Clinical and other Notes

any part of his body. His pupils were equal and slightly contracted, both reacted to light. Breathing was rapid and laboured, the diaphragm and muscles of forced inspiration (the pectorals excepted) alone working. The pulse was 80; temperature normal. During the night he passed a motion under him in bed. The patient was placed flat on his back in bed and an ice-bag applied to the back of his neck.

In the morning an attempt was made to obtain a skiagram of the cervical region, but owing to the patient not being able to be moved, for fear of causing further injury, the resulting plate was very indistinct and nothing could be made out. Screening showed nothing. The question of operation was considered but abandoned, as it was not thought that the patient could stand an anesthetic, his breathing being now very difficult. He complained of a choking sensation in his throat and inability to get his breath. Loss of sensation had now extended to just above the second rib, but he was still able to raise his arms. His temperature had risen to 102.5°F., and his pulse was 102. Persistent priapism was present, he also had retention of urine, a catheter being passed and 8 ounces of urine withdrawn. At 12.30 p.m. he became very cyanosed and breathing ceased, artificial respiration was resorted to, but without avail.

Death was apparently due to ascending paralysis, affecting the respiratory nerves. Pressure from haemorrhage into the spinal canal was considered most likely, the primary cause being possibly fracture or partial dislocation of one of the cervical vertebrae and crushing of the cord. The sudden onset of paralysis after the accident rather pointed to this; though the absence of all external signs of violence made it difficult to believe that so much injury had been done.

Post-mortem examination showed that the fourth and fifth cervical vertebrae were both fractured, the laminæ on either side the spinous process being broken through in each case. No displacement of the fragments had taken place. On removal of the fractured portions a good deal of dark-coloured blood escaped from the spinal canal, its origin probably being the longitudinal vein or one of its branches. No bruising or laceration of the spinal cord had occurred. No other lesion was discovered in any part of the body.

PERSONAL EXPERIENCE OF SPINAL ANALGESIA.

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On November 29th, 1909, I was operated upon at the Queen Alexandra Military Hospital, London, for radical cure of a right inguinal hernia. I walked to the theatre, and was directed to lie on my right side on the table, with knees well drawn upwards and lumbar region arched. I received
the injection in the space between the second and third lumbar spines. I felt the slight prick of the needle in the skin, and after waiting anxiously for the further introduction of the needle into the spine, from which I expected pain, I asked the operator to let me know when he was about to inject the stovaine, I was agreeably surprised to hear that it had already been done some time previously.

I felt no unusual sensations for a minute or two, when I began to feel that a warm glow was spreading down the right leg, accompanied by a sense of tingling and a feeling as if the leg was becoming swollen by an increased flow of blood to the part.

Within five minutes after the injection I was being tested as to sensibility by pins. A pin-prick in the third lumbar area on the right side was only felt as a pressure, as if pressed upon by the finger-tip, whilst immediately lower down the right leg the point of the pin could be definitely felt as such; this loss of tactile sensibility rapidly passed down the leg until it reached the toes, and at the time when a pin-prick was no longer appreciated, I could still move my ankles and toes. The left side and leg, which, so far, were uppermost as I lay on the table, were at this stage only affected to a slight extent.

After about six minutes my right leg felt quite heavy and congealed and anæsthesia was absolute. I was then turned on my back, and the operation was commenced about ten minutes after the injection. Somewhat the same sensations now began to develop in the left side and leg, but the effect on this side never appeared to be so complete as on the right side.

I did not know when the operation was begun, and was only able to guess the time by the sound of the forceps and the movements of the operator.

The skin incision caused a slight feeling of pressure in the region of the left inguinal canal. Throughout the operation any sensation seemed to be referred more to the left side than to the actual site of the operation. I had a slight consciousness that the cord was being touched during the time when it was being actually manipulated and dragged upwards from the wound. About this time I was asked to cough, and when I did so, it felt as if my abdominal contents were being forced down on to a semi-congealed and solid mass in the pelvis.

When the conjoined tendon was being stitched to Poupart's ligament, I had a very distinct feeling with each stitch that the surface of the skin over the spleen was being pressed upon as if by a warm body; I was not convinced that the feeling was unreal until I placed my own hand over the part. When Poupart's ligament ceased to be stitched, the sensation was no longer felt.

The upper extent of the anæsthesia reached to the eighth dorsal segment, and sloped downwards with the line of the intercostal nerves.
It ceased absolutely abruptly, so that on one side of a zone half an inch wide a pin-prick was definitely felt, whilst on the other side it conveyed an indefinite sense of pressure only.

Towards the end of the operation, about forty minutes after the injection, sensation appeared to be returning. I first felt as if the part was being lightly irrigated by a stream of tepid water. (There were no fluids used throughout.) As each of the superficial stitches was being passed, I felt as if each stitch was being forced through with an extremely blunt instrument. The sensation was not a painful one, but now for the first time it was referred to the actual site of the wound.

During the whole time of the operation I felt not the least pain, nor was I conscious of the least constitutional effect of any kind; my pulse remained normal; I chatted with those around as if I had been assisting at the operation on another person. Though the direct view of the operation was shut off by a screen, I was able at intervals to obtain a reflected view through a glass plate. I may remark that I did not smoke before or after the operation.

On being put back to bed I felt collapsed and sick for about five minutes, otherwise I was quite fit.

About the time I had returned to bed my left leg had practically recovered. My right leg was still immovable, it felt at least thrice as large as the other, and I was not conscious of its position as regards the rest of the body. Sensation appeared to have returned before the power of movement. In about two hours after the injection all signs of the stovaine appeared to have disappeared in all parts.

As sensation returned, I felt intense pain in the wound; it lasted for about six hours, when it gradually passed off, and about 7 p.m. that night I was comfortable. At 9 p.m. I had a small dose of morphia, it seemed to have little effect, because, though I spent a night without pain, I had no sleep at all. The next three nights I had practically no sleep, but had no pain. On the fourth night I had 10 grains of trional and slept seven hours, and awoke all right and had no further discomfort.

Conclusion.—A month after the operation: (1) I felt no pain during the operation. (2) Beyond the pain in the wound as sensation returned, and the subsequent insomnia, I had no discomfort of any kind; I had no headache or backache.