PRACTICE OBSERVED

Emergencies in the Home

Neurological emergencies

T P LISTER

The purpose of this article is to discuss the common manifestations of acute neurological disease as they present to the general practitioner. Disorders affecting the eyes and ears, and head and back injuries have been dealt with in other articles in this series. In all cases the initial management entails establishing or maintaining circulation and respiration. Taking a careful history and making a thorough clinical examination will help the general practitioner to make a diagnosis so that appropriate further treatment can be given. A decision then has to be made about whether the patient should be admitted to hospital. It is helpful if a full diagnosis of the physical, social, and psychological problems can be made.

Stroke

Cerebrovascular disease may present as an acute neurological deficit in a patient who may have pre-existing arterial disease. In practice there are three conditions that the general practitioner is likely to see.

Completed stroke.—The patient is often found in bed in the morning unable to move one side of his body. Speech disturbance or unconsciousness may also be present. Once adequate respiration is ensured a full clinical examination will establish the extent of the disability. If there is an abnormality of respiration, severe hypertension, fever or neck stiffness, history of head injury, or signs of raised intracranial pressure then admission to hospital is essential. Raised intracranial pressure is suggested by a throbbing headache, vomiting, and papilloedema.

When the patient is kept at home the general practitioner is responsible for co-ordinating the management of the various problems. The district nurse should organise nursing care, if necessary.

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including regular turning and adequate hydration. The health visitor and social worker may be concerned particularly in the care of the rest of the family and the attendant social problems.

Several investigations are necessary. The haemoglobin concentration will show anaemia or polycythaemia. A blood count may show leucocytosis, suggesting an infection, and the erythrocyte sedimentation rate may suggest vasculitis or may be a non-specific indicator of other disorders. Blood urea and electrolyte concentrations will indicate metabolic imbalance, which may lead to reassessment of whether the patient should be in hospital. A chest x-ray examination to exclude a primary carcinoma of the bronchus and serology for syphilis should be considered later.

Many neurologists think that all strokes should be referred urgently for assessment so that the few remediable conditions may be spotted. If facilities for computed tomography are available then tumours and intracranial haemorrhage amenable to surgery may be identified.

Developing stroke.—In this case the symptoms and signs have recently appeared and may be changing. Of particular importance are monitoring and lowering high blood pressure and seeing that the patient rests to ensure that the condition does not worsen. An early diagnosis of an infarct, which may benefit from anticoagulation, or a haemorrhage, which may be aspirated, may improve outcome so admission to hospital should be arranged.

Transient ischaemic attacks.—These cause a transient neurological deficit lasting less than 24 hours and often less than one hour. These patients should all be referred for urgent neurological assessment and consideration of treatment with aspirin.

Coma

The first priorities are to establish a free airway, support respiration if necessary, and detect shock or trauma. The history must be second-hand but the general practitioner has the advantage often of knowing the patient and his problems beforehand. It is important to find out what preceded uncon-

referral to a centre where investigation and treatment may be undertaken. Acute loss of vision needs urgent referral because early definitive treatment may restore vision. Spinal cord compression is suggested by paraparesis associated with sensory disturbance or root pain. It may be due to trauma or pathology in the spinal cord or extramedullary region. This should always be urgently investigated in a major neurological centre. Rapidly progressive weakness of the limbs requires urgent admission to hospital, whatever the cause, because of the possibility of bulbar

palsy and respiratory failure developing. Respiratory failure develops very rapidly without an intervening period of breathlessness, unlike respiratory failure from pulmonary disease. The commonest cause of this in Britain today is the Guillain-Barré syndrome.

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Interesting GPs of the Past

Benjy Noble

ANDREW SMITH

When I qualified there was a five-week gap before my first hospital job started. In those days you registered a few days after qualifying and it seemed a good opportunity to get some experience of general practice. I had never seen a GP in medical school or been given any indication that general practice had much to do with medicine, but I thought that there must surely be something to a job that so many members of my family had gone to interesting. But would any good GP take on a newly qualified doctor for a month? Then I thought of Benjy Noble, one of the few GPs highly spoken of by my consultant teachers. I had never met him, but he had been an assistant to my grandfather and his son John was a friend of my younger brother's. It seemed worth while trying him. So I telephoned him, said I wanted to see general practice, and asked if by any chance he happened to need an assistant for a few weeks. He invited me to come out to tea next day.

He was then in his late 40s, athletically built with a slight stoop. He greeted me warmly and immediately put me at ease by treating me as though he had known me for years and told me anecdotes of his assistantship in Whickham, embellishing some of the stories I had heard from my father and adding several more. He had done the assistantship immediately after qualifying, and it had made him want to be a GP. He asked me if I read much, then talked about philosophers from Plato to Bertrand Russell, went on to comparative religion, mentioning that he had thought of becoming a Buddhist when in India during the first world war. He moved on to poetry, and when I expressed a low opinion of Alfred Lord Tennyson he leapt onto his chair and brought down Tennyson's poem from the top shelf of a bookcase and read "A Vision of Sin" which changed my opinion. This led Benjy to Omar Khayyam, and he recited parts of the *Rubaiyat*. His range of interests fascinated me, but what impressed me most was his assessment of people we both knew—the teaching hospital consultants, who had been his contemporaries, and my teachers. He saw them as they were, warts and all, was contemptuous of the pompous ones, wryly tolerant of the competent money-grubbers, and identified with

respect and affection the good and true. His conversation was so intriguing that I forgot I was being interviewed until, after comparing the different characteristics of Durham and Northumberland coal-miners, he suddenly asked me when I wanted to start.

I spent the next four weeks with him. I started by sitting in with him on surgeries but was soon given my own. I lived in his house with his wife and children and sat far into the night listening, talking, and arguing with him. He would start by asking about the patients I had seen each day and move on to politics, which would eventually bring us back to the then projected National Health Service. He had read a lot about the public men of his youth and would give me potted biographies of men like Haldane, whom I had scarcely heard of, but we would come back to medicine—not the intellectual exercise I had been taught but patient-related medicine. Being a doctor was not, I realised with a sense of liberation, the scientific exercise as taught in hospital but a practical art concerned with people. Diseases were inextricably bound up with the people who had them, their personalities, physiques, temperaments, ways of life, and not just biological phenomena. Through his descriptions I saw medical practice for the first time like a great

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consciousness—especially convulsion, head injury, chest pain, headache, or ingestion of drugs or alcohol. In a few cases immediate treatment may be life-saving. Unconsciousness following a simple faint may be prolonged if the patient is not allowed to lie down. He will be pale with cold clammy skin and hypotensive. Consciousness usually returns rapidly in the three-quarters hour or recovery position.

If there is a history of diabetes hypoglycaemia will be suggested by pallor, restlessness, tachycardia, sweating, and hypotension. Twenty-five ml of 50% dextrose solution subcutaneously if a vein cannot be found—is this easier to carry and administer but not always as effective.

Cardiac arrhythmias that result in poor cerebral function may respond to specific drugs, DC shock, or a blow on the front of the chest.

Haemorrhage that results in coma may be external, which is usually apparent, or internal owing especially to gastrointestinal lesions or a ruptured ectopic pregnancy. The patient appears shocked as in a faint but has a very rapid, low volume pulse. Treatment is by immediate fluid replacement and transfer to hospital.

Although in most cases the unconscious patient will be transferred to hospital, the general practitioner may help future management by carefully observing the physical signs. The following should be specifically noted:

- pulse and blood pressure;
- response to pain commands;
- state of pupils: they may be normal; small and equal but will react to light in overdose or bilateral cerebral damage with preserved brain-stem function; fixed and dilated; asymmetrical, with one sluggish or fixed and dilated indicating a third nerve palsy owing to pressure from a swollen hemisphere;
- symmetry of limbs;
- neck stiffness, which suggests meningitis or subarachnoid haemorrhage;
- fundi: note papilloedema, haemorrhage, and exudates.

Finally it should be remembered that coma is very often the end-stage of a prolonged illness and gives the patient a pain-free and dignified death. At this time the caring general practitioner and district nurse can be of great value to the whole family.

Headache

This is probably the commonest neurological symptom to be regarded as an emergency by the patient. Several urgent problems arise. In meningitis the headache is usually generalised and develops slowly. Fever, photophobia, and neck stiffness are important signs. Classical subarachnoid haemorrhage presents as severe occipital pain with signs of meningeal irritation. In encephalitis and cerebral abscess the headache develops gradually and definite restlessness and confusion may be seen. Migraine usually presents as severe unilateral headache associated with nausea, preceded by tachycardia, or fortification spectra. A severe attack occurring for the first time may cause neck stiffness and suggest meningeal irritation. These are all acute emergencies that require immediate admission to hospital without prior treatment, which may mask signs and interfere with subsequent management. An exception to this is the patient who is severely ill with spotted fever, or meningococcal meningitis. In country areas there is often a delay of over an hour before a patient can be transferred to hospital. In this case blood should be carefully taken for subsequent culture and one gram of benzyl penicillin given intravenously, provided that the patient is not known to be sensitive to this drug.

Hypertension becomes a medical emergency when it causes acute damage to organs. In the brain this leads to hypertensive encephalopathy, characterised by severe headache, vomiting, confusion, and, later, visual disturbance, focal neurological signs, convulsions, and coma. The arterial blood pressure is greater than 200/140 and fundal examination shows haemor-

rhages, exudates, and papilloedema. Anxiety will cause the blood pressure to rise, so the main task is to reassure and mildly sedate the patient. Investigation and further treatment should then be undertaken in hospital.

Giant cell arteritis, on the other hand, may first present as a much less severe headache. It is temporal or occipital and may be associated with generalised muscle pain and tenderness. The temporal arteries are tender and will not compress against the skull. Urgent measurement of the erythrocyte sedimentation rate will give a value greater than 60 mm in the first hour, and treatment should be started as soon as the diagnosis is suspected. By the time visual failure or brain-stem ischaemia occur it is too late. High doses of steroids, equivalent to 60 mg of prednisone per day are given, and maintenance doses are adjusted according to the ESR. The diagnosis is confirmed by temporal artery biopsy.

Fits

A convulsion is a disorder of cerebral function that is characterised by abnormally excessive electrical discharges from neurones. In a grand mal convulsion a prodromal phase lasting many hours or days leads to an aura or awareness that a fit is about to occur. The tonic phase of muscular spasm and the clonic phase of convulsion usually last just a few moments and are followed by drowsiness and confusion, which often passes into normal sleep. Repeated seizures without recovery in between or a seizure lasting more than 30 minutes is known as status epilepticus. This must be arrested or irreversible brain damage may occur.

With a simple self-limiting convulsion all that is required is basic first-aid. The airway is kept open by turning the patient onto his side and removing false teeth. Care is taken to prevent bodily injury from furniture or a fireplace during the clonic phase. Reassuring the worried attendants and preventing overzealous management, such as forcing objects between clenched teeth, may be the doctor's main task.

If the fit does not stop promptly or if status epilepticus is suspected the fit should be stopped. Intravenous diazepam is the usual treatment of choice and at least two ampoules of 10 mg should be carried in the medical bag. Between 5 and 10 mg is usually effective but occasionally higher doses are required, in which case there is a risk of respiratory depression and ventilation may have to be assisted with an airway, tracheal intubation, or mouth-to-mouth respiration. If diazepam is ineffective other drugs may be used which are rarely carried by the general practitioner, so immediate transfer to hospital is indicated.

When possible, a history should be obtained from relatives. Particular emphasis should be placed on a history of previous convulsions, diabetes, recent head injury, or ingestion of or recent withdrawal from alcohol or drugs. Examination includes searching for evidence of a head injury, focal neurological signs, and examination of the blood with Dextrostix. Any intracranial disease may cause a convulsion, and an immediate diagnosis is often not possible.

When a patient does not recover consciousness, status epilepticus is suspected, or there are signs of head injury or raised intracranial pressure urgent admission to hospital should be arranged. Although a fit usually lasts for a few moments the precipitating medical cause needs further investigation. The social and psychological crisis of a fit persists for the patient and relatives, so understanding and patient counselling is of great value.

Febrie convulsions in infants were discussed as paediatric emergencies.

Other neurological emergencies

There are several other neurological problems when initial management requires a physical examination followed by urgent

novel with Benjy's patients as the characters and he himself the narrator.

In the evening we used to dine in a warm dining-room, then walk down a cold corridor to a warm drawing-room. Benjy produced liquor and poured out two glasses, saying he took it as a medicine because it was as effective as Trinitrate for the induced angina and had fewer side effects but I might like it for its taste alone. That was the first indication I had that he was not as fit as his appetite for work and conversation suggested. A week later he got an attack of chest pain so severe that his partner called in Professor Hume, the distinguished cardiologist. Hume knew Benjy well and promptly sent him to bed for complete rest, telling me sternly to keep him there though obviously doubting that I would succeed. He was right. Mrs Noble and I did manage to keep him in bed most of the time but never at rest. Whenever I came back to the house from a round of visits, a surgery, or a hospital, I found him sitting up in bed and bedroom and ask about what I had seen and done. I tried to creep softly upstairs to spare his heart but seldom succeeded. I told him that he ought to be resting and Hume had ordered me to make him do so. He was resting, he said. He spent all day in bed, did he not? What possible harm could talking do his heart? Surely I could see that. This was rank heresy in those days when bed rest was a bed-rock of treatment for heart disease, but I could see very well that for certain temperaments enforced rest and boredom is far more stressful than talking medical shop.

My first confinement came while Benjy was still in bed. I got back at the end of a long round that day to find him getting dressed and preparing to go out. His partner was away on his half-day and an elderly primip he had promised to deliver had been in the second stage of labour for the past two hours. He must go. I persuaded him back to bed. I said I would deal with it, seized the midwife bag, and made off at top speed. I found an exhausted woman and an anxious midwife whose face fell further when she saw a callow youth instead of the trusted doctor. Benjy had taught me never to allow your face to reveal your own anxiety to a patient, so I donned a face mask to hide my trembling lips and, assuming an air of spurious confidence, chloroformed the patient, scrubbed up, and delivered the baby by forceps. It cried immediately, the placenta came away easily,

and after stitching up the episiotomy I returned to Benjy in triumph. His delight in the successful outcome and my relief at my luck would have killed him outright if the calm and quiet protagonists had been right about rest.

Enthusiasm was Benjy's most inspiring characteristic but it was never uncritical. He was profoundly sceptical, far in advance of his time, about the efficacy of drugs. He used to say that only eight drugs had any specific therapeutic action. The rest were either palliatives or placebos. He would count them off on his fingers, starting with digitalis and ending with sulphona-mides. He supposed he might have to add the recently discovered penicillin but not until there was a lot more evidence about it. He realised long before Banting had defined the concept of doctor as drug the placebo effect of the doctor's personality.

He thought that many doctors, not just the pompous pundits he so often derided but good sound doctors, lacked self-criticism. He quoted a noted eye surgeon of his student days who walked out of a particularly self-satisfied lecture by a contemporary and said, "These chaps go on and on about their successes. You don't learn from success, but from failures." He then founded a dining club where Benjy was the most formative of my professional life. It changed medicine from a pleasant and leisurely occupation to a vocation, and it made general practice my goal.

Years later Benjy told me he was going to retire and live deep in the country. I told him he would never settle down to such a quiet life without patients and medical shop. He thought he could and he did. I had forgotten his other interests and his love of reading and the country.

We will be pleased to consider for publication articles about other interesting general practitioners of the past.—Ed, BMJ.

ONE HUNDRED YEARS AGO I am certain that, in women, the most frequent cause of backache is leucorrhoea. But what ever may be its cause, the backache will continue. My experience is that considerably more than half of married women, and very many unmarried women, suffer from backache. I believe the most prolific cause of "whites" in unmarried women is long standing on the legs and bodily fatigue. Another cause of backache is the wearing of high-heeled boots which, by their continuous action of the muscles of the lower part of the spine, in order to maintain the proper balance and erect position. I have had four such cases, and I know of another, all cured by discontinuing the use of high-heeled boots. It is really surprising what very serious symptoms may arise from such an apparently trivial cause. The following is the first case about which I was consulted.

MA, aged 17, an assistant in a large drapery-house in the City, a delicate-looking blonde, of pale lymphatic temperament, subject at times to hysteria, had been quite regular since she was fifteen; and occasionally the catamenia were very profuse. She complained of almost nothing except severe backache: "a feeling as if her back had been weighted down with a heavy stone, or as if it were being pulled down by a chain." She had had "whites" on several occasions, even sufficient flow to make her think she was menstruating; but, at present, she had none, and felt better and stronger than for some time, with the sole exception of backache. Her appetite, though generally capricious, was now good. I prescribed rest, change of air, valiantism of iron, and a large belladonna plaster to the back, and directed her to lie at least an hour morning and afternoon, on the sofa, with a cushion well pressed into the back, and to take a short walk twice a day. She obtained a fortnight's holiday, and, as I think, to Bournemouth. When she returned, the backache was no better; in fact, worse; so much so, that

her mother was determined I should see it; she was sure "There must be something wrong with my daughter's back." She now also complained of aching in the calves of the legs, and great tenderness in both groins. Her mother said she had noticed that her daughter had always complained more on Sunday nights, and all day on Mondays; but, during the last week, every day was the same. Her daughter did not dislike her employment, and, indeed, was now most anxious to return. I examined the back carefully; nothing seemed to be wrong, not even as to be seen on the calves; there was no glandular enlargement nor any swelling in the groins, though there was tenderness to touch. Her urine was normal. I was about to leave the room, when I noticed that she was wearing very high-heeled boots. On my return to my room, I told the mother that her daughter must have another fortnight's holiday; must carry out my directions as to medicine, rest, etc., as before; and, in addition, must wear woollen stockings, a pair of soft-soled house-slippers always; and, when she went out, put a pair of gloves over them, but at no time wear high-heeled boots. She called to tell me she was quite well, and intended to return to her employment on the Monday following. I then explained to her that the sole cause of her backache was the wearing of high-heeled boots. She had never suspected this, even when I had ordered her to wear slippers; for now, looking rather confused, she showed me that she was again wearing the boots which she said that she had put on again for the first time this morning to come into the City. She thought there was no harm now that she was quite well. Suffice it to say, she has not worn them since, nor has she suffered again from backache. Occasionally, young ladies from shops in the City come to consult me; if they complain of backache, my first two questions invariably are, whether they suffer from "whites" or wear high-heeled boots. C H HILL, Duxbury, MD. (*British Medical Journal*, 1881.)