The stomach contained foul dark brownish-green fluid, which had also stained the oesophagus.

The small intestine was distended throughout with the same material as in the stomach. At the ileo-caecal valve the lumen of the intestine was completely closed by a growth which had apparently originated in or near the submucous layer and had grown towards the lumen without ulcerating the lining membrane. This was the seat of obstruction, for beyond this point the gut was empty and collapsed. In all probability here was the primary growth.

The liver contained a few nodules of growth on the surface and in its substance.

The kidneys were slightly fibrosed.

The remaining abdominal viscera presented nothing of interest.

The spinal cord. The theca was found to have been punctured between the eleventh and twelfth dorsal vertebrae. There was a puncture in the membranes over the lumbar enlargement at this point, and the blood vessels were engorged over the surface of the cord. No haemorrhage was observed, either outside or inside the spinal theca, except that which had already been seen outside the bony canal in the muscles and subcutaneous tissues of the back.

The external appearance of the spinal cord and of the brain were perfectly normal, and no injury was observable in the cord itself. It did not appear to have been touched by the needle, and macroscopically its structure was normal.

There can be no doubt that this man's death was directly due to the toxic effects of an intraspinal injection of stovaine and strychnine. Shock caused by traumatism is negated by the absence of any definite injury to the cord or its membranes, but the sudden and fatal onset of cardiac and respiratory failure was exactly what might be expected of a reagent producing the same changes in the medullary region, as was purposed to be produced in the lower dorsal segments of the cord. Prior to the injection the patient was in the usual bad condition of a man with advanced intestinal obstruction, but except for his vomiting, I should not have hesitated to submit him to a general anaesthetic. As far as his heart and lungs were concerned, a general anaesthetic was by no means contraindicated, though his extreme distension undoubtedly made his chances of ultimate recovery very doubtful.

After the injection had been made, and when I was about to test the skin for anaesthesia, I noticed the unmistakable signs of profound collapse passing over his face, and the events which so speedily led to his death then ensued. Jonnesco advises that the patient be sat up with the spinal column bent forward to admit of the easy introduction of the needle.

This was not possible in the present case, and in view of his statement that a second injection can be given—necessarily in the recumbent position—to prolong the anaesthesia, I did not hesitate to give it in this position. As long as the head is raised there should, I think, be no more danger in so doing than in giving a cervico-dorsal injection.

My previous experience of the dorso-lumbar method in a case of acute obstruction was so satisfactory as to encourage me to think that the perfect anaesthetic in these difficult cases had been found. In this case the absolute analgesia of the whole abdomen, its complete relaxation, together with the entire absence of peristalsis and inclination of the distended bowels to press through the wound—in other words, the abdominal calm—were a new and most satisfactory experience of abdominal surgery. It seems strange that two such similar cases should end so differently—that in the one the higher centres should exhibit such profound toxæmia, while in the other they should be in no way affected.

In his paper on this subject, recently published in the JOURNAL (1909, vol. ii, p. 1396), Jonnesco has extolled the wonderful safety to be procured by combining strychnine with the anaesthetic reagent in the intraspinal method of anaesthesia. In this particular case I do not wish to acquit myself entirely of responsibility in the matter of dosage; for, although Jonnesco utters no grave warning against full doses, he does advise that the amount of 10 cg. shall be reduced in cases of severe illness. At the same time, such was the acuteness and rapidity of onset of the toxic symptoms that a much smaller dose (5 cg.) would, I believe, have been attended with great danger, even if nothing worse had happened. It may be that this patient exhibited an idiosyncrasy, but, in view of the serious results that have come to my notice in certain other cases, I shall hesitate in the future before injecting into the dorso-lumbar region, even of a healthy adult, a larger amount of stovaine than 5 cg.

HAEMOPNEUMOTHORAX WITHOUT TRAUMATISM: RECOVERY.

BY

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CASES of haemopneumothorax are sufficiently uncommon to be worthy of note; while excluding those due to injury, the condition is extremely rare. We have only been able to find records of two cases at all resembling the present one and both were fatal.

This patient was first seen on September 8th, 1909, in consultation with Dr. Hamilton Campbell (Partick), when signs of hydropneumothorax were present, and on performing paracentesis about 5 oz. of fluid, evidently blood mixed with serum, but no pus, were withdrawn. He was admitted the same day to the Western Infirmary.

History.

He was a clerk aged 31 years. On rising from his bed on the morning of August 27th, when on holiday, he experienced some pain and a sense of tightness in the left side of the chest and in the region of the stomach, and was rather breathless. He had lain without a nightshirt in a damp bed, and to that cause attributed his illness. In spite of his condition he was able to travel home, a distance of some ninety miles, and commenced work on August 30th. On September 3rd, when walking to his work, he had a similar but more severe attack of pain in the left chest and shoulder. He felt faint, but managed to get home by tram and went to bed, where he remained till removed to hospital.

Condition on Admission.

He had marked signs of hydropneumothorax. The left side of the chest was bulging and did not move with respiration. When lying flat on his back a tympanitic note was obtained on percussion over the whole left front of the thorax, and also on the right side to a line drawn from the suprasternal notch to a point $1\frac{1}{2}$ in. to the right of the mid-sternum at the level of the fourth cartilage. The respiratory murmur, vocal resonance, and fremitus were diminished over all this area. When the patient was sitting up there was an area of dullness below the level of the fourth rib on the left side, extending down to the costal margin. Behind, dullness reached to the level of the seventh dorsal spine, and this level rose as the patient reclined. Above this a tympanitic note was obtained, with absence of respiratory murmur and vocal fremitus and deficient vocal resonance. In addition to the tympanicity and movable dullness, splashing sounds on succussion and the coin sound were typically present, but there was no metallic tinkling. The only area of cardiac pulsation was on the right side in the fourth space, with its centre about 3 in. from the middle line. A small area of relative dullness was also made out in this region, extending from the upper border of the fourth rib to the fifth rib, and transversely from $1\frac{1}{2}$ to $3\frac{1}{2}$ in. to the right of the mid-sternum. The heart's sounds were well heard in this area, free from murmur; they were quite inaudible in the normal apical region, and only indistinctly heard toward the upper part of the sternum. The pulse was 108, regular, small, and weak. The liver was displaced downwards, relatively more on the left side, as were also the stomach and spleen. The temperature at first was of an irregularly remittent type, ranging from 98° to 101° F.

Course of the Disease.

Improvement was steady; by September 13th the area of cardiac dullness was more definite, and almost reached the middle line, while the liver had risen a little.

On October 2nd, cardiac pulsation was seen in the fifth left interspace $2\frac{1}{2}$ in. from the mid-sternum. The absolute liver dullness reached the sixth rib in the right mid-clavicular line. The signs of hydropneumothorax were, however, still present. On October 16th the heart was beating in its normal situation, and although splashing could occasionally be heard, no other definite signs of pneumothorax persisted. On October 20th, six weeks after admission, all signs of pneumothorax had disappeared, and he was allowed to go home.

He reported himself on November 4th, and with the exception of slight diminution of movement and respiratory murmur at the left base, the signs had cleared up, and no evidence of intrapulmonary mischief could be detected. He expressed himself as feeling very well. Three months later he still looked quite fit and is regularly at his work.

The treatment was symptomatic, and no further attempt was made to remove the fluid.

It is difficult, if not impossible, to determine the cause of the condition. There was certainly no injury. He was not of a specially robust appearance, and thought he might have lost flesh during the past year, but was always able for his work, and had often to work late. He had a slight cough, and when in hospital his expectoration, which was not at any time copious, was examined for tubercle bacilli, but always with a negative result. Von Pirquet's test for

tubercle gave a slight positive result. During the first week his temperature ranged from 98° to 101° F., but for the last five weeks it was rarely above normal; the pulse was about 80 and the respirations 20 to 30.

Two points are of interest in the present case and demand an explanation, first, the occurrence of pneumothorax in a patient without obvious cause, and, secondly, the presence of blood along with the pneumothorax apart from injury.

Of all causes of pneumothorax, phthisis is, of course, much the commonest; of 918 cases compiled by Biach¹ from thirty-eight years' records of three Vienna hospitals it was the cause in 715, or 77.8 per cent. Gangrene, empyema, injury, bronchiectasis, and emphysema came next in order, while 14, or 1.5 per cent., are noted as due to uncertain causes. Hall² in 1887 collected 31 cases of pneumothorax occurring in the apparently healthy, including 21 previously noted by West; he found a strain of some kind to be the chief exciting cause, and that even if serous effusion followed, recovery in from five to six weeks was the rule. Haemothorax (that is, effusion of blood and not simply blood-stained fluid), on the other hand, is usually due to trauma or rupture of thoracic aneurysm, while tubercle and malignant disease figure as other possible causes.

Finlay³ states that, apart from injury, haemopneumothorax is extremely rare, and that the cause is altogether obscure. He refers to two cases which may be briefly noted.

Pitt⁴ in 1900 made a communication to the Clinical Society of London "on a rapidly fatal case of haemopneumothorax apparently due to rupture of an emphysematous bulla." The patient was a youth, aged 18 years, who was attacked with pain when taking a walk and died next day. At the autopsy the pleural cavity was found to contain 8 pints of fluid blood and clot enough to fill the hands three times. Near the apex of the lung a ruptured emphysematous bulla was found, quite sufficient to account for the air, but no evident cause for the blood could be found, unless it came from an adhesion which extended from the bulla to the pleura, and which had been torn across. No aneurysmal dilatation or patent vessel could, however, be seen. There was no trace of tubercle, either recent or old. At that time he examined the records, and could find no definite case of haemopneumothorax, apart from injury, save one case in the *Guy's Hospital Reports*, due to rupture of an aneurysm in a large phthisical cavity. He remarks, incidentally, on the rapidity with which the pleura can deal with effused blood, and also on its power of keeping the blood fluid, though not necessarily unaltered, especially in non-traumatic cases.

It is to be noted in this connexion that the fluid drawn off from this patient showed no tendency to clot, though it was kept for many days.

Shortly afterwards Rolleston⁵ reported to the same society "a case of fatal haemopneumothorax of unexplained origin" occurring in a youth aged 21, who died in six days. There had been no injury and no previous pulmonary symptoms. At the autopsy 60 oz. of fluid blood and a few ounces of clot were present in the pleural cavity, but no cause for either the blood or air could be found, although careful search was made. The possibility of the blood being due to some haemophilic condition was considered, although there were no grounds for the assumption, and the question was even raised whether the air might not have been derived from the blood by irregular respiratory movements causing a negative intrapleural pressure. The etiology, however, remained quite unexplained.

We have been unable to trace any case at all comparable occurring since these two, and while both of those were examined *post mortem*, the findings do not warrant us in arriving at any definite conclusion as to the causation of the case now reported, and one gets little or no guide from the ordinary conditions accepted as causes of pneumothorax. It must therefore be classified for the present as a case of haemopneumothorax of unexplained origin occurring in the apparently healthy.

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A CASE OF ACUTE TUBERCULOUS BRONCHO-PNEUMONIA AFTER GASTRO-ENTEROSTOMY.

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THE pulmonary complications after gastro-enterostomy are practically the only immediate dangers to be feared since the disappearance of the vicious circle, and their cause is as yet uncertain, but it seems to be generally admitted that they are most frequent after operations on the gastro-intestinal tract. By careful disinfection of the mouth for some days prior to operation, by avoidance of chill during the preparation of the patient, by the minimum exposure of the viscera, and by the adoption of the elevated position whenever the effects of the anaesthetic have worn off, much can be done to shield the patient from the onset of pulmonary complications.

In a first series of 80 gastro-enterostomies, including cancer cases, we have lost 2 patients—one from vicious circle, the other, a man of 60, from pneumonia. The following case is of interest from the specific variety of broncho-pneumonia which supervened, causing the death of the patient six months later.

A farm labourer, aged 39, complained of chronic indigestion, attended by severe epigastric pain without vomiting, usually most severe in the early hours of the morning.

HISTORY.

The condition had existed for fourteen years, and during the last year the patient had lost weight, and the nocturnal pain was at times so acute that he would pass the night rolling about doubled up in bed. Towards morning the pain became easier, and almost disappeared when he rose at 7 a.m. At 8 a.m. he was accustomed to take a cup of coffee, and an hour later the pain would return more or less continuously until mid-day, when he ate again and felt relieved, only to suffer another attack at 3 or 4 p.m. His next meal was at 6 p.m., after which he immediately felt better, but at midnight the onset of pain would awaken him. He had been in the habit of taking a herb tea in the night which gave relief, and occasionally sodium bicarbonate. The pain was situated in the median line in the epigastrium, and radiated round both sides of the thorax and through to the back. He had no vomiting, unless voluntarily induced, which he did from time to time to empty the stomach and so ease the pain, but he had constant eructations, and an acid taste in his mouth. He would pass three or four days without a motion, and said that on two or three occasions he had passed black motions. He was always worse in cold weather, and had become totally incapacitated for work. A diagnosis of duodenal ulcer was made, and confirmed by a test meal, which showed no stasis but considerable hyperacidity.

OPERATION.

He was admitted to the Clinique Mackay, Huelva, Spain, on January 17th, 1908. The chest was carefully examined and found to show no abnormality, nor was there any history of any chest trouble; the morning and evening temperatures were normal, and the heart and kidneys were sound. Careful disinfection of the mouth was carried out up to the day of operation. On the day before operation the patient was in great pain, and vomited some of the milk on which he was fed for twenty-four hours before operation.

On January 22nd, after five days' observation, the abdomen was opened above and to the right of the umbilicus by pulling the right rectus outwards. On inspection of the pylorus nothing abnormal was seen, but about 1 in. beyond the pyloric venous plexus on the upper surface of the duodenum an irregularly rounded ulcer, the size of a sixpence, with a hard, indurated base, was easily demonstrated to the onlookers. Posterior gastro-enterostomy, with clamps and suture, was performed and the patient put back to bed in good condition.

ACUTE TUBERCULOUS BRONCHO-PNEUMONIA.

(Remarks by Dr. Sutherland.)

During the first five days following the operation the patient's general condition was good, although he had slight cough and sputum which was attributed to the chloroform. Examination of the chest on the fifth day disclosed neither alterations in the breath sounds nor accompaniments, while the temperature during this period only showed the usual post-operative rise.

The sixth day, however, marked the onset of acute tuberculous broncho-pneumonia. The evening temperature made a sudden rise from 99° F. to 102° F., while auscultation revealed the general signs of bronchitis, which altered at the end of the week to those of broncho-pneumonia; that is to say, the rhonchi