the pressure and turbidity were less; 10 c.cm. of antistreptococcal serum were injected subcutaneously.

On April 3rd the improvement was very distinct. There was no headache and the mental condition was normal. Kernig's sign was not obtained. Lumbar puncture gave only slightly turbid fluid under normal pressure. Next day 6 c.cm. of clear fluid were obtained by puncture, and the patient was quite clear from symptoms. Except for a serum rash on April 10th recovery from this point was uneventful.

Remembering the rarity of primary streptococcal meningitis, it may be questioned whether in this case the meningitis was not secondary to an ear infection. There was evidence of ear disturbance following mild tonsillitis, and although a streptococcus was not recovered from the throat, we are of opinion that the meningitis was definitely related to the primary naso-pharyngeal condition. At no time previous to the meningitis or during the illness was there any aural discharge.

Numerous instances have been recorded of recovery following operation for meningitis developing during the course of middle-ear suppuration. Such cases have been reported by Holger Mygind¹ of Copenhagen amongst a series of 210 cases of otogenic meningitis, and also by G. J. Jenkins,² J. F. O'Malley,² and E. Watson-Williams.² In many of these cases the cerebro-spinal fluid was turbid to the naked eye, and organisms were seen in the direct smears of the fluid obtained by lumbar puncture. Apparently in only a very small minority of the patients who survived were organisms recovered by cultivation, and in no case was a streptococcus obtained. In all the cases the meningitis followed ear disease, and with the exception of one of Mygind's all the cases were operated upon and basal drainage brought about.

The unusualness of our case lies in the recovery without operation after a streptococcus had been obtained by culture from a markedly turbid fluid. We have found records of only two cases parallel with ours—one of the series reported by Mygind which was not operated upon (no organism was, however, recovered by culture), and a case reported by Archer³ from which a haemolytic streptococcus was recovered by culture.

We are of opinion that the serum administered by intrathecal injection was definitely related to the improvement which took place within twenty-four hours, and that the horse serum itself produced some effect of the nature of foreign protein shock which resulted in the stimulation of the child's antibacterial powers.

It is hoped that the happy result in this case may stimulate others to treat energetically cases of meningitis, usually considered hopeless, by frequent lumbar puncture and early intrathecal injection of serum. In the absence of a complete bacteriological report it would seem worth while to make use of an antimeningococcal serum.

We wish to acknowledge the help afforded by Dr. Sinclair Miller, who carried out the bacteriological examinations.

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OBSTINATE CONSTIPATION TREATED BY CRUSHING THE LOWER END OF THE COLON AND UPPER END OF THE RECTUM.

BY

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THE subject of the operation here described was brought to me by Dr. James C. Watt, of the West African Medical Service, who supplied the history and urged the operative treatment which was carried out by me.

The patient, a man aged 36, was robust as a boy, but during adolescence he developed chronic dyspepsia with constipation. The tongue was generally coated, and he began to suffer from morning drowsiness and faintness on rising. When about 25 years

old the constipation became severe, so that cathartics had to be used regularly, and the man became an invalid.

Right-sided abdominal pain and discomfort now became constant, and the pain in the hypochondriac region was so severe that cholelithiasis was diagnosed and the abdomen opened in 1922. No local lesion was found, but some peritoneal bands passed down to the ascending and transverse colon, matting these slightly, but not sufficiently so to cause noticeable obstruction. The appendix was removed at this time.

The patient was now hardly capable even of the lightest work; he was often melancholic, and "at the end of his tether." He was placed by Dr. Watt on a low protein diet and advised to use a bowel douche daily. There was immediate relief from all symptoms, the patient feeling happy and comfortable in body for the first time for years, but he could not regain a healthy degree of strength and still had attacks of obstinate constipation.

X-ray photographs taken in February, 1924, showed general atonicity and ptosis of the colon, characteristic of the asthenic type of chronic intestinal stasis. Shortly after this I was asked by Dr. Watt to see the case and consider the advisability of performing an operation to destroy sphincter action and kinking at the upper end of the rectum.

The patient was prepared for operation by Dr. Watt, who lays stress upon the thorough clearing out of the system by practical starvation, with copious water drinking and daily enema, until the tongue is clean and the abdomen concave; then low protein diet for a couple of days, and practical starvation for twenty-four hours before operation. Sips of water are allowed immediately after the operation; morphine is given as required; and a low protein diet gradually re-established, beginning about forty-eight hours after operation.

Operation.

The operation is simple and presents little difficulty in performance apart from the rather restricted space in the lower pelvis. With the patient in the Trendelenburg position, a vertical median incision was made in the lower abdomen, extending above the umbilicus. The bladder was turned forward, and the pelvic basin and pelvic colon exposed. A point on the pelvic colon, about four inches above the attachments of the peritoneal ligaments of the rectum, at which the kinking was marked, was chosen. A small incision was made at the apex of this kink into the interior of the bowel, and through this incision the blades of a large and powerful crushing forceps were introduced, one blade going into each limb of the V. One blade therefore descended, as it was introduced, toward the rectum, while the other ascended the pelvic colon. The blades were introduced to their full extent so that the blade which descended toward the rectum reached the insertion of the peritoneal ligaments. As the clamp was now closed, the two limbs of the V were approximated, so that four inches of the end of the pelvic colon and the beginning of the rectum lay parallel to four inches of pelvic colon immediately higher up.

Care was taken at this stage to keep the mesenteric attachment of the bowel well away from the proposed line of crushing. The mesentery of both limbs was kept below, or posterior to, the position of the blades of the crushing forceps, and once this position had been assured the full crushing power of the forceps was applied.

The clamp was kept on for several minutes, and during this period a stitch was run along the junction of the two pieces of bowel above, or anterior to, the blades of the crushing forceps, so as to minimize the danger of separation of the pieces of bowel on removal of the clamp. The clamp was then slipped out carefully, and the preliminary incision made at the apex of the V was sutured. The abdominal wound was then stitched up.

The idea of the operation is that, once the two pieces of bowel wall which have been severely crushed have sloughed, a wide opening will be established between the upper end of the rectum and the pelvic colon, redundant pelvic colon and consequent kinking will be largely done away with, and in addition a sphincter action of the upper end of the rectum and kinking about the junction of the pelvic colon and upper rectum will be rendered impossible.

Certainly the results of the operation were remarkably good. The patient soon began to lose his melancholic symptoms; the tongue kept clean; and the bowels began to move naturally, once or twice daily, with the aid of a little virolax. He has recently been able to leave for New Zealand, feeling fit and able for his work. A letter received from him at the time of writing this states, "I am keeping very fit and have a bowel movement twice a day."

Outline diagram of pelvis P, with bladder B drawn forward, showing crushing clamp CC inserted into interior of bowel through opening at apex of kink. One blade descends to rectum R (wavy line above R indicates line of peritoneal reflection); the other blade passes along pelvic colon PC. XXX indicates line of suture.