which haemoglobin had been added, a medium I use altogether for the isolation of the gonococcus.

No gonococcus-like organisms grew on any of the media except the latter, and on this there developed a number of characteristic colonies, which on staining showed the usual characters of this organism. Subcultures of the pure growth were made on the ascitic media, as well as on various others; only on the ascitic agar did any growth occur, and only a limited number of the colonies showed ability or desire to grow in subculture. Even those which did grow in subculture were very sensitive to their surroundings, and the one pure culture which I kept for stock, now in its sixty-fifth transfer, needs to be transferred every day or it will die. I have not been able to make it grow on any modification, even, of the original medium.

TETANY IN ACUTE SUPPURATIVE APPENDICITIS IN AN ADULT.

BY

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THE condition of tetany occurring in adults is not altogether common. Perhaps the commonest conditions with which it is associated are gastro-intestinal disorders (gastritis, dilatation of the stomach, and intestinal parasites), pregnancy, and operations upon the thyroid gland; sometimes it complicates the infectious fevers, notably typhoid. Less rarely still is it associated with certain poisons taken into the system, such poisons being lead, alcohol, and ergot. It is said to complicate cerebral and cerebellar tumour, but this must be extremely rare. Tetany associated with surgical operation upon the thyroid gland is a very rare condition, and I cannot recall a case out of a large number I have seen operated upon. It has been said that tetany occurring in this last named condition is due to removal of the parathyroid bodies, and experimental work seems to lend support to this statement. The following is a case of tetany associated with acute suppurative appendicitis.

A. C., aged 35, married, was admitted to the Bradford Royal Infirmary on December 19th, 1912, complaining of acute abdominal pain. The onset was very sudden, and she had vomited once a bile-stained fluid. She was admitted thirty-six hours after the onset of the pain.

History.

We found out that four years ago she had been seized suddenly with acute abdominal pain, not so severe as the present attack, but she gradually got better without operation. She was seen two years later by Dr. Manknell, of Bradford, and her symptoms resembled those of gastric ulcer. She had another attack between this last and her present one, and again her symptoms suggested a gastric origin. She had suffered pain after food, constipation, and lassitude, and she was never well for any length of time. She had never had haematemesis, jaundice, or malaena. The urine was dark, but contained no extraneous matter.

Condition on Admission.

The temperature was 100°, pulse 112 and regular, respirations 24. The abdomen moved only slightly on respiration, and this on the left side only. There was a rigidity and general tenderness all over the right upper and lower abdominal quadrants. Pain was noticed on deep pressure in the right loin. The right flank was dull, the liver dullness was normal. On rectal examination, thickening and tenderness was found high up on the right side. The condition of acute appendicitis was diagnosed.

Two hours after admission the patient developed marked and typical tetany in both hands, and the pulse rose to 120. Her general condition suddenly became grave, and an immediate laparotomy was performed. She had never had tetany before.

Operation.

By means of the right rectus incision the abdomen was opened, and an appendix abscess containing about 2 oz. of stinking pus was evacuated. The appendix was retrocaecal, and its tip was bound down to the lower pole of the right kidney. There was a perforation about 1 in. from the end, and a concretion had escaped. The appendix was removed with some difficulty, and a large drainage tube inserted.

After-History.

The patient made an uneventful recovery, and left the hospital on January 5th, 1913. She had no return of the tetany while in hospital, and I hear from Dr. Manknell that she is now very well, and has been bothered in no way since the operation.

This case is interesting, as it is the only one I have been able to find in which tetany was associated with acute

appendicitis. When the tetany developed I was naturally prompted to reconsider the diagnosis and to think that after all it might be some gastric lesion. Unfortunately, owing to the nature of the operation, I was unable to look at the stomach; but seeing that this patient has had no gastric symptoms since, that she has very much improved on her condition prior to operation, and has put on weight and enjoyed and felt ready for food, it is possible that the stomach itself was never at any time at fault. In view of the excellent exposition of this truth by Sir Berkeley Moynihan, whose words on appendix dyspepsia we are all acquainted with, and which surgeons must by now have confirmed, I think it is quite reasonable to attribute the condition of tetany in this case to a diseased appendix. How the tetany was produced, whether it was toxic or reflex, I am not prepared to say.

This case may perchance shed some light on other cases of tetany which may have been attributed to dyspepsia, gastritis, or other gastro-intestinal conditions, and in such cases a careful inquiry into the history and an examination to exclude the presence of a diseased appendix should be thought about.

ADRENALIN IN CHLOROFORM ANAESTHESIA.

BY

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THE following case seems to be worth publishing if only to emphasize a very real danger which is perhaps not as widely recognized as it should be.

The patient was a male aged 26, a well-developed and healthy man. The heart sounds were normal; the urine contained nothing abnormal. Operation for deflected nasal septum was decided upon.

Anaesthesia was induced by chloroform given upon a Skinner's mask, the induction taking about seven minutes and being unaccompanied by struggling. The patient was transferred to the operating table, and it was decided to inject some adrenalin into the nose subcutaneously. At the time of the injection anaesthesia was light (a brisk corneal reflex being obtainable), the pulse strong, and the patient's colour good. No more chloroform was given.

About one minute after the injection the pulse suddenly became very rapid and then imperceptible; at the same time the patient's colour became leaden grey and the pupils widely dilated. About three deep gasps were taken after the pulse had failed, and then respiration ceased.

The head was at once lowered, artificial respiration performed, and 1 c.cm. of pituitary extract injected hypodermically, and oxygen administered. Finally, an incision was made along the left costal margin and the heart was massaged through the diaphragm, but to no purpose; 5 minims of a 1 in 1,000 solution of adrenalin was used for the injection.

The nostrils had been plugged ten minutes before the induction of anaesthesia with a solution containing cocaine (10 per cent.) and adrenalin.

At the *post-mortem* examination nothing abnormal was found in any of the organs.

In the *BRITISH MEDICAL JOURNAL* (September 14th, 1912) Dr. A. Goodman Levy published the results of experiments he had made upon cats under chloroform anaesthesia with injections of adrenalin. He found that when the anaesthesia was light after the injection of small doses of adrenalin into a vein, a definite series of events followed: the heart first beat more rapidly and forcibly, but then inco-ordinately, and finally ceased, the effect of the injection being to bring about fibrillation of the ventricles. Under deep chloroform anaesthesia the effect was much less marked, and passed off after a few moments, the heart again beating regularly. Under ether anaesthesia no effect was produced. The case quoted above seems to correspond exactly clinically with Dr. Levy's experimental work.

In the *Proceedings of the Royal Society of Medicine* (February 3rd, 1911) Dr. J. Blumfeld describes a case of sudden collapse following the injection of 6 minims of a 1 in 4,000 solution of adrenalin in a patient anaesthetized with C.E. mixture. In this case, however, the patient recovered after the employment of remedial measures.