the required nerve is defined, and the needle introduced through the skin a little below the level of this rib, and passed obliquely upwards until it touches the lower border. The needle is then withdrawn a fraction of an inch, the point depressed a little, and then pushed forward again. This manœuvre is repeated until the point just misses the lower border of the rib. The needle is then pushed on for about a quarter of an inch well into the subcostal groove, and the injections made.

Dorsal Aspect of Foot and Ankle.

Fig. 6 illustrates the anaesthesia produced by blocking the external poplitea nerve, which can be easily reached as it crosses the neck of the fibula; the nerve can be felt in this position. The needle is passed down to the bone.

Fig. 6.

If following an injection of any of the foregoing nerves a complete anaesthesia corresponding to the distribution does not appear after a short interval, the needle should be reinserted, and a further quantity of the solution injected. The explanation of an incomplete anaesthesia is either that the solution is not evenly distributed around the nerve, or, in the case of the larger ones, that the analgesic fluid has not infiltrated the whole thickness of the nerve trunk, consequently some few fibres have escaped.

In the table on page 1703 is given a summary of the cases upon which this method has been used. These cases show that a very considerable variety of surgical procedures can be carried out under this form of anaesthesia.

The choice of the kind of anaesthetic to be used for any particular case must depend upon the special circumstances of that case. It is

obvious that no such thing as a routine anaesthetic or combination of anaesthetics can be employed with the best result, since very varying conditions, both local and general, are present in different patients. Therefore, although it is not intended to suggest that regional anaesthesia should always be used where possible, it may safely be urged that this form of anaesthesia is very valuable in those not infrequent cases in which general anaesthesia is from some cause or another contraindicated.

The surgical treatment of severe whitlows, which forms so large a part of the work in hospital out-patients' rooms, is a very good example of the usefulness and convenience of regional anaesthesia. A long anaesthesia is required in order that the parts may be clearly defined and the exact limits of the suppuration made out.

Out-patients are frequently improperly prepared for a general anaesthetic, and a journey through the streets, even some hours after recovery from ether, cannot be regarded as desirable. The length of anaesthesia given by novocain is far beyond anything that is likely to be required for surgery of this description, and, of course, there is the great advantage of the absence of after-effects.

The dangers of operations upon the thorax are chiefly connected with the general anaesthetics employed, and it is in the surgery of this region that regional anaesthesia is so valuable. These patients are frequently very ill indeed, suffering from embarrassed respiration and circulation, especially in such conditions as large empyemata, abscess of the lung, and pyopericardium.

Further, there is that increasing class of case in which the operation of decostalization is undertaken for the relief of chronic empyemata, bronchiectasis, etc. Here the post-operative dangers of general anaesthesia are serious.

It is well known that one of the chief causes of pneumonia following operations is reflex rigidity of the chest and consequently inefficient expansion of lungs already to some extent damaged by a pungent vapour and more or less filled with anaesthetic sodden mucus. It is therefore clearly a great advantage in all cases involving a

large wound of the chest wall to use a form of anaesthesia causing no pulmonary irritation.

Consequently it is in the surgery of the thorax that regional anaesthesia is most useful, and it is fortunately most easily and successfully carried out in this part of the body. Provided that the injection into the intercostal nerve is made well behind its lateral cutaneous branch, the whole thickness of the lateral wall of the thorax from the mid-line in front to within a few inches of the mid-line behind becomes anaesthetic. So that with equal facility a rib may be removed, the pericardium may be drained, or a tuberculous sternum treated.

Although the limits of this anaesthesia are really only defined by anatomy, yet it is quite obvious that there must be great objections to any form of local anaesthesia however perfect for any major operation upon the head, face, or jaws, and it is quite certain that few patients would face such an ordeal.

Finally, the uses and limitations of this method of anaesthesia may be very shortly summed up in two words—namely, anatomy and novocain. I should like to take this opportunity of expressing my thanks to the surgical staff of University College Hospital for the many facilities I have been afforded for the practice of this form of anaesthesia.

CASE OF STOKES-ADAMS DISEASE.

BY

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THE points of interest in the following case appear to me to be the occurrence of the disease in a woman, and the combination of all types of attack, namely, syncopal, epileptiform, and apoplectiform, in the one patient.

Mrs. A., aged 72, had enjoyed perfect health during most of her life—so much so, that she accomplished a 20-mile walk at the age of 70.

Seven years ago she consulted my predecessor for slight attacks of vertigo, which were put down to "liver." Off and on since then, whilst walking, she has had to stop and bend down to recover from what she called a "mazed" feeling.

In September, 1909, she was seen for attacks of giddiness. In these she had a distinct tendency to fall, and instinctively clutched at something for support, though no actual fall took place. About this time she noticed that she was short of breath on ascending stairs, etc. She was found to have a consistently slow pulse, between 30 and 40.

I saw her for the first time on July 4th, 1910. She was simply complaining of slight malaise. The heart was normal in size, and remained so subsequently. The first sound was rather weak, but no murmur was present. The pulse-rate was 44.

When seen on July 22nd she had had several "dizzy" attacks. Her pulse varied whilst I sat talking to her, being 34 at one time and 68 at another. Of this she was quite unconscious. She had a slight systolic murmur at the base, and her blood pressure equalled 225 mm. Hg.

She was put on arsenic and potassium iodide, and for a few days felt much better.

On August 1st she walked some distance to a railway station, and on arriving there lost consciousness without any warning and fell heavily on the platform. She consulted me an hour later, when the only noticeable thing, apart from some natural nervousness and shock, was a slow, irregular pulse varying between 36 and 40. She refused to go to bed, and next day again fell whilst talking to a groom in her stables. She was seen at midday, and whilst sitting in her chair suddenly said, "I am off!" turned pale, showed some general facial twitching, and lost consciousness for a second or two. There was a little mental confusion for a minute or so, and then she resumed conversation quite in a normal manner. A diagnosis of Stokes-Adams disease was made, and she was sent to bed.

On August 3rd both the introduction of a nurse and the occasion of my visit signalized attacks similar to that just described, and from this time onwards she had frequent attacks—one or more during the day. They were of varying severity, and in many of them she certainly did not lose consciousness. She merely exclaimed, "Ah!"

some facial twitching ensued, and in a minute or so she would be all right once more. Formerly she had complained of a "singing in the ears." This vanished, and her trouble was always a "hot feeling at the top of the head." Marked irregularity of the pulse was noted before several of these minor attacks, and the jugular pulse was often found to be exactly double that of the radial. The blood pressure fell to 195 mm. Hg. She was treated with strychnine and belladonna in small doses, and also by liq. trinitrin in 1-minim doses three times a day. This was gradually raised to 3 minims.

She continued in this condition till September 20th, when Sir William Osler and Dr. Gibson saw her in consultation. The heart was found normal, save for a

Tracing taken on September 20th, 1910, the blood pressure being 250 mm. Hg. It consists of apex, jugular, and radial pulsations with a time marker of one-fifth second. The interpolated diagram between radial and jugular pulsations indicates the events in the auricle (As) and the ventricle (Vs). It shows that only every third auricular contraction is followed by a ventricular; the rhythm is, therefore, of the 3:1 type, and the block is incomplete.

faint basal systolic murmur. The blood pressure was 250 mm. Hg, and the cardiographic tracings are here reproduced.

On September 22nd she had an attack in which she was unconscious for about a minute. The pulse fell to 27, and was very irregular both in time and strength. General spasmodic twitching of the facial muscles occurred at intervals during the day. The blood pressure was 230 mm. Hg.

September 26th. This morning she had several minor attacks with feelings of nausea and faintness. In the afternoon vomited after a glass of Apenta water; several other attacks of vomiting accompanied by an irregular pulse occurred during the afternoon. At 7.10 p.m. she vomited and became suddenly unconscious. The nurse said she went red for a few minutes, then pale. There was a general tremor for some seconds; then stertorous breathing began. The nurse gave her about 10 amyl nitrite capsules. When seen at 7.30 p.m. she was pale, clammy, unconscious. Pulse 144 and weak. Eyes turned up, and heavy stertorous breathing present. She was given $\frac{1}{8}$ grain strychn. hypod., 1 grain also of Nativelle's digitaline, and $\frac{3}{4}$ of Hoffman's anodyne. There seemed to be an immediate response: the breathing became easier and pulse stronger. After a little, the eyes became more normal, colour began to return to the face, the breathing was less stertorous, and marked general facial twitching ensued. For a few seconds the pulse became quite slow (40-50), accompanied by marked improvement in colour of face. Then back went the pulse to 140 again. Next ensued much restlessness, attempts to rise in bed, and she appeared to be going to vomit, but did not do so. Then the pulse began to beat in groups of 2, and subsequently became regular and slow. The patient quite gradually regained consciousness, made signs for a drink, confused speech returned to her, and then normal speech came back about three quarters of an hour after the onset of the attack.

September 27th. She rambled a little during the night, and for the first time her stools were offensive. In the temporary absence of the nurse she got out of bed at 5.45 a.m. and had another apoplectic attack; this time everything was normal again in fifteen minutes, though she passed through the stages of engorgement, unconsciousness, stertorous breathing, etc., as before.

September 28th. Very weak. Pulse 40, regular. Blood pressure 140 mm.

October 4th. Very feeble during last week. Refused all food, save milk and champagne. Heart sounds weak, with a diastolic murmur. Blood pressure 150. Sleeping badly and feeling sick. Now and then vomiting a little; she has had no sign of any attack. Given pituitary extract and ernutine with no effect on blood pressure.

October 5th. Pain in right intercostal muscles and some gouty swelling of left foot came on, and the next day she was much better in herself, but very irritable. Blood pressure 180 mm.

October 12th. All pain had gone after small doses of colchicum. Blood pressure 195 mm. Pulse 56, and irregular.

October 15th. In the morning she was thought to be very much better, and she had not had an attack for over a fortnight. Being a strong-minded person, she insisted in the afternoon on getting up to stool. She passed a small amount, then fell over and died.

The following notes of the *post-mortem* examination were kindly furnished by Dr. Gibson:

Post-mortem Examination.

The heart is larger than normal, and weighs 365 grams. The epicardial fat is moderate in amount. The apex of heart is formed by the left ventricle. The valves are normal and rather less sclerosed than is usually seen at this age. The right auricle and right ventricle are normal in size. Left auricle is normal. The cavity of left ventricle is slightly larger than normal. The columnae carneae are flattened. The muscular fibre of heart is everywhere pale and brownish. There is no sclerosis of endocardium of either right or left sides, either local or in relation with valves. The wall of the right ventricle and to some extent the left shows fatty infiltration from the epicardial fat. There is some hypertrophy of muscle of left auricle. The muscle of right ventricle is slightly hypertrophied, and that of left ventricle definitely so. There is no evidence of any gross lesion in the parts neighbouring upon His's bundle. The anterior coronary artery is definitely thickened and twisted near its opening into the aorta. This thickening is general with a few areas of fatty degeneration, but no calcification. The posterior coronary artery is similarly affected. The kidneys show early thickening of the arteries and the irregular depressions on the surface of the cortex characteristic of the arterio-sclerotic kidney, but in a very mild degree.

Microscopic Examination.

The section taken along the long axis of heart through His's bundle shows very marked fatty infiltration of the bundle, but a fair number of fibres are still present. The artery accompanying the bundle shows no marked changes. There is increased formation of fibrous tissue in neighbourhood of and extending into bundle; also very markedly in the interventricular septum, where also there is very considerable fatty infiltration. The muscular fibres of the ventricle are hypertrophied, and show extreme brown atrophy, but the striation is good. There is fatty infiltration and some increased fibrosis of the auricles and hypertrophy of the muscle cells. The section taken at right angles to the direction of main trunk of His's bundle shows a lessening of its total bulk by fatty infiltration. The fibres that are present show their striation and stain normally. The artery and vein accompanying the bundle are large, and the former shows a moderate degree of arterio-sclerosis.

NERVOUS AND MENTAL SYMPTOMS IN A CASE OF ADDISON'S DISEASE.

BY

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INTERNAL secretion in its relation to nervous and mental diseases has not, until quite recently, been considered seriously, or received the attention it deserves by those who are investigating the pathology of mental disorders. In view of the above fact, I think the publication of the following case will be of considerable interest to those who are researching, or who are contemplating research, in this branch of pathology. The case in question is one which affords valuable data of psychiatric and surgical interest.

The patient, H. S. S., was a male aged 49, manufacturer's agent. His family history was very good, and with the exception of gonorrhoea his previous history gave no evidence of any mental or physical illness. Early in October, 1911, he complained of an inability to do his work, and his friends noticed that he was depressed and restless.

These symptoms gradually increased, and the patient realized that he was suffering from some nervous ailment.