patient must thus be said to have died from an acute hæmorrhagic septicæmia without evidence of meningitis.

It remains to discuss the evidence as to the nature of the coccus. Few Gram-negative cocci are known to be pathogenic for man; the only ones with which I am acquainted are micrococcus catarrhalis, the gonococcus, and the meningococcus. As regards the first two, I know of no recorded case in which they have been proved to cause an acute hæmorrhagic septicæmia such as is known to occur in certain cases of cerebro-spinal fever. The gonococcus could here also be excluded by the characters of the growth on culture media and micrococcus catarrhalis with almost equal certainty. With the help of Dr. M. H. Gordon I tested the organism as regards its metabolic powers on a series of some 18 carbohydrates, glucosides, and alcohols, adding to the culture media a little sterile raw ascitic fluid. An acid reaction was produced with glucose, levulose, galactose, maltose, and dextrin, while mannose, saccharose, lactose, glycerine, mannite, and the other substances tested remained alkaline. These reactions correspond in every detail with those of the meningococcus isolated from cases of posterior basic meningitis. The coccus further corresponded in every respect with that organism in its form, size, staining reactions, cultural characters, and pathogenic effects upon the guinea-pig. I therefore feel justified in asserting that it was the classical meningococcus—the diplococcus intracellularis meningitidis of Weichselbaum.

I have ventured to give the details of this case at length because I regard it as one of considerable importance. There is a large body of evidence to show that the infecting agent in epidemic cerebro-spinal fever is the meningococcus and it is known that in this disease hæmorrhages are common and that in severe and fulminant cases they may form the striking feature—that, in fact, there are acute septicæmic cases of the disease, fatal before the typical meningeal symptoms have had time to develop. It is equally well known that a common sporadic form of meningitis in children, not necessarily fatal and associated with a special localisation about the posterior fossa of the base of the brain, is to be traced to an organism indistinguishable from the meningococcus. Many have doubted that two diseases, so different in their clinical course and in their distribution, could be due to one and the same organism. Yet here is a case which can be paralleled only by the most fulminant type of epidemic cerebro spinal fever occurring in a purely sporadic manner with no known connexion with any epidemic of the disease, which I have shown, as I trust, to be due to infection by a micro-organism in every respect identical with that of our ordinary posterior basic meningitis. Acute hæmorrhagic purpura may apparently depend upon a number of different infections and I know not how often the meningococcus may be included amongst them. I offer this case, by the courtesy of Dr. West, as one in which the record is fairly complete.

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VOLVULUS OF THE CÆCUM TREATED BY REDUCTION AND APPENDICOSTOMY,

WITH REMARKS UPON THE OPERATION OF APPENDICOSTOMY.¹

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THIS communication is of interest, first, because in it is recorded an example of a rare form of intestinal obstruction; and, secondly, because the line of treatment adopted is novel and gives an opportunity, for the first time in Ireland, of discussing a very simple operation which, in my opinion, has a very useful future.

The patient, a married woman, aged 77 years, with a large family, was admitted to Mercer's Hospital, Dublin, on Jan. 12th last. She was a very brown-skinned, wiry-looking old woman who stated that up to 6.30 P.M. on Jan. 11th she had practically never been ill but that she had

always been subject to obstinate constipation. On that evening, whilst at tea with her family, she was suddenly seized with violent pain in the umbilical region and her abdomen became swollen and hard within a few minutes. On the next morning she was seen by Dr. H. Knapp, who administered an enema without result and advised her to go to hospital. This advice was not acted upon until the evening. When I saw her her temperature was normal, her pulse was 120, and she seemed weak after her journey to hospital but said that her pain was less. Examination of the abdomen revealed fulness below the umbilicus, rather more marked on the right side. The muscles were not very rigid but there was distinct tenderness over the distended area. Vaginal and rectal examination gave no further information. A turpentine enema was ordered but the result was again negative; however, as the pulse-rate was distinctly falling we decided to allow the patient to rest before deciding upon operation. On the next morning she felt rather better and the pulse-rate had fallen to 92. During the day it again rose to 108, so I decided to operate. At no time had there been any vomiting. When the abdomen was opened a tensely distended cæcum and ascending colon were seen filling the lower abdomen and pelvis. These were deflated and withdrawn, when it was found that the cæcum and portion of the ascending colon had made a complete turn from below upwards and from right to left. The lower portion of the ileum having been carried in front of the colon was tightly wound around the neck of the strangulated large intestine. The twist having been reduced it was found that the cæcum and colon had a well-formed mesentery, thus rendering volvulus a possible and likely accident. Having closed the incision which had been made for deflation I determined to fix and to drain the cæcum by performing the operation of appendicostomy. In this instance I had to ligate and to divide a portion of the meso-appendix, but took care to leave sufficient blood-supply to the portion near the cæcum. A stab wound was made at the outer border of the rectus and the appendix was drawn through and fixed by two sutures, its distal end was amputated, and its lumen was dilated with sinus forceps. A gum elastic catheter was then passed through it into the cæcum and fixed in position by an encircling ligature. The after-history of the case was uneventful except for some slight suppuration which occurred in the abdominal wound about eight days after operation, evidently due to infection of the incision when the intestine had been opened for deflation.

The after-history of the appendicostomy is of interest. The catheter was left in position for four days, when the bowels were well cleared out by castor oil. From the first a small quantity of fluid fæces and a large quantity of intestinal gas escaped through the catheter, thus keeping the intestines free from gaseous distension and rendering the patient's convalescence most satisfactory. As soon as the appendicostomy had completed its mission it became necessary, or at least advisable, to close the little opening. Up to the present operators who have performed appendicostomy have considered it necessary to open the abdomen and formally to excise the stump of appendix from the cæcum. It occurred to me that this was an unnecessarily severe sequel to such a trivial operation and that simple excision or invagination of the mucous lining of the stump of appendix should suffice as the muscular tube which would be left would soon cicatrise. I found that it was extremely easy to excise the mucous lining by means of a dissecting forceps and a tenotomy knife, the muscular tube healing soundly within a few days.

On March 20th last I again made use of the appendix in this manner in the treatment of a girl, aged 11 years, from whom I had to remove some four feet of small intestine for acute strangulation by an omental band. The chances of the little patient were practically hopeless from the start, but although the event was fatal yet the appendicostomy opening worked well and prevented abdominal distension.

I have determined to give this operation a very thorough trial as a preventive of distension in emergency intestinal resections or in operations for diffuse or general peritonitis. Up to the present I have sometimes used Paul's glass tube in such, but now I am of opinion that we have found a simpler and equally effective method of preventing ileus. Beyond recording the facts as stated above I have little left to say, as the ground has been taken from under me by Mr. C. R. B. Keetley who has ably dealt with this subject in the *British Medical Journal* of Oct. 7th, 1905, and by Sir William H. Bennett in THE LANCET of Feb. 17th, 1906, p. 419. I may nevertheless mention the indications which these surgeons

¹ A paper read before the Surgical Section of the Royal Academy of Medicine in Ireland on March 23rd, 05.

enumerate and bring this communication to a close with my own appreciation of this attempt to turn the appendix from its evil ways and to make it a useful member of the community of abdominal viscera. Mr. Keetley has collected all the records of this operation, from R. F. Weir's pioneer case down to the date of his communication, and suggests the following as indications: 1. Mucous colitis. 2. Dysentery. 3. Chronic ulceration of the colon. 4. Chronic constipation. In these conditions the opening is used for lavage and medication. 5. To fix and to drain an ileo-cæcal intussusception. 6. To drain and to prevent distension subsequent to operations for intestinal obstruction or when intestinal resection has been performed. In these instances it is used as a prophylactic measure. Sir William Bennett enlarges this list by including the following suggestions: (1) as a method of applying local treatment in complicated enteric fever, as suggested by Dr. W. Ewart; (2) as an improvement upon rectal feeding; and (3) as a substitute for gastrostomy or jejunostomy in very weak and emaciated patients.

I most heartily concur with all these suggestions and have here recorded the further indication of fixation of a volvulus of the cæcum and suggest that it should also receive an exhaustive trial as an aid in the treatment of diffuse or general peritonitis, arising from any cause, when a parietic condition of the intestines is present.

Dublin.

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

THREE CASES ILLUSTRATING OBSTRUCTION OF THE SUBMAXILLARY DUCT.

BY O. EICHHOLZ, M.D. OXON.

I HAVE within the last eight years observed three cases of affection of the submaxillary gland or duct of a mild character and the simplicity of the treatment is the chief feature that warrants publication. They were all different varieties, moreover. I do not know how frequently such cases occur in the practice of other medical men and a perusal of English and foreign text-books throws no light on this point. Two of my cases concerned the salivary duct of Wharton and in the third case this duct was apparently unaffected.

In the first case the symptoms came on suddenly and I am able to give the symptoms with absolute certainty and precision. There was a feeling of irritation in the floor of the mouth on the side affected and a feeling of tension along the line of Wharton's duct supervened with remarkable suddenness. The swelling of the gland was slight. On examination a few minutes afterwards the orifice of the duct was seen to be blocked by a pale yellowish mass about one millimetre in diameter. There was no difficulty in expressing it and on examination it proved to be of the consistency of putty and malodorous. The same symptoms occurred about a year afterwards and the same treatment was adopted. No recurrence has taken place since (eight years ago).

In the second case the patient found a swelling appearing suddenly in the position of the submaxillary gland externally one evening in December, 1904. I saw him on the following evening, the swelling being still present. It was distinctly tender and was said to become larger while eating. On questioning him he admitted feeling some discomfort under the tongue, as if there were a hair irritating the mouth. There was no difficulty in seeing that a hair was protruding from the papilla of Wharton's duct and it was readily extracted by the fingers, with the aid of a pocket handkerchief to obtain a firmer hold. The hair was about three-quarters of an inch long and the portion embedded in the duct was seen to be encrusted with hard mineral matter. In this case, there was therefore a salivary calculus which had formed round a hair of the moustache which had penetrated

the orifice of Wharton's duct and passed along it to the extent of about half an inch. I advised the patient to avoid biting his moustache and no further recurrence has taken place up to the present.

In my third case the only symptom was swelling and some tenderness of the submaxillary gland in a boy, aged 14 years. The sudden appearance of the swelling pointed to some blocking of the duct of the gland but examination of the floor of the mouth did not reveal its nature and I therefore came to the conclusion that the obstruction was situated in the substance of the gland. The treatment adopted was to paint the skin with glycerine of belladonna and apply a fomentation. The swelling and discomfort disappeared by adopting these measures as quickly as they had appeared, the whole episode occupying under three days, and no recurrence has taken place. It is nearly two years since the above occurred.

There must be some doubt as to the precise cause of the swelling in this case as no plug or calculus appeared. It is possible that the obstruction may have been extruded spontaneously; according to Bergmann¹ a stone may suddenly make its appearance in the mouth, as during a meal, without having manifested its presence before, but such an event is said to be exceptional, whereas according to Da Costa² small concretions are often passed. It is of course possible that the blockage was the result of inflammation. The diagnosis of such cases as I have here recorded ought to present no difficulty. The sudden swelling of the salivary gland with the possible occurrence of a stone, foreign body, or plug of inspissated mucus or caseous-looking material in the duct are quite characteristic, while the almost immediate subsidence of the tumour when the obstruction is removed (as in my two earlier cases) allays the not inconsiderable alarm which these trivial affections cause the patient to feel.

Russell-road, W.

A CASE OF COMPLETE "SPONTANEOUS INVERSION" OF THE UTERUS.

BY G. S. MCKAY, M.B. ABERD.

ON Jan. 29th, 1906, I was called to a primipara the first two stages of whose labour were normal, but about 15 minutes after the birth of the child the patient with a strain expelled the placenta adhering to what appeared at first sight to be a tumour. A sulcus demarcated the point of attachment of the placenta to this mass. No fundus uteri could be felt in the abdomen but the hollow in its place was quite palpable. Having the following data—namely, (1) a distinct hollow in the abdomen in the place of the fundus uteri; and (2) a mass outside the vagina—I came to the conclusion that the case must be one of inverted uterus. The hæmorrhage being now very profuse I seized the neck of the inverted uterus, which lay outside the vagina, and by gentle pressure between the thumb and forefinger of the left hand the bleeding was controlled until I detached the adherent placenta with the right hand. The uterus was reinverted by pressure and counter-pressure between the two hands and slipped into its proper position not unlike the reinversion of a collapsed india-rubber ball. As the interior of the uterus might have undergone septic contamination from extraneous sources I washed it out with antiseptic lotion. The uterus soon contracted to the size of a cricket ball, firm and hard. The patient complained of little beyond a peculiar faintness until two hours after the reinversion, when she became very pallid and lost consciousness. She remained unconscious for a short time and had two such attacks during the day. After careful watching and guarding of the uterus, injections of salt solution, hypodermic injections of strychnine and ergot, and general treatment for hæmorrhage, the pulse, which was at first rapid and thready, gradually improved. During the next nine days the patient's temperature never exceeded 99.2° F. She made a good but slow recovery and is now quite well. She does not complain of any dragging abdominal pain and feels quite comfortable.

Wetherby.

¹ System of Practical Surgery.

² Modern Surgery.