EXTENSIVE VENOUS INFECTION COMPLICATING MIDDLE-EAR DISEASE: THORACIC EMPYEMA: RECOVERY.

BY

NORMAN PATTERSON, M.B., B.Ch.EDIN., F.R.C.S.ENG.,
ASSISTANT SURGEON, GOLDEN SQUARE THROAT HOSPITAL; SURGEON
IN CHARGE OF EAR, NOSE, AND THROAT DEPARTMENT,
CROYDON GENERAL HOSPITAL.

I THINK the following case of recovery after widespread involvement of the venous channels is worth recording. The internal jugular contained infected clot down to a point a short distance from its termination, and the lateral sinus was thrombosed in nearly its whole extent. The condition of the patient for close on three weeks after the operation, with recurring rigors, looked hopeless. The occurrence of a thoracic empyema on the opposite side of the body is of interest. It is worthy of note that the organism responsible for this condition was the *Bacillus coli*, whereas that obtained from the jugular vein was the *Staphylococcus aureus*. It is difficult to judge the effect of the injections of vaccine; their administration was followed by no very definite signs of improvement. This seems, however, a line of treatment that ought not to be lost sight of.

The patient, a boy aged 13, was admitted to the Croydon General Hospital on May 31st, 1910.

Previous History.

For the last two and a half years the patient had suffered from a very offensive discharge recurring at intervals from the right ear. The parents ascribed the onset of the otorrhoea to a blow on the side of the head, which was followed by some haemorrhage from the ear. As long as there was discharge no pain was complained of, but during the periods of freedom from discharge the patient suffered from pain on the right side of the head. He had been treated from time to time by syringing.

On May 10th (three weeks prior to admission) the ear ceased to discharge. On May 24th, the patient vomited in school and came home complaining of pain on the right side of the head and in the back. These symptoms continued and were succeeded by shivering fits, which commenced on the 26th and recurred at intervals. There was no vomiting on the 28th and 29th. On the 30th a swelling was first noticed on the right side of the neck, and the patient vomited again. The bowels had been opened three times during the last six days. Before admission the case had been regarded as possibly one of typhoid fever. The Widal reaction was negative.

State on Examination.

On admission (May 31st), temperature 100.6°, pulse 120, respirations 32. The patient looked gravely ill. In a short time the temperature had risen to 105, and there was a definite rigor. Tenderness but no swelling was present over the right mastoid process, and there was an indurated tender swelling over the upper part of the course of the internal jugular vein. There were no signs pointing to meningitis or cerebral abscess. The spleen was just palpable. The heart and lungs were healthy.

Mr. Charles Wray kindly examined the eyes and reported as follows:

Ophthalmoscopic examination of the eyes showed the left fundus to be quite normal, but the disc in the right eye was distinctly swollen and the outline very obscure, especially upwards and inwards. No haemorrhages could be seen, and though the veins were distinctly full, the distension in no way suggested an impediment to the flow of venous blood such as one would have expected from the presence of the large clots found on opening the lateral sinus.

Operation.

The case being regarded as one of lateral sinus thrombosis with extension downwards of the infection into the internal jugular vein, that structure was exposed in the usual manner. Owing to the induration, the enlarged glands, and the discoloured condition of the vein, some difficulty was experienced in finding it. When exposed it was seen to be thrombosed. An attempt was made to get below the clot by extending the incision downwards. At a point a short distance above its union with the subclavian the vein looked more healthy, although still thrombosed, and a ligature was applied as low down as possible. About 2½ in. of the lower part of the vein was resected; it contained stinking degenerated clot, but no pus. A swab for bacteriological examination was taken. The incision in the neck was covered with gauze, and the mastoid antrum was laid open. The cortical bone was dense and of more than average thickness. The antrum was of moderate size, and contained foul debris, together with a small quantity of pus. Free exposure of the lateral sinus brought into view a discoloured sloughy-looking wall, and, on this being incised, disintegrated clot was found. There was no fluid pus present. More bone had to be removed in a backward direction, and the incision in the sinus was lengthened. Blood clot was removed nearly as far

inwards as the torcular, the last portions appearing healthy. Very free haemorrhage took place at this point, but it was quickly controlled by packing a strip of gauze between the vein and the skull wall. As the patient was showing signs of severe collapse it was necessary to leave the posterior meatal wall and tympanum untouched. The wound was packed with gauze. The incision in the neck was now closed except at the top end, where the internal jugular vein was brought out, and its walls anchored to the skin, and at its lower limit, where a drainage tube was inserted.

After the operation there was great restlessness, pulse 110, temperature 103° F. A pint of normal saline was run into the axilla. This was repeated as necessity arose.

Subsequent History.

For several weeks the patient remained in a very critical condition. The wound in the neck soon showed signs of extensive suppuration accompanied by sloughing; accordingly all the stitches were removed, an open gutter resulting. This, together with the wound in the skull, was frequently flushed out with hydrogen peroxide, and the upper part of the vein was syringed through with the same lotion. The temperature during the first three weeks was of an irregular pyæmic type, ranging from 97° to 104.8° F. There were frequent rigors.

On June 6th a vaccine of the organism (*Staphylococcus aureus*), which was cultivated from the specimen obtained at the operation, was injected. Injections were repeated on the 8th, 10th, and 11th.

On the 7th the patient began to develop a cough, with frothy expectoration, and on the 11th there was a severe fit of coughing, followed by acute pain in the cardiac region, rapid breathing, and collapse. There was no cyanosis. On examination of the chest friction sounds were heard, and were best marked in the region of the apex beat. These distressing symptoms did not last more than a few minutes. On the 12th there was a rigor, and on the 13th and 14th the expectoration, which still continued, was tinged with blood. The chest was again carefully examined, and signs of effusion were discovered on the left side. Clear fluid mixed with flakes of lymph was drawn off with an exploratory needle. The condition of the patient grew worse, and on the 18th a portion of rib below the lower angle of the left scapula was resected under local anaesthesia. About two pints of purulent fluid were slowly allowed to escape, and a large drainage tube was inserted. The patient was given a pint of saline in the axilla. The temperature shortly after the operation dropped from 104.8° to 101.4° F. From the fluid a culture of the *Bacillus coli* was obtained, and the patient was subsequently treated with a vaccine prepared from the organism. The boy from now onwards began slowly to improve, the temperature gradually subsided, and there were no more rigors. At one time the patient complained of pain in the right shoulder, and it was feared that trouble might arise here, but the condition passed off.

By July 6th the temperature was normal, and remained so. The wounds behind the ear and in the neck, which for a long time showed few signs of healing, had now begun to granulate. By August 20th the sinus in the chest was completely closed, the patient had put on weight and felt well. There was still a small granulating area behind the right ear. The ear was dry, and whispered speech was heard at 18 in. The patient has rather a large pad of adenoids, which will be removed subsequently.

My thanks are due to Mr. J. F. Robinson for his valuable help at the operation, and to Mr. R. G. Davidson, the senior house-surgeon, for the great pains and skill which he showed in the after-treatment of the case.

THREE CASES OF MALIGNANT DISEASE OF THE SPINE.

By THOMAS D. LUKE, M.D., F.R.C.S.,

PEEBLES.

PRIMARY malignant disease of the spinal column is, I believe, by no means a common affection. Of the three cases under consideration, only one was primary. The other two, however, were of interest from the vague character of the symptoms in the first place, and the difficulty in diagnosis until a radiograph was taken in one of the cases.

All were sent for treatment during the past year for a comparatively minor affection which was really a symptom of this grave disease, as the course of the cases proved.

CASE I.

Miss J., a teacher, aged 58, in a good state of nutrition, was sent to me in January, 1910, suffering from supposed sciatica. She hobbled into my consulting room with the aid of two sticks; she could not sit down in the ordinary way, but rather fell or collapsed into a chair when she could no longer support herself by means of the sticks. She had enjoyed good health until about a year and a half previously, when the left breast was removed for malignant disease. She complained of increasing difficulty in walking, of inability to go upstairs or

mount steps, and of the left leg "giving way" underneath her. The pain in the leg was not very considerable, but at night there was a great deal of pain around the waist about the level of the lower dorsal vertebrae, accompanied by a feeling of tightness and absolute inability to turn over in bed without assistance. The patellar reflexes were much exaggerated, especially on the left side, and the Babinski phenomenon was present. There was considerable confusion as regards sense of heat and cold.

The case struck me as pretty plainly one of organic disease—probably a recurrence of the new growth in the spine. A little massage and electrical treatment was tried to satisfy the patient that something was being done, but at the end of the week she was markedly worse, and I suggested the desirability of getting a neurologist's opinion. On the following day I took her to Dr. Edwin Bramwell, who at once confirmed my diagnosis. The patient left for her sister's home in the country at once, and I am indebted to Dr. Bryson of Colinsburgh for the following notes of her case while she was in his hands from early March until May:

"The patient complained chiefly of loss of power in the lumbar and gluteal region. She was unable to raise herself without using her arms when in bed. The pain in the back increased on movement. There was no anaesthesia, and the wasting of leg muscles was limited. But for the history of previous malignant disease the symptoms would have been considered very ambiguous. Later on I detected a tumour in the left lower quadrant of the abdomen, with involvement of the bowel and leading to vomiting, oedema of the legs, ascites and general wasting coming on rapidly."

At this stage the patient was so ill that for the sake of more adequate nursing she was removed to a home in Glasgow, where she died some three weeks later.

CASE II.

Miss H., aged 50, sent to me by Dr. James Wilson, of Edinburgh, in January, 1911, had had the left breast removed some two and a half years previously. She had a very large fibroid of the uterus for some years, which led to extensive bleeding, and was so bad that it was pronounced inoperable by a well-known gynaecologist; but she got over the menopause, and had since suffered no inconvenience from the uterine growth.

She could only walk with the aid of a stick, was very neurasthenic and anaemic, constantly complained of being tired, and often took several days' rest in bed. She was quite unable to walk any distance, but just able to get around the establishment by the aid of a stick, and sometimes her friend's arm. The patellar reflex was very markedly exaggerated, and the plantar reflex was of the Babinski type. A very striking resemblance to the former case was shown in the way in which the patient complained of inability to turn in bed, and also of the severe pain at night. This was relieved, as in Case III, by acetanilid and caffeine, until sleep was permitted. Under treatment the patient's general condition improved considerably, and she was also able to walk latterly without a stick, but the night pain, etc., continued unless palliatives were employed. The patellar reflex remained as brisk as ever, and on her return home a lump was discovered under the clavicle. A spinal radiogram was taken at once, and showed extensive disease of the lower cervical and upper dorsal vertebrae. She died on April 24th.

This case was a good example of the difficulty in diagnosis caused by coexisting neurasthenia and organic nervous disease. One sees the same marked neurasthenia in cases of locomotor ataxia, but in this disease the usual presence of more or less classical symptoms, the history of syphilis, and sex of the patient, renders diagnosis not difficult. But in a patient with a history of almost lifelong ill-health, with uterine trouble, anaemia, and neurasthenia in a very marked degree, with no definite new growth, one could not say with confidence that the spine was involved until a radiogram had shed some light on the matter.

CASE III.

Mrs. D., aged 61, was advised to come for treatment by an Edinburgh surgeon about the middle of October, 1910. She had been in his hands for some bladder inflammation, but was also in a run down condition, with slight neuritis in the left hand and some stiffness in the neck. There was no known previous malignant disease. She had enjoyed fair health until two years back, when she had undergone a series of minor operations for uterine and bladder trouble. The bladder affection was believed to be tuberculous. I first saw her in bed, and her symptoms seemed in no way severe. The thumb and two fingers of the left hand were painful from "neuritis," and she had a stoop when sitting in bed from the stiff neck. I ordered her some treatment suitable to the condition, and almost at once left on holiday. When I returned three weeks later I found the patient absolutely confined to her room, and unable to stand without difficulty, or to sit up in bed more than to a very slight degree. My colleague, Dr. Marshall, had examined the back of the neck, and found a good deal of thickening around the seventh cervical vertebra, and though the thought of a new growth occurred to him, we were disposed to regard it as rheumatoid in nature. The stiffness increased and the pain became more severe, so bad at times as to make the patient cry out with pain. Aspirin relieved her as a rule, and latterly, when that lost its effect, I found acetanilid and caffeine always soothed

her and produced sleep. Sitting up caused so much pain and discomfort that I only examined the spine three weeks later, when I found the thickening was rather more diffuse. There was no cachexia or general wasting. The patient was quite unable to turn in bed, and invariably had to lie on her back, as any side movement caused great pain.

The pain was so marked on any attempt to sit up and ran down the arms in such a characteristic fashion that I felt sure there was some rheumatoid disease of the spine causing pressure on the spinal nerves at the point of exit from the canal. Weeks went by, however, and no improvement took place. There was no anaesthesia, but much wasting of the arms and hands, and I felt so concerned as to the poor outlook for the patient that Dr. William Russell saw her with me on January 2nd, and expressed a strong opinion that the condition was malignant. A radiogram, taken by Dr. Edmund Price on January 7th, demonstrated very clearly extensive disease of several of the cervical and two of the upper dorsal vertebrae. The patient grew steadily worse, sinking pretty rapidly at the last and refusing food, owing to severe nausea. Complete paraplegia ensued on the morning of January 17th, and she died at 11.30 a.m. There were no bladder symptoms almost up to the end, excepting the slight frequency from which the patient had long suffered. Dr. Brewis, in whose hands the patient was for gynaecological treatment, informed me there was no question of uterine malignancy.

As in none of the above cases was a *post-mortem* examination possible, the actual nature of the growth cannot be decided. They were all extra-medullary growths, however, involving the bodies of the vertebrae in two cases at any rate, and the symptoms arising were due to pressure on the cord and to disease of the vertebrae not allowing sufficient "grip" for the muscles rotating and bending the back. This must be the explanation of the symptom common to all of them. Neurologists seem agreed that mere exaggeration of the patellar reflex cannot be held to signify any spinal organic disease, but when we get marked exaggeration accompanied by ankle clonus and the Babinski phenomenon attention seems legitimately directed to some grave spinal lesion. If we have severe pain at night running around the intercostal nerves to the front with the inability to turn and a giving way of one or other leg on standing, one would be inclined to suspect spinal new growth. The previous existence of a breast tumour of a malignant character is a great help; where this is absent, as in Case III, then the difficulty of making an accurate diagnosis is undoubtedly very much greater.

SOME CASES UNDER THE WORKMEN'S COMPENSATION ACT, AND OTHERS OF MEDICO-LEGAL INTEREST.

By L. A. PARRY, M.D., B.S., F.R.C.S.,

ASSISTANT SURGEON, ROYAL ALEXANDRA HOSPITAL, BRIGHTON.

I HAVE recently been consulted in a considerable number of cases of accidents and alleged accidents, by various insurance companies, and as many of these present points of medico-legal interest, I have collected brief notes of a series of them. The companies are always willing to pay for any genuine accident, and, on the whole, treat the claimants liberally; I do not remember a single instance in which compensation has been refused when I have advised the company that the claim was a just and fair one; but there are certain claims which are obviously unfair, and which they are compelled to contest. In these instances as a rule it is easy to give a perfectly fair and decided opinion, and the reasons for that opinion. But there are some cases, especially those in which there are no objective symptoms, examples of which I quote later, and in which the only complaint is of pain or of inability to use a joint or a muscle without pain, in which the greatest difficulty is experienced in coming to a just conclusion.

In a large number of claims the accident is so patent and clear that no medical opinion is sought at all, and the matter is settled between agent and claimant. But there are others in which differences arise, and in these the company seek the advice of their medical referee. The following examples have all occurred in a series, and are therefore a fair and average sample of the cases on which the companies require a medical opinion.

In many of the cases which come into court such contrary views are expressed by the medical men engaged