TEMPORARY PARTIAL HEART-BLOCK
OCCURRING AS A SEQUEL TO ACUTE PNEUMONIA.

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DEPRESSION of conductivity of the auriculo-ventricular bundle, produced by chronic interstitial changes in the heart, has often been recorded. As a result of acute disease, however, it appears to be rare. It has been observed in cases of influenza and acute rheumatism, but I have been unable to find any reference to this condition being associated with acute pneumonia. The details of the following case may therefore be of interest.

The patient, a young man, aged 23, was admitted to the Sheffield Royal Infirmary suffering from acute lobar pneumonia. He was well developed and had had no previous illness. The left lower lobe alone was affected, and on examination the other systems appeared to be healthy. The disease ran the usual course, the crisis occurring on the seventh day, after which improvement commenced. During the febrile stage there were no unusual signs or symptoms. The pulse-rate at that time never exceeded 108 beats per minute, and was quite regular. The sputum, which was scanty, was rust-coloured and contained pneumococci. After the crisis the pulse, as is usual in the disease, slowed down, and on the following day was 80 per minute and regular in force and frequency. It continued so for about a week, at the end of which time it was noticed that, although still regular in force, there was some irregularity in the frequency of the beats. Long pauses occurred as if a beat had been missed. Sometimes several of these beats occurred in succession, resulting in a reduction of the pulse-rate to 50 per minute. More commonly, however, a pause occurred after four or five regular beats. The type of irregularity was fairly constant. The pauses never at any time appeared longer than would be accounted for by one missed beat, and, as a rule, one long beat would follow three, four, five, or six shorter and regular ones. This state of matters continued till about four weeks after the crisis, when the pulse again became perfectly regular in rate and rhythm, and remained so while under observation during the following month.

The pulse was thus irregular for a period of three weeks, commencing to be so a week after the crisis. The irregularity was usually more marked in the evening, and appeared to give the patient no discomfort. Examination of the heart did not at any time reveal any physical signs of disease. The accompanying jugular pulse tracings give an explanation of the condition. It is seen that the auricles are beating regularly. During the long pauses an auricular wave occurs which is not followed by a carotid wave. In the first tracing the *a.-c.* interval is seen to gradually lengthen until a missed beat occurs. Following the pause the *a.-c.* interval is seen to be about normal (one-fifth of a second). The missed beat had evidently given the auriculo-ventricular bundle a rest which restored its conductive power. In the second tracing the heart-block is seen to be more marked. Every third auricular contraction fails to be followed by a ventricular one.

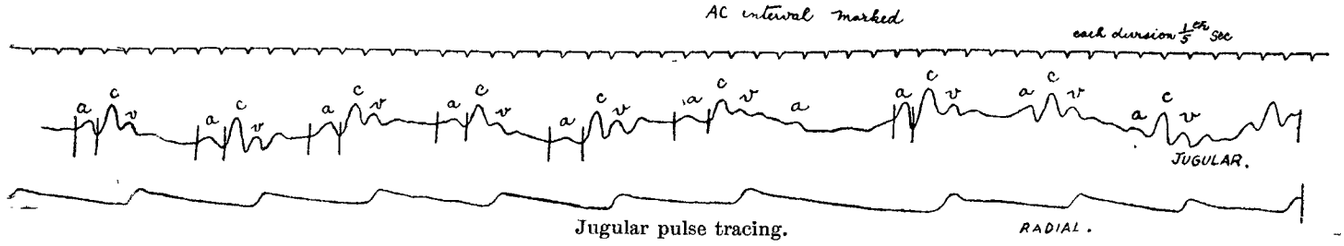
The patient made a perfect recovery, and when discharged the pulse had been regular for four weeks, and jugular tracings showed a constant *a.-c.* interval of less than one-fifth of a second. While an out-patient during the following three months no recurrence of the irregularity was noticed.

During his illness the patient did not receive any drug of the digitalis series. Administration of these drugs has been observed to produce a condition very similar to that described. The depression of conductivity must have been due to the toxins in some way affecting the auriculo-ventricular bundle, and producing a condition which was evidently quite recovered from. That the grave sign of heart-block should follow a comparatively slight attack of pneumonia, should be unaccompanied by subjective signs, and be followed by complete recovery is interesting. The case illustrates the value of a jugular pulse record, without which one could not with certainty have diagnosed the nature of the irregularity.

The patient was under the care of Dr. W. S. Porter, to whom I am indebted for permission to publish my notes.

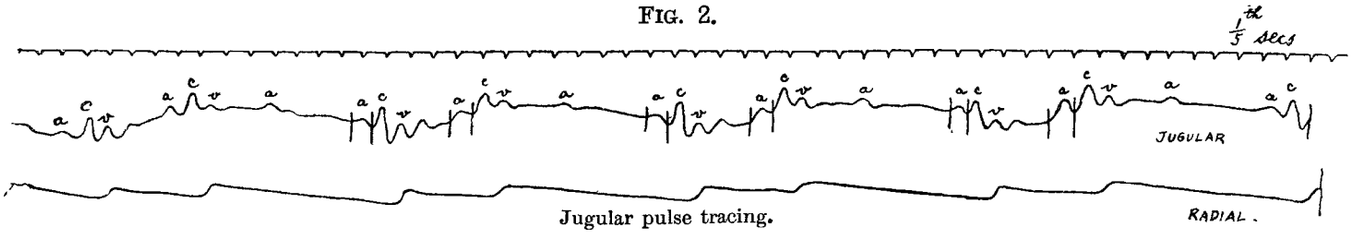
Plaistow Hospital, E.

FIG. 1.



Jugular pulse tracing.

FIG. 2.



Jugular pulse tracing.

SPINAL ANALGESIA.
REPORT ON 400 OPERATIONS AT THE MILITARY HOSPITAL, ALDERSHOT.

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SINCE the introduction of spinal analgesia into this country, following the publication of Mr. A. E. Barker's paper,[1] the use of this method for the induction of anæsthesia has rapidly extended. There appears, however, to be still some diversity of opinion among surgeons as to the drug most suitable for this purpose, as well as some doubt as to the range of applicability of the method. It may be useful, therefore, to compare the following table of cases, where the drug used has been the same in every case, and in which all were injected (with few exceptions) by the same operator using the same technique.

The choice of a drug for injection into the lumbar sac has gradually been narrowed to one of three substances—namely, stovaine, tropacocaine, and novocaine. Having reported previously[2] my experiences with these drugs, it is only necessary to repeat here that the 5 per cent. solution of stovaine and glucose, as formulated by Mr. Barker, has given the most consistent and reliable results. This conclusion is well borne out by the results of these 400 cases, in all of which this solution was used, during the past two years in the Military Hospital, Aldershot.

[1] Brit. Med. Jour., March 23rd, 1907.
[2] Royal Army Medical Corps Journal, August, 1908, and October, 1909.

The classification of the cases is given in the accompanying table :—

Abdominal Operations (212 Cases).

Herniotomy	111	Intestinal anastomosis	2
Appendicitis, acute	44	Other laparotomies	7
Appendicectomy *à froid* ...	44	Operations on kidney	1
Gastro-enterostomy	2	Resection of ribs, empyema ...	1

Non-abdominal Operations (188 Cases).

Piles (Whitehead) and fistulæ ...	45	Wiring fractured patellæ ...	5
Pubis and genitalia	65	Internal semilunar cartilage of knee	20
Reduction of dislocated hip ...	1	Other operations on lower limbs	49
Amputations—thigh, leg, foot	3		

Failures to enter dural sac or induce analgesia ... 0

There are one or two points in connexion with this table which call for remark. There was in this series no case of failure to enter and inject the spinal sac. There was no case where injection was not followed by adequate analgesia. There was no case which gave cause for any anxiety as to the safety of this method. The patients were mostly young soldiers, and I had the advantage of three years' previous experience with this procedure both in London and Africa.

There were only two cases in this series where a general anæsthetic was employed to supplement the spinal injection. The first was a patient very debilitated by tuberculosis who required amputation of the femur for a tuberculous knee. This man was given chloroform before entering the operating theatre, as he was in too great pain to be removed otherwise. While under the general anæsthetic 5 cgm. of stovaine were injected into his lumbar sac for the purpose of minimising the shock of the amputation. The influence of stovaine in diminishing shock has so recently been reported on by the Arris and Gale lecturers[3] that it is only necessary to state here that my clinical experience leaves me in complete agreement with their findings.

The other man who was given chloroform was a case where a ruptured appendix was suspected. He was given 5 cgm. of stovaine and the abdomen opened ; a perforated duodenal ulcer and peritonitis were found, and the ensuing operation of gastro-jejunostomy (which occupied 100 minutes) was completed under chloroform.

There is another advantage of this stovaine-glucose solution which apparently has not been fully realised, though pointed out in Mr. Barker's papers on many occasions. There have been several papers published recently in which the workers in this field do not seem to be confident of the height or duration of the analgesia that they may expect to obtain after a given injection, but these can be readily estimated beforehand with comparative certainty by the use of this injection compound of a higher specific gravity than the spinal fluid. The solution containing 5 per cent. stovaine and 5 per cent. glucose is heavier than the cerebro-spinal fluid ; it has a specific gravity 1023, the specific gravity of cerebro-spinal fluid being 1007. This means that, by slightly elevating the pelvis of the patient before injection in the lateral position, the solution can be localised to any given segment of the spinal cord, as the solution will flow to the most dependent part of the curve of the spinal canal and the height of the analgesia can thus be determined before any injection is given.

As regards the duration of the analgesia, I have found that, with trifling variations, an injection of 0·9 c.c. of this solution, which contains 4½ cgm. of stovaine, maintains analgesia to the level of the umbilicus for 45 minutes. This gives ample time for operations on herniæ and appendicitis. The amount of this solution that may be used can be increased, and in one case in this series the injection of 1·2 c.c. (or 6 cgm.) of stovaine was ample for the performance of the operation of gastro-jejunostomy. This was a severe test of the method, and its success a striking demonstration of its potentialities, as complete analgesia was maintained at the level of the xiphisternum for the 40 minutes required to complete the operation.

As regards the after-effects of injection in these series they were fairly constant. When the analgesia extended above the umbilicus, in 24 per cent. of the cases slight faintness or nausea came on from 10 to 15 minutes after injection. This passed off in 10 minutes, when the patients became drowsy and comfortable. On returning to the ward 7 per cent. vomited ; amongst these were several cases of abdominal trouble who had been vomiting before operation. Headache was reported in 40 per cent. of the cases. It was usually mild and seldom interfered with the patients' sleep. In 35 per cent. of the cases injected there was no discomfort of any kind either during or after operation, and in the words of the theatre attendant, "they did not turn a hair."

Whether spinal analgesia or some form of inhalation anæsthesia is preferable for routine use is a question for the decision of the individual surgeon. In the hands of a careful administrator, and in cases where analgesia is neither required nor obtained above the nipple line, the use of this stovaine-glucose solution is at least as safe as that of chloroform. Its field of usefulness is, therefore, restricted when compared with inhalation anæsthesia. On the other hand, life-saving operations can be performed under spinal analgesia in cases where chloroform or ether is inadmissible, such, e.g., as amputation of the leg for diabetic gangrene or in a patient with advanced cardiac disease. With stovaine analgesia there is an absence of shock during operation which is not obtained under inhalation or any other form of anæsthesia. Also, the muscular relaxation is so complete that much less time is required to complete an operation than if chloroform were used.

For those who can always command the services of a good anæsthetist the choice of an anæsthetic is not a pressing matter, but for those who work abroad and have to operate short-handed, or perhaps even single-handed, a knowledge of spinal analgesia is a most valuable asset. To obtain the best results with this method the operator must have experience of the technique. It is among the first 50 or 100 cases injected that incomplete analgesia or other troubles are likely to occur, and to emphasise this fact I thought it was worth recording this series.

Aldershot.

[3] Brit. Med. Jour., April 27th, 1912.

OVARIOTOMY ABOUT FORTY YEARS AFTER A DISCHARGE OF FŒTAL BONES THROUGH THE RECTUM; RECOVERY.

DEATH A YEAR LATER AT THE AGE OF 78 FROM STRICTURES OF THE SMALL INTESTINE AND OF THE COMMON BILE-DUCT.

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I AM indebted to Mr. J. Kingston Barton for the clinical notes and the post-mortem report of the case recorded below.

The patient, whose age was 77 at the date of the ovariotomy, was the mother of four children. She stated that about 40 years earlier she was very ill from obstruction of the bowels, and that the bones of a fœtus were discharged through the anus at that time. She recovered completely. Towards the end of the child-bearing period three or four miscarriages occurred, and were attributed to the presence of a tumour diagnosed as a fibromyoma of the uterus. In 1897 Whitehead's operation for hæmorrhoids was performed and a tumour attached to the left side of the uterus was recognised during convalescence. In 1903 the patient had an attack of inflammation in the region of the vermiform appendix. She had a good deal of bronchial catarrh from time to time and some rheumatic pains, but otherwise led an active life and required little medical help until 1910 when the abdomen gradually became large, and on July 9th Mr. Barton's assistance was sought on account of bowel difficulties. Enemas and calomel gave relief, but after a week a large quantity of fluid in the peritoneal cavity showed no tendency to diminish, and floating in this there was a hard mass attached to the left side of the uterus. In consultation it was agreed that the tumour was solid and that probably it arose from the ovary. Although the patient was somewhat feeble it was decided to open the abdomen and remove the tumour if it was of ovarian origin and if the difficulties did not seem too great.

At the operation after much fluid had escaped a pale, solid tumour of the left ovary, measuring about 5 inches in its longest diameter, was found adherent to the left side of