronal NOS. Their contention is that statin therapy may be neuroprotective. Statins may indeed prevent strokes and reduce infarct size when given as prophylactic therapy in at risk persons. However, our editorial article was not intended to discuss the wide variety of pharmacological agents that may have favourable effects on endothelial NOS as stroke preventative therapy. Rather, it is focused on the possible ways of inhibiting neuronal NOS and inducible NOS mediated nitric oxide release after the event of acute stroke. At present, there is no examination indicating that acute administration of statins in animal models of ischaemic stroke is neuroprotective. Their point about statins and endothelial NOS is interesting, but not relevant to neuroprotective therapy in acute stroke.

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BOOK REVIEWS


That neuroimmunology has come of age is demonstrated by the profusion of volumes published on the subject in recent years. This volume focuses on the central nervous system, and aims to satisfy the curiosity of both the clinician faced with a diagnostic conundrum and the experimental immunologist inquiring into the clinical relevance of his findings. At first sight it seems improbable that both of these goals might be achieved in one volume; this book however, succeeds admirably in what it sets out to do, as much as a result of its literary style as its content.

The intrusive authorial voice fell into disfavour in literary circles around the turn of the century because it was thought that calling attention to the act of narrating might detract from realistic illusion, so reducing the emotional intensity of what was being represented. It is a device much favoured by postmodern writers, who expose the nature of fictional constructs. The intrusive medical author never dropped out of fashion, although in these days of evidence based prejudice, authorial omniscience might be considered suspect. The authors of this volume are intrusive in a guiding conversational manner that makes this book by far the most readable of the neuroimmunological texts.

The book opens with a highly accessible chapter on immunology and the immune system. There follows a chapter that integrates the neurobiology of multiple sclerosis with contemporary issues of aetiology, cell injury, and repair. Next, a chapter on inflammatory demyelination presents the clinical syndromes of isolated demyelination, acute disseminated encephalomyelitis and allied conditions, and some of the syndromes of demyelination that are now accepted as part of the range of multiple sclerosis. The chapters on demyelinating disease are drawn to a close by a discussion of existing and experimental therapies for multiple sclerosis.

The book continues with chapters on paraneoplastic disorders of the CNS, stiff man syndrome, neurological complications of...
Neurologic Complications in Organ
Transplantation: Proceedings
Edited by ELOY F. WIDICKS
(Blue Books of Practical Neurology).
(Pp 248, £70.00). Published by
ISBN 0 7506 7066 5.

Organ transplantation, once medical exotica,
is now almost routine in the United Kingdom each year are performed cadaveric
organ transplants of about 1800 kidneys (in
to the first 160 live kidney donors), 700
livers, and 450 heart/lung (UK Transplant
Support Services). In 1997, the first basic
surgical techniques were established at the
beginning of the century in canine models. Trans-
lation of these experiments to humans awaited
safe and effective immunosuppres-
sion. Until the 1960s, the only forms of
immunosuppression were radiation (total
body or total lymphoid) and non-selective
chemical reagents (benzene and toluene).

Then the antiproliferative drug 6-mercapto-
purine (6-MP) was introduced, followed
shortly by a derivative, azathioprine,
with improved oral bioavailability. Combined
with corticosteroids, these allowed the first
human solid organ transplants to be per-
formed: in 1963, the first lung transplant in
Mississippi and liver transplant in Colorado.
Then in 1967 Christian Barnard captured the
world’s imagination with the first heart trans-
plant. His technique has been modified slightly since, but increasing success of
organ transplantation rests mainly on im-
proved immunosuppression with drugs that
selectively suppress lymphocytes by inhibit-
ing lymphokinome generation (cyclosporin
A, tacrolimus), signal transduction (sirolimus,
leflunomide), or differentiation (15-
deoxyxypregualin). As a result, over the
last 10 years in the United Kingdom, the
1 year survival of grafts has improved from
80% to 90% (kidney), 55% to 75% (liver),
and 70% to 90% (heart/lung).

Wijdicks estimates that 10% of transplan-
tation patients have a significant neurological complication. This is mainly due to neurotoxicity of immunosuppressive drugs,
seizures, and failure to awaken. Yet this is the
first text devoted to the neurological aspects
of organ transplantation. It is therefore a
timely subject in the excellent Blue Books Of
Practical Neurology series. Twenty authors contribute (one Dutch, one
Swiss, the rest American) to four chapters on
the transplant procedures themselves fol-
lowed by 10 chapters on neurological compli-
cations of transplantation including failure to
awaken, and psychiatric, neuromuscular and
demyelinating complications. Especially use-
ful to the neurologist without much experi-
ence of transplantation are the comprehen-
sive chapters on immunosuppressive drugs
and the opportunistic infections associated
with them (most commonly Listeria monocyt-
togenes, Aspergillus fumigatus, and Cryptococcus neoformans). The peripheral nerve and plexus
injuries associated with transplantation are
painstakingly described; astonishingly a sig-
nificant uveal neuropathy occurs in up to
40% of kidney transplants. The Cincinnati
Transplant Tumour Registry has recorded
information on 10 813 cancers arising de novo in
organ allograft recipients worldwide and
here are presented the data in the 300 of these
with CNS involvement. This is one for the
shelves of any neurologist involved in organ
transplantation.

ALASDAIR COLES

Stoke and Alzheimer’s Disease.
Edited by DIETER LAUEN, FLORENCE PASQUIER, and PHILIP SCHETENS.
(Current Issues in Neurode-

Volume nine of the Current Issues in Neurode-
generative Disease series examines the inter-
play between cerebrovascular disease and
dementia, particularly Alzheimer’s disease.
Two hundred pages of what are essentially 20
brief review articles comprise this text, sadly
without any illustrations. What makes the
introduction to each chapter there is a certain
sense of deja vu, although on the positive side
each contribution is extremely well referenced.
The book is divided into five sections cov-
ering the historical concepts of vascular and
Alzheimer’s dementias, the arguments for a
pure vascular dementia, the role of
Alzheimer’s disease in the genesis of demen-
tia after stroke, the contribution of white
matter changes on neuroimaging to demen-
tia, and finally a short section examining practical questions such as the manage-
ment of stroke in patients with dementia.

Although commonly they see their own
right, stroke and Alzheimer’s disease do
seem to cross paths more often than would be
expected by chance alone, and more often
than can be explained by the presence of
unusual angiopathy and recurrent lobar
haemorrhages. Perhaps common genetic
factors are responsible and here the APOE
alleles are discussed. The comprehensive
section on deep white matter lesions seeks to
explain the connection further—and con-
vinces the reader that there is still a lot which
is not well understood. It is in this section
particularly that illustrations are greatly
missed. Brief mention is made of other con-
ditions which may produce white matter
damage and dementia such as CADASIL, cerebral
lupus, and the primary antiphospho-
lipoid syndrome.

Some typographical errors and mistransla-
tions detract a little further from a book
which seems unlikely to appeal to most neu-
rologists, although it will no doubt be a
source of reference to those working in the
field of cognitive disorders, particularly vas-
cular dementias.

PETER MARTIN

Healing Stories—Narrative in Psychiatry and Psychotherapy.
Edited by GLENN ROBERTS and JEREMY HOLMES.
(Pp 226, £47.50). Published by Oxford University,

Evolutionary biologists would probably tel
us that the enchantment of stories is due to
survival having been dependent on the
passing of oral culture from one generation to
the next. Information put in narrative form
not only delights, but is easily recalled.
Stories also construct the interplay of
information, inference, motive, and con-
sequence in a fashion that informs future
action. Our experience of the world is
constructed around such narratives. They
define us as individuals, family members,
professions, and cultural groups.

This book is a series of essays on
psychotherapy, psychiatry, and also medicine
that sees the awareness and use of narrative in
clinical practice as a construct that can both

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deliver effective care as well as act as a conceptual bridge between the different disciplines. One of the great pleasures of being a doctor has always been listening to patient's stories, but the editors of this book fear that this essential art can be overtaken by dull scientific pragmatism. But in the most outstanding chapter, writes a lucid and well reasoned account of the need to search for and maintain narrative meaning in treating psychosis. This accounts for the varying effect to both patients and professionals of identifying individuals by their illness as in schizophrenics. Every psychiatric library should buy this book for this paper alone, which should be required reading for psychiatry trainees.

The rest of this book is of variable quality. There is a rather prosaic essay on gender issues, and there is repetition in various chapters concerning attachment theory, a useful but over worked paradigm. However, there are two very fine accounts of narrative in psychotherapy by James Phillips and Jeremy Holmes. DUNCAN MCLEAN


In a small accessible and easily digestible volume, the authors address a clinically important field. Faced with slim evidence on which to base clinical recommendations, they acknowledge that their very useful management advice “has often had to be based on practical clinical experience rather than the results of clinical trials or formal research ...” This disclaimer seems to have allowed them to mix evidence and opinion, limit references, and confuse the reader regarding the level of evidence. A pity, as the authors, with special expertise in this important area, have made a good start in putting together different aspects of the care of the woman with epilepsy in a practical book that is of direct interest and relevance to neurologists, obstetricians, general practitioners, and psychiatric specialists, and trainees.

Moving on from the general to the particular, the text, although expansive in parts, glosses over some important points. Examples include (a) which oral vitamin K preparations are considered safe in pregnancy (phymenadione), (b) differential efficacy of various antiepileptic drugs in different syndromes versus side effect and teratogenicity profile, (c) more information on the limitation of available evidence to support the statement “no monotherapy human abnormity reported” with certain new antiepileptic drugs in pregnancy, (d) the need to consider antiepileptic drug withdrawal in the menopause (and not only with enzyme inducing drugs such as valproate has also been implicated), (e) discussion of differences (and available formulations) between synthetic and natural progesterone, (f) stand of pregnancy when various malformations are detectable on scanning, and (g) time to closure of the neural tube (different from the 21-56 ths they quote as the “most sensitive time of the fetus to the induction of malformations by exogenous agents.”). Despite these comments (made with an eye on the next edition) I would recommend this book to all those involved in the care of women with epilepsy.

LINA NASHEF


Childhood Epilepsies and Brain Development is the fruit of a symposium held in 1997 to try and bridge the chasm between those working in the clinic or at the bedside and those in the laboratory. Both groups must collaborate and communicate to improve the management of children (and adults) with epilepsy. The book is essentially a collection of monographs of heterogeneous content and style and the result, perhaps not surprisingly, is that some of the component parts are better than the sum. The clinically oriented section will clearly be of particular interest to those who treat children and their families. The chapters on infantile spasms and Lennox-Gastaut syndrome are informative and provide some new but speculative insights into the pathogenesis of spasms. However, it was surprising that severe myoclonic epilepsy of infancy did not merit a specific chapter in view of the unique electroclinical evolution and natural history of this syndrome. The crucial issue of the cognitive and behavioural sequelae of early and frequent seizures on the immature brain, which is probably of most concern to both clinicians and families, is succinctly addressed in two chapters—although a clear and consistent cause and effect relation remains to be established. The chapters covering basic neurophysiology, genetics, and neuropathology, are erudite and fascinating but at times are barely comprehensible. Further work is needed, including answering the fundamental question—why does the first seizure occur—before the clinician and basic scientist are able to talk the same language—for the benefit of the patient with epilepsy.

The concept of Childhood Epilepsies and Brain Development is innovative and commendable and although the majority of the monographs are interesting and informative, the overall impression is that the individual parts (the chapters) are better than the whole (the book). The lack of an index is a strange omission, perhaps reflecting the prolonged editorial atypical absence, and although this militates against it becoming a well thumbed reference text, the book is an erudite addition to the mossy fibre-like sprouting of the epileptological literature.

RICHARD E APPLETON


Difficult clinical problems in psychiatry come in many forms. Diagnosis often causes difficulty, particularly in cases which demand some assessment of the role of physical illness in symptom formation. Perhaps for most psychiatrists practising in community settings risk assessment comes high on their list of concerns. Unsurprisingly, given the psychopharmacological expertise of the editors, this book is particularly interested in treatment resistance. The first 6 chapters give excellent reviews of the management of clinically relevant topics—for example, refractory schizophrenia or the difficult panic patient. The emphasis is very much on pharmacological management.

The second half of the book is more of a mixed bag, both in terms of the areas covered and quality of the chapters. The chapters covering all aspects of the assessment and management of anorexia nervosa and chronic fatigue are followed by a thorough review of the pharmacological management of substance misuse. Then come two weak chapters on behavioural disturbances in old age and the violent patient in the community. This last chapter will be of particular interest to community psychiatrists. Indeed, I would recommend because some aspects of the practical management of violence are missing—for example, a documented risk-benefit analysis, good failsafe communication, or deciding when to detain. One of the last chapters is a very good account of the management of hyperactivity in childhood, with good practical advice on the use of methylphenidate.

Apart from the chapters on chronic fatigue and the treatment of tardive dyskinesia there is little in this book which is of immediate interest to neurologists. However general psychiatrists wishing to improve their prescribing skills will find this book useful.

SIMON FLEMINGER


The Maudsley prescribing guidelines are produced each year for a local readership, but this, the fifth edition, is the first to go public. The authors and principal contributors, a mixture of pharmacists and psychiatrists with an interest and background in clinical psychopharmacology, are to be complimented on producing a guide of manageable size and ready accessibility.

The book is divided into sections dealing with the treatment of broad groups of clinical disorders—for example, psychosis—special patient populations—for example, elderly people, with further sections on the management of emergencies and the adverse effects of psychotropic drugs. Much of the information is laid out in tabular form. It could become an indispensable resource for a busy on call senior house officer (the dimensions would fit comfortably into the pocket of a clinical white coat, were they still to be worn) but more senior clinicians will find plenty of use for it in the clinic. It does not aim at great erudition, but provides a useful list of references.

There are a few cavils. The section on treatment of anxiety is skimpy (one and a half pages) compared with say the treatment of affective illness (22 pages) or schizophrenia (20 pages). The brevity is only partially explained by the undeveloped state of that particular area of psychopharmacology. Sections on common medications—dopamine, and pontine, and cutaneous syndromes related to antipsychotic use, and asterixis may be interesting but the reader will need to consult more comprehensive texts. A useful feature is the section on the management of deliberate self harm. The book does not aim to be an all inclusive text but this detail is not covered.

BRIAN TOONE

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