Psittacosis CFT titre remained high. Liver enzymes became normal; WBC remained normal; brain stem evoked potential interpeak latency I-V decreased slightly to 4-8 ms. The patient was discharged after 25 days in King Faisal Specialist Hospital, able to walk independently but with difficulty.

On follow up the patient gradually returned to normal; mild subjective dysaesthesia in the feet persisted at one year. Psittacosis CFT titres on eight persons at risk in the household were negative. The parrot was sacrificed and disposed of without necropsy.

The criteria for the diagnosis of psittacosis are met only by the history of exposure to a parrot, onset with pulmonary symptoms, a compatible chest radiograph, normal WBC, high serum CFT titres, and a dramatic response to the appropriate antibiotic after failure of potent but non-specific antibiotics. Unfortunately confirmation by necropsy of the bird was denied.

It is known that psittacosis affects many organs including liver, heart, kidneys, skeletal muscles and the CNS. The neurological signs in our patient were those of brain stem involvement, the nature of which remains speculative in the absence of pathological confirmation. One may argue that this is a form of central pontine myelinolysis caused by nutritional derangement or fluctuating electrolytes during the early days of the illness. But the CT scan did not show the unenhancing radiolucency usually seen in this condition; the near complete recovery argues against pontine myelinolysis which is usually fatal or has significant neurological sequelae. The time was too short for a previously healthy patient to have been depleted of thiamine, and no significant hypotonaemia or rapid electrolyte correction had occurred during his illness.

The psittacosis surveillance reported by the United States Center for Disease control in the 1970s showed that CNS manifestations occurred in 5–9% of cases. Symptoms are variable. Encephalitis, polyradiculitis and cerebellar symptoms have all been reported in psittacosis, and in other infections such as Mycoplasma pneumoniae, legionellosis and mononucleosis. Neuropathologic study of cases of “psittacosis encephalopathy” showed mainly vascular changes including congestion, hyalin thrombi and perivascular monocyteic infiltrate with small foci of necrosis or demyelination. Invasion of the CNS as evidenced by the presence of intracytoplasmic inclusions (LCL bodies) had been found only rarely in cases of meningitis. The term brain stem encephalitis was first used by Bickerstaffe to describe neurological manifestations predominantly referable to the brain stem and occurring in the course of an acute or subacute infection. The term had been suggested to include a variety of symptoms, such as those of Fisher’s syndrome. The non-specificity of the initial infection suggests that the underlying pathophysiology involves the immune system or causes changes in the blood vessels which lead to the symptoms of brain stem involvement. The absence of an immunological event is not inconsistent with the diagnosis as concluded by Waxman et al who reported subacute brain stem encephalitis leading to respiratory death without an obvious antecedent infection, immunological event or neoplastic disease. In our case, intense activation of the immune system early in the course of the infection may have led to a focal vasculitis involving the brain stem. Although vascular changes have been reported in psittacosis, the cause of preferential involvement of the stem vasculature requires further study.

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References

Relapsing Fisher’s syndrome

Sir: Fisher’s syndrome, characterised by the triad of ophthalmoplegia, areflexia, and ataxia, is considered by many neurologists to be a variant of the Guillian-Barré syndrome. Approximately 3% of patients with Guillian-Barré syndrome will have one or more relapses, but the relapse rate for Fisher’s syndrome is unknown. We wish to report a patient with a relapsing illness which fits the classical description of Fisher’s syndrome.

A 58-year-old woman was first evaluated in November 1977 for the complaints of dizziness and unsteadiness. She had a ‘flu-like illness four weeks previously, but was otherwise in good health. Her past history was unremarkable for prior neurological illness. The unsteadiness increased over the ensuing two days, and paraesthesia of the feet and horizontal diplopia developed. General examination, including vital signs, was normal. On neurological examination she was anxious. The visual fields were normal. The pupils were 5–6 mm and reacted minimally to light, although they did not constrict during attempted convergence. Horizontal gaze and upgaze was absent, and on attempted downgaze the eyes would move only a few degrees. There was no
Her ataxia resolved, but there was no Babinski reflex. Proprioception was minimally reduced in both feet. The following laboratory tests were normal: complete blood count, anti-nuclear factor, BUN, VDRL, serum electrolytes, liver function tests, blood glucose, monosport, cold agglutinin titre, vitamin B12, folate, thyroid function tests (T3, T4), urinalysis, urinary porphyrin assay, and heavy metal analysis of the urine. CSF was under normal pressure and was acellular with a protein of 55 mg/dl and glucose 89 mg/dl. Cytological and microbiological examinations were normal. CT with and without contrast with brainstem viewed was normal. A Tension test was negative, and intravenous thiamine (100 mg) failed to improve her ocular motility. The ophthalmologist who evaluated her in 1977 confirmed that the ocular findings were the same as during that hospitalisation. Electromyographic (EMG) examination of the upper and lower extremities was normal. Motor nerve conduction velocities were normal as were bilateral ulnar F-wave studies; median, ulnar, and sural nerve sensory evoked potentials were unobtainable. Two days after admission to the hospital she had no ocular movements and was areflexic. By the 12th hospital day horizontal ocular movements were returning, followed by a gradual return of vertical movements beginning three days later. Papillary size was still 5 mm, with minimal reaction to light. Pupil testing with 0.06% pilocarpine (on day 15 of the illness) produced prompt constriction bilaterally; no other tests of autonomic function were performed. With physical therapy the patient was able to walk, and ocular motility returned to normal over the ensuing week. She was discharged from the hospital after a total of four weeks of confinement. Eight weeks later ocular examination was normal, the muscle strength reflexes were present. She has remained without neurological symptoms for the past 26 months. Pharmacological testing of the pupils with dilute pilocarpine has not been repeated.

There have been only two prior reports of patients with possible relapsing Fisher's syndrome, but their initial episodes were poorly documented. Elizan et al. reported 11 cases of Fisher's syndrome, and they comment that one of the their patients (No 11), a 56-year-old woman with limited ophthalmoplegia, ataxia, areflexia, dysphonia, and diffuse sensory abnormalities "29 years previously had an illness of 6 weeks' duration characterised by similar paresthesias, diplopia, and triplia, and severe trunkal ataxia, which was diagnosed at Bellvue Hospital as polyneuritis". Barontini et al. reported a 56-year-old woman with ophthalmoplegia, ataxia and areflexia who had "suffered from similar but less severe symptoms 19 years earlier, without having been admitted to the hospital". Donaghy and Earl recently reported three patients with minimal oculomotor disturbances who subsequently developed marked weakness and sensory loss (with associated slowing of motor nerve conduction velocities). All three patients suffered relapses of weakness and sensory loss, but not of their oculomotor disturbances. These patients clearly did not have relapsing Fisher's syndrome, but rather chronic relapsing Guillain-Barré syndrome.

Oculomotor abnormalities occur in 5–24% of patients with Guillain-Barré syndrome. Twelve of the 50 patients with Guillain-Barré syndrome reported by Haymaker and Kernohan had varying degrees of extraocular defects, but only one had total ophthalmoplegia. A necropsy study of 19 patients with Guillain-Barré syndrome reported by Asbury et al. included three patients with total ophthalmoplegia, and three others with pupillary paralysis or movements of the globe. Neurological findings in true Fisher's syndrome have only recently been described. This patient, reported by Phillips et al., was a 67-year-old woman with total bilateral extraocular ophthalmoplegia, partial ptosis, moderate facial weakness, marked ataxia and generalised areflexia. She died suddenly 27 days after admission (from bronchopneumonia). Microscopic examination of the spinal nerve roots and peripheral nerve roots revealed patchy, but extensive, recent segmental demyelination. The changes appeared to be approximately the same age in all the nerves. Examination of the cranial nerves revealed the same patchy demyelination and mild cellular infiltration involving the 7th, 10th, and 11th cranial nerves. The distal portion of the 3rd, 4th, and 6th cranial nerves were not available for examination, but no histological abnormalities of the more proximal portions were found. The brainstem and cerebellum were histologically normal. These changes are all characteristics of a demyelinating peripheral neuropathy of the Guillain-Barré type and tend to support the inclusion of Fisher's syndrome within the spectrum of the Guillain-Barré syndrome.

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Pseudotumour cerebri with amiodarone

Sir: Amiodarone is a relatively safe anti-arrhythmic agent, but is also has some extracardiac side effects, which may involve the cornea, the skin, the thyroid, the lungs, the gut and the nervous system. The neurological side effects include tremor, sleep disturbances, headaches \(^1\) and, less commonly, peripheral neuropathy, \(^2\) proximal weakness and cerebellar dysfunction. \(^3\) We report a case of pseudotumour cerebri (PTC) as another possible side effect of amiodarone.

A 58-year-old man had been treated for 6 months with amiodarone (400 mg/day) for supraventricular arrhythmias on exercise. He had also received pindolol (5 mg/day), allopurinol (100 mg/day) and clofibrate (500 mg/day) for several months prior to amiodarone. He was referred to us after he developed acute blurring of vision in the right eye. The general examination was normal except for a moderate obesity (81 kg, height 162 cm). The blood pressure was 180/90 mm Hg and the ECG was normal. The neurological examination showed bilateral papilloedema, which predominated in the right eye, with normal visual acuity (1.0 in both eyes). A partial inferior field defect was present in the right eye. The CSF pressure was 300 mm H\(_2\)O with normal protein (305 mg/dl), leucocytes (2.8 10\(^6\)/l) and glucose (5.0 mmol/l). A brain CT scan, including a survey of the pituitary and orbital regions, was entirely normal. Standard blood and urine tests were normal. A diagnosis of pseudotumour cerebri was made. Ace- tazolamide (3 x 250 mg/day) was administered for 5 months and prednisone (60 mg/day) for 1 month, but both were discontinued in the absence of improvement. The CSF pressure also remained elevated (range 270 to 300 mm H\(_2\)O) on follow up 2, 5 and 12 months later. At 12 months, neuro- logical examination still showed bilateral papilloedema with developing disc atrophy. Visual acuity was 1.25 (OD) and 0.8 (OS). Corneal deposits typical of amiodarone were present. Serum levels of amiodarone were determined by HPLC and were within the optimal range, \(^4\) that is 1-5 mg/l for the parent drug (n = 1.93 ± 0.80) and 0.9 mg/l for its major metabolite, desethyl- amiodarone. Because of the possible side effects, amiodarone as well as any other medication were withdrawn. Sequential spi- nal taps after 4 and 7 days showed a decrease in CSF pressure (180 and 80 mm H\(_2\)O). During the following months the visual acuity improved (1.5 (OD) and 1.0 (OS)) with disappearance of the papilloedema. Some degree of optic disc atrophy persisted bilaterally. A partial field defect also remained in the inferior nasal quadrant of the right eye.

This observation suggests that pseudotumour cerebri was induced by amiodarone because it developed shortly after amiodarone was administered and resolved after the drug was discontinued. The other drugs had been administered previously for a much longer time. The role of amiodarone in the pathogenesis of pseudotumour cerebri is also suggested by the fact that the toxicity of this drug is similar to that of perchline, which indeed may produce pseudotumour cerebri. \(^5\) The same types of keratopathy \(^1\) \(^5\) and peripheral neuropathy with lysosomal inclusions \(^2\) \(^7\) have also been reported as side effects of both drugs. This is possibly due to the fact that these drugs are amphiphilic. \(^8\) A rise in venous pressure or an impairment in CSF outflow have been proposed to explain the elevation of intracranial pressure in pseudotumour cerebri. \(^9\) In the cases of pseudo- tumour cerebri associated with per- dhelkline and in our patient the exact mechanism remains unsettled.

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