malaria, injected quinine (amount unknown) into his right buttock in the region of the gluteal fold. Immediately the injection was made the patient experienced a sharp, shooting pain running down the sciatic distribution as far as the foot of the same side; the pain lasted only for a second, and was immediately succeeded by a feeling of numbness and heaviness in the limb.

The remainder of the history was difficult to obtain accurately owing to the patient's dull mental condition, but he stated that during the seven days following the injection the affected limb remained free from pain but paralysed; this period of freedom from pain was succeeded by a period with marked pain and tenderness in the limb, especially below the knee, this condition persisting acutely for twenty-five days and then gradually subsiding. The exact distribution of the pain during that period is uncertain. The limb gradually began to regain some of its power, and by the time the patient attended the out-patient department it had recovered sufficiently to enable him to get about unaided. Apart from the above symptoms, his health had been good.

Condition on Admission.

On examination there was marked wasting and flabbiness and weakness of the flexor muscles of the thigh and of the calf muscles of the right lower limb. There was tenderness on pressure over the sciatic nerve below the region of the gluteal fold, this discomfort being most marked in the muscles of the calf. Pain in the sciatic nerve distribution was induced by flexion of the thigh on the abdomen and extension of the knee. Examination of the superficial sensations showed an area of anaesthesia on the outer side of the right leg, extending from midway between the knee and ankle down to and involving the outer border of the foot, all superficial sensations being lost in this region. Some blunting of sensation was detected outside this area of complete anaesthesia. Marked hyperaesthesia, especially to pin-prick, was found in the inner half of the sole of the foot. Deep sensations were normal.

The knee-jerks were present, equal and brisk on both sides; the ankle-jerk was present and brisk on the left side, but absent on the right side. The patient could now walk, but his right leg was still very weak, and he was unable to rise on his toes on the affected side. He was obviously suffering from the effect of the injection of quinine given either into, or in close proximity to, the sciatic nerve.

The irritative effect of quinine given subcutaneously or intramuscularly is well known, the subcutaneous route sometimes leading to obvious sloughing. The intramuscular injection also causes tissue damage and muscle fibre necrosis, but here the damage is deep-seated and so usually only detected on examination of the site of injection post mortem in fatal cases. The danger of tetanus following intramuscular quinine injection is one that must always be kept in mind, the necrosed tissues affording a favourable nidus for any organisms that may gain access along with the quinine.

Recently the occurrence of fixation abscesses at the site of intramuscular quinine hydrochloride injections has been reported by Giglioli¹ in a series of cases of paratyphoid C infections. Of 59 patients with paratyphoid C infection, to whom intramuscular quinine was given, 20 developed abscesses at the site of the injection, containing short and long Gram-negative rods, the organisms apparently gaining access through the blood stream.

In view of the local pain produced by intramuscular injections of quinine, and of the various complications that may possibly result from this method of administration, many authorities consider the intravenous route safer than the intramuscular, and now employ it as a routine in all cases with marked vomiting or with any other symptoms, the presence of which makes it necessary to get the patient rapidly under the influence of the drug. If precautions are taken to use not more than 0.5 gram at a time of a soluble preparation of quinine diluted in not less than 5 c.cm. of water, and to inject this very slowly intravenously, I have never found any ill effects resulting from this method of administration. The action of quinine given by this route is more rapid, and all danger of local ill effects is also thereby avoided.

REFERENCE.

¹ Giglioli: *Proc. Roy. Soc. Med.*, vol. xxiii, No. 2, December, 1929, p. 165.

A CASE OF NARCOLEPSY.

BY

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ACCORDING to Gowers the term "narcolepsy" is best applied to a condition in which there is a tendency to fall into a sound sleep for a short time, usually for a few minutes, rarely for an hour or more. It is distinguished from trance by the brevity of the attacks of sleep, by their strong tendency to recur, and by the fact that the patient can be roused.

The patient in this case was a girl, aged 19, who was admitted into the Hull Royal Infirmary under my care. She gradually began to be sleepy when 16 years old. At night she went to sleep naturally, but would waken in two hours, and was afraid of being alone in the dark. She would scream out, being terrified, and then doze off, but would not get a proper sleep. Gradually, however, she became a little better, and slept more naturally, but lately she has grown worse. She now sleeps two to two and a half hours, awakening always in a fright, then dozing off into an unsatisfactory sleep.

She rises at 7 or 8 a.m., falls asleep at her breakfast and at all her meals, and sometimes between her meals. This happens every day. Even when talking to anyone she goes to sleep, loses consciousness, and falls against the table, remaining in this position for two or three minutes until she gradually recovers. When she has finished her meal she does some housework, but if she feels the sleepy feeling coming on she lies down. Two months ago she left her work on account of the sleepiness; she stopped work of her own accord, as she was a good worker, and her employer did not want to lose her.

During the attacks she never bites her tongue, never passes her urine or faeces unconsciously, and she has had no difficulty in eating or drinking. She has fallen a few times and knocked her head without wakening. She often dreams, but has no nightmares. No giddiness is present, but she is slightly deaf. After an attack she seems to be quite fresh and to have benefited from the short sleep. She appears to work up gradually to the next attack. From four to nine attacks may occur in a day. They last on an average from ten to fifteen minutes, but they are getting

longer. Sometimes she turns quite pale during an attack. The number of attacks increases during her periods to about nine a day; also during the week before and the week after; they are longer at this time, but not more severe. Her periods are regular and normal, and last four or five days. She has had no illness except measles when a child.

Examination showed her to be of very good physique. The heart, lungs, abdomen, and urine are normal. Pubic hairs grow as high as the umbilicus. She is mentally intelligent but emotional. The knee-jerks are equally exaggerated; ankle-jerks are present. There is no ankle clonus, but rectus clonus is present on the left side. The pupils are equal, and react to light and accommodation; there is no nystagmus. Abdominal reflexes are present and normal; the plantar reflexes were not elicited. The cranial nerves are normal. There is no hypotonus, no Kernig, no inco-ordination, no anaesthesia or hyperaesthesia, and no flexibilitas cerea. A Wassermann test was negative.

An examination of the patient for worms was negative. Her periods were regular, but these seem to have affected the sleepiness to some extent. Her eyes were examined by an ophthalmic surgeon; her throat, nose, and ears by a throat surgeon; her teeth were good. An x-ray examination of the skull was made and revealed nothing abnormal.

The conditions in which sleepiness occurs are: (1) epilepsy, (2) trance, (3) catalepsy, (4) encephalitis lethargica, (5) sleeping sickness (trypanosomiasis), (6) narcolepsy, (7) katatonic form of dementia praecox.

Differential Diagnosis from the Above Conditions.

In epilepsy (petit mal) unconsciousness lasts only a few seconds, and is almost always followed by headache. A trance lasts for hours, days, or weeks; hysteroid phenomena occur and other manifestations of hysteria. From catalepsy her condition was distinguished by the absence of muscular rigidity. The chief characteristic of catalepsy is the maintenance for hours of some attitude that would very soon fatigue a normal person; the limbs remain as if petrified. In encephalitis lethargica there is diplopia, or a history of it, and very often a moral change, or Parkinsonism may follow, or rigidity and weakness. It was not sleeping sickness due to a trypanosome, because she had never been abroad, and there was no wasting, as is always found in the late periods of that disease. It is more difficult to distinguish her condition from the katatonic form of dementia praecox. During her stay in hospital she had an attack of a hysterical kind, which might be described as approaching a maniacal nature. It was probably nothing more than a hysterical attack; it is well known that in

organic nervous disease patients may, and frequently do, get such attacks.

The treatment on which most reliance was placed was caffeine citrate 10 grains, liq. strychninae 3 minims, and nitroglycerin 1 minim. Gowers quotes a case of his in which a girl had attacks commencing at the age of 16 and lasting till she was 22. They were almost identical with those in the present case, and were arrested by the same drugs. These had no effect in this case. Later she was also given thyroid gland (dried) 2 grains, hormotone 5 grains, three times a day, with no effect.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

ANOMALOUS PETRO-SQUAMOUS VENOUS CANAL COMPLICATING MASTOID OPERATION.

A boy, aged 5, was brought to me with acute mastoiditis supervening on chronic otitis media: the only unusual clinical feature was that the maximum swelling and tenderness were above and rather in front of the ear, the mastoid process itself appearing unaffected. This generally indicates a very cellular mastoid in which the root of the zygoma has become pneumatized, so that infection from the antrum can travel forward into the temporal fossa. An operation, however, revealed that the mastoid was diploetic, and practically acellular; and, as so often happens in such a condition, the dura of the middle fossa tended to come well down over the upper part of the antrum. The latter had been opened, and I was enlarging the opening upward, working (rather cautiously on account of the position of the dura) from within outwards with a hand gouge, when there was a sudden brisk effusion of venous blood. This was puzzling; I was too far forward to wound either sigmoid or superior petrosal sinus; and it is very improbable that the gouge used thus would penetrate a sinus wall, which slips away under it. I supposed that I had damaged a large dural vein. It was also inconvenient, to say the least, for the bleeding seemed to come exactly from the region of the aditus, which was only just exposed; and the packing necessary to control it interfered with proper exposure of the aditus and of the root of the zygoma. When the bleeding was controlled I found that a large vein or sinus, about 3 mm. in diameter, ran in a bony canal across the roof of the mastoid antrum, about 1 cm. deep, and parallel, to the surface of the squama, and above and somewhat superficial to the aditus. It was separated from the middle fossa by a complete thin plate of bone, but its inferior or antral wall may have been dehiscant.

In early foetal life the lateral sinus drains into the primitive jugular vein—which in the adult becomes the external jugular—through the post-condylic foramen, which pierces the root of the zygoma immediately in front of the bony external auditory meatus. Later the internal jugular grows up internal to the primitive, forms the jugular bulb and, after entering the skull, the sigmoid sinus, and thus provides the normal adult effluent of the lateral sinus; the post-condylic foramen then closes. Occasionally, however, the original primitive venous channel coexists with the normal adult arrangement; we then find a petro-squamous sinus grooving the inner aspect of the angle between petrous and squama, communicating anteriorly with the temporo-maxillary vein through a persistent post-condylic foramen, and posteriorly canalizing the superior margin of the petrous to enter the lateral sinus. The vein or sinus that gave me trouble appears to be a variant of this petro-squamous sinus, situated in the substance of the bone instead of grooving its inner surface.

The sinus and canal are interesting from three aspects: first, the condition might explain why in the case of an acellular zygoma the mastoid infection approached the surface anteriorly; secondly, it produces an anomaly very inconvenient to the operator, even when the possibility is known; thirdly, it must be somewhat rare; in the course of several hundred mastoid operations I have never encountered anything like it. Convalescence was uneventful.

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DEATH FOLLOWING AN ALVEOLAR ABSCESS.

THE following details of an unusual sequel to alveolar abscess seem to deserve recording.

A healthy man, aged 25, had had no previous illness except indigestion six months previously, when he was advised to have dental treatment; this he did not do. On February 1st I was called to see him, and found an alveolar abscess in the left lower jaw. He had had very little sleep for some nights and looked ill, but he refused to have the tooth extracted under gas. Two days later I saw him again; the abscess having broken inside the mouth he felt much better.

On February 6th his wife reported that he was quite well, except for a slight headache. That same evening at 5 o'clock, while having tea, he said, "Oh, my head," and fell off his chair unconscious. When I saw him half an hour later he was unconscious, breathing stertorously, cyanosed, and sweating. The temperature was 102°; the pulse was irregular, the rate being about 120. He had bilateral external squint, the pupils were small and equal, and there was no reaction to light. There was marked rigidity of the neck, arms, and legs. He had passed both urine and faeces. He remained in this state until he died five hours later. No post-mortem examination was allowed.

My senior partner, Dr. J. C. Griffiths, also saw this man, and we are of the opinion that he had a blood-borne infection in the brain which caused an abscess to form; this eventually burst, resulting in acute septic meningitis. The fatal termination was very sudden, and emphasizes the fact that a prognosis must be guarded, even in cases of what are called "minor ailments."

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RUPTURE OF THE HEART.

A FEW days ago a man, aged 65, dropped dead in the street. Inquiries from members of the family elicited the information that he had been complaining of pain in the chest and back, with aching in both arms, and numbness and tingling of the ring and little fingers of both hands, chiefly the right. These symptoms were not severe enough to cause him to seek medical assistance, and, apart from them, he enjoyed good health.

At the request of the coroner for East Lancashire, I made a post-mortem examination. The pericardium was found to be enormously distended, and, when opened, a large quantity of serum escaped, together with a large clot. On the posterior surface of the left ventricle there was a tear one inch in length. The aorta was normal, except for atheromatous deposits in the cusps of the aortic valve. The transverse branch of the left coronary artery was completely occluded by atheroma, almost two inches from its origin. Two inches beyond this point there was a patch in the posterior wall of the left ventricle, an inch in diameter and less than a quarter of an inch in thickness, in the base of which was the tear already referred to.

The case is interesting in view of the rarity of the condition and the absence of serious symptoms preceding death. My own interest in the case was enhanced by the fact that I reported a similar one in the *Journal* of July 16th, 1927 (p. 99).

Ramsbottom.

C. W. CRAWSHAW, M.B., D.P.H.

British Medical Association.

CLINICAL AND SCIENTIFIC PROCEEDINGS.

BORDER COUNTIES BRANCH.

RHEUMATIC DISEASES: CAUSATIVE FACTORS AND TREATMENT.

At the annual general meeting of the Border Counties Branch of the British Medical Association, held on June 6th, Dr. MURRAY B. STEUART, the president, delivered his address from the chair, taking as his subject, "Rheumatic diseases: causative factors and treatment." He drew largely upon the discussions at the Bath conference on this subject in 1928 (*British Medical Journal*, i, p. 852), endeavouring to co-ordinate the various opinions with a view to arriving at a common denominator.

Dr. Steuart began with a word on the question of nomenclature, and after indicating the common confusion,