

if the general practice of severe or complete purgation before operation were discontinued, there would be fewer gas pain instances following laparotomy. An enema or two before operation answers to sufficient purpose and in a large surgical service renders less post-operative trouble. Even then, however, one encounters instances of post-operative ileus.

The presence of peritonitis or intestinal obstruction after a laparotomy being eliminated in ileus, resort has had to be to frequent gastric lavages and cessation of food. We have recently tried transduodenal lavage instead of the usual stomach tube washings of the stomach with the idea in view to influence favorably the main situation of the adynamia, namely, the small intestine. The first case was one that was going into extremes rapidly after days of stomach lavages. Within an hour after the solution was run into the small intestine a complete flushing of the bowel had occurred and within a few hours the patient was entirely over the condition. Since then five additional cases have been handled in this way, all instances of marked ileus tending to fatal issue and in which gastric lavages had been employed for days. They were all changes in picture, the result in time and completeness being most striking. Now, if this can be accomplished in marked ileus, the same can still easier be brought about in the less severe cases. If I leave no message with you but the use of transduodenal lavage in post-operative ileus, I feel that my paper has not been in vain. Its employment is of distinct advantage in these distressing cases and nothing in the post-operative handling of cases will bring more happiness to you. It is well here that the solution is warmer than usually employed, from 110 to 120° F.

In all of the cases mentioned the original solution Jutte advised was employed, namely, 9 grams each of sodium sulphate and sodium chlorid, 4 c. c. of a 10% alcoholic solution of phenolphthalein, and a teaspoonful of soda bicarbonate dissolved in a liter of water.

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TYPHOID MENINGITIS*

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With the closer study and observation of typhoid patients as carried on at present, the recognition of cerebro-spinal and meningeal manifestations is becoming more usual. In several cases of typhoid meningitis reported in the literature, necropsy showed that the meningitis was the only evidence of typhoid infection, lending strength to the belief expressed by Lavensen that the portal of entry may be the nasal passage or some place other than the gastro-intestinal tract. Studies along this line are, however, as yet too inconclusive to forego altogether the older conception that the gastro-intestinal tract is the only way by which the typhoid bacillus gains entrance to the human body.

In 1904, Cole made an exhaustive report of all cases of meningeal complications in typhoid fever, and since then it has been generally accepted that the meningeal symptoms of typhoid fever may be classified in three distinct groups named by him:

I. Meningism, when the usual symptoms of meningitis are present with no demonstrable meningeal lesions, and with a normal spinal fluid.

II. Serous meningitis, when the symptoms of meningitis are associated with non-suppurative lesions in the meninges and a spinal fluid containing the bacillus typhosus, and under slightly increased pressure.

III. Purulent meningitis, when the meningitis is purulent. In this case the spinal fluid is purulent and contains the bacillus typhosus.

Meningism is such a frequent occurrence in nearly any infection that no records of this condition alone are made in the literature. Bayne-Jones made note of the fact that all the reports of this condition since 1904 do not equal the number of examples of so-called meningism seen

*Prepared for Section on Medicine, Southern Medical Association, Twelfth Annual Meeting, Asheville, N. C., Nov. 11-14, 1918, postponed one year on account of influenza epidemic.

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in the Johns Hopkins Hospital during the usual summer's experience with typhoid fever. The absence of reports of this feature and the frequency with which it occurs should not minimize its importance as a clinical symptom. Netter pointed out that the mortality in cases showing Kernig's sign is three times as great as in those which do not exhibit it. The appearance of the meningeal symptoms may possibly represent an early stage of a more dangerous process, and when they appear efforts should be made to determine the degree of the disease of the central nervous system, and also to relieve the symptoms. Spinal puncture is the only means of obtaining certain information in regard to the meningeal condition, and besides serving as a diagnostic procedure, its therapeutic effect greatly improves the patient. Numerous cases of serous meningitis have been noted since Cole made his report in 1904. In the article by Bayne-Jones, seventeen cases occurring since the above report was made were tabulated and a reference to this table shows that in all the spinal fluid was increased in pressure, was clear or slightly hazy, due to a cellular increase of the mononuclear elements and that in the majority of the cases typhoid bacilli were isolated from the fluid.

Dr. M. L. Graves reported four cases of serous meningitis due to typhoid bacilli, occurring in his service at the John Sealy Hospital in 1916. These were, as far as I am able to ascertain, the only cases occurring in this Clinic among approximately 400 cases of typhoid between the years of 1905 and 1916. This apparent lack of meningitis prior to 1916 is probably due to the fact that no cultures of the spinal fluid were made in these cases prior to this time. Frequently cases of serous meningitis recover, as was noted in those cases reported by Dr. Graves. From a prognostic standpoint, however, the onset of serous meningitis during the course of typhoid fever is extremely important. Claret and Lyon-Caen have shown that of 13 cases of serous meningitis with typhoid bacillosis of the spinal fluid, eight recovered while five died, giving a mortality of 40% of cases of typhoid fever complicated by this condition.

The pyogenic properties of the bacillus typhosus are now well established and every case of typhoid fever exhibiting meningeal manifestations may be considered as a potential case of purulent meningitis until otherwise proved. Referring again to the article by Bayne-Jones, we find a summary of 18 cases of purulent typhoid meningitis. These cases reported since Cole published his review of 15 cases, in 1904, make 33 cases noted to date. The data furnished by these indicate that a purulent meningitis may occur any time during the course of a typhoid infection, either during the first few days or late during the convalescence. An outstanding feature of all the cases reported is the invariable fatal outcome of a generalized typhoid meningitis, and that in most instances within three days of the onset of the meningeal symptoms.

The general symptoms in these cases are those of any acute general meningitis exhibiting the usual nervous phenomena of these conditions. The spinal fluid is under increased pressure, usually is turbid and has a yellowish tinge. Cellular increase is marked with the polynuclears usually predominating, although occasionally the mononuclears may be in the majority. Typhoid bacilli are frequently demonstrable in an ordinary spread of the fluid, but must always be obtained by cultures before a positive diagnosis can be returned. The leucocytes of the blood rarely show any marked increase, but the association of such complications as a bronchitis may cause a marked polynucleosis.

The following report of a case of purulent typhoid meningitis occurring in this Clinic is especially noteworthy, because so far as I am able to ascertain it is the first case so diagnosed which has made a recovery.

CASE REPORT

D. L. L., male, white, age 37, a laborer, entered the John Sealy Hospital February 27, 1917, complaining of having been sick for the previous two weeks with pain in the abdomen, and with nausea associated with vomiting. Physical examination on entrance showed a slightly emaciated semi-comatose male, abdomen distended, rose spots present, sub-sultus tendinum present, temperature 103.6 F., pulse 120, respiration 24. Widal reaction was positive. Blood culture was negative. No change was noted in the patient's condition until March 7, when a

bilateral Kernig's sign was elicited, some nuchal rigidity was present, and the stupor, sub-sultus and carphology were more marked. Temperature 102.1° F., pulse 120, respiration 28. With these fairly definite signs of meningeal irritation present, a spinal puncture was done, and 11 c. c. of blood-tinged fluid were withdrawn. The blood came from the meningeal veins traumatized by the puncture. A few leucocytes were present in the fluid, but no more than would be expected from a similar dilution of blood. A culture for typhoid bacilli was negative and sterile. The meningeal symptoms continuing, another puncture was made on March 9, one ounce of turbid fluid (due to blood) being removed. The spinal canal was then irrigated with sterile normal salt solution. Cultures of the spinal fluid were again sterile. Following this treatment the patient became somewhat quieter and the temperature assumed a lower level. On March 12 a third irrigation was done, one-half an ounce of uniformly blood-tinged fluid being removed, which on culture was sterile. Kernig's sign and the nuchal rigidity were still present though the general condition of the patient showed some improvement. The temperature before this irrigation was 97.6° F.; immediately afterward it was 104.4°; but the following morning was 99° F.

From this time on the patient appeared to be progressing favorably. On March 22, a small abscess at the base of the scrotum was opened and about 2 c. c. of greenish pus evacuated. No cultures were made of this pus. After pursuing practically a normal temperature for six days, a relapse occurred on March 29.

On April 8, tenderness and pain in the right iliac fossa suggested the possibility of perforation. April 9, thrombosis of the left popliteal vein was noted. Pain in the iliac region was not present any longer. Sub-sultus tendinum and Kernig's sign were again present. An uneventful course followed until April 26. On April 24, it was noted on the chart that for the previous 48 hours the temperature had not risen above 100° F., and the general condition of the patient showed marked improvement. On the night of April 25 the temperature suddenly shot up to 106° F., the pulse from 102 to 120, and the respiration to 24. The patient became delirious,—almost maniacal. Kernig's sign was present and there was marked nuchal rigidity. On the morning of April 26 a spinal puncture was made and the spinal canal drained. Following this, irrigations with sterile normal saline were performed, the return water being very turbid, due to large numbers of polynuclears. A spread of the sediment stained by Gram's method revealed large numbers of Gram-negative bacilli. Typhoid bacilli in pure culture were grown from this fluid.

Following this puncture and irrigation the patient became much quieter and more rational, the temperature assuming a normal level on the 29th and continuing so until the patient left the

Hospital on May 15. A letter received from the patient recently says that he has continued in good health except for the pain in his left leg resulting from the venous thrombosis.

In the above report it is noted that during the course of the fever there occurred several onsets of meningeal symptoms accompanied by a spinal fluid under increased pressure, which was sterile on culture; these attacks corresponding to the condition known as meningism. The sudden acute general meningeal symptoms with the associated nervous phenomena to be expected in a purulent meningitis were exhibited by the case reported during the apparent convalescence, from a relapse of the usual type, and occurred on the seventy-second day of the illness. The spinal fluid also revealed the classical findings, many pus cells and an abundance of typhoid bacilli being easily demonstrable in a smear preparation. Cultures of the spinal fluid in dextrose bouillon produced no gas, and on Russell's double sugar media produced only a slight change in the butt of the tube, and no change on the slant. An eighteen-hour growth in plain bouillon was agglutinated completely in half an hour by a known positive serum in a dilution of 1 to 50. These tests we thought sufficient to justify a report of typhoid bacilli.

The treatment instituted in this case, i. e., irrigation of the spinal canal with sterile normal salt solution, was first used by Steinback in treating delirium tremens, and from a practical standpoint seems well recommended for such cases.

The data presented, I believe, fully justifies our statement made above, that this was a case of purulent typhoid meningitis, which, unlike all previous reported cases, recovered. Since the preparation of this paper Bell has reported a case of "Typhoid Septicemia with Purulent Meningitis Due to the Typhoid Bacilli." A necropsy of his case revealed an entire absence of any of the lesions usually associated with a typhoid infection.

The treatment and observation of this case was carried out by Dr. W. B. Reading, now in France, and occurred in the service of Dr. M. L. Graves, to both of

whom I wish to express my thanks for permission to report these interesting findings.

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THE MEDICAL TREATMENT OF GALL-BLADDER AFFECTIONS*

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Among the therapeutic problems frequently perplexing us, few are more trying than certain pathologic conditions affecting the gall-bladder and ducts and their proper management.

Some surgeons there are who seem to consider practically all disturbances in this location as confined to their domain; who offer no succor, who hold out no encouragement, except through operative procedures, and who apparently make no serious effort apart from radical measures toward the alleviation of these ills.

A year ago in the Section on Surgery of this Association statistics were presented by Dr. Darrington, showing that in cholecystotomy 50% were cured, 40% improved and 10% not improved; while in cholecystectomy 70% were cured, 20% improved, and 10% not improved. These statistics were not challenged at that time. You will admit that the term "improved" is rather indefinite, and some of these "improved patients" are really far from well. We must also take into consideration those sufferers who are not eligible for surgical relief—those with cardio-renal insufficiency, those with intercurrent affections, rendering them poor surgical risks; those who, for various reasons, will not consent to the use of the knife. These individuals surely have a claim on our attention.

*Prepared for Section on Medicine, Southern Medical Association, Twelfth Annual Meeting, Asheville, N. C., Nov. 11-14, 1918, postponed one year on account of influenza epidemic.

Far be it that I should enter the lists from an academic point of view as a champion of either surgical or non-surgical management of cases involving "gall-bladder pathology." Neither shall I make any extravagant claims for the suggestions herein offered. I do contend, however, that those unfortunates who have not been cured by surgery, or who can not invoke its aid, should not be thrown into the therapeutic discard, nor should the door of hope be shut upon their opportunities.

Briefly, therefore, I shall mention the means which have seemingly yielded a measure of relief in such states, some being original, some not.

Omitting any discussion of pathology, the symptoms of cholangitis and cholecystitis are much alike, for in most cases of cholecystitis the bile ducts are simultaneously affected. If the acute inflammation is at all extensive, it will cause distress in the region of the gall-bladder, enlargement of this viscus and puffiness of the liver. The patient's discomfort will vary with the amount of the inflammation and biliary stasis. There may even be intense pains simulating those of gall-stone colic. Should decided jaundice make its appearance, that is proof positive of some obstruction in the ducts. There is then presented the clinical picture of anorexia, nausea, sometimes vomiting, frequent eructations, irregular stools, and perhaps some fever. In addition, there may be a slow pulse, an itching skin, and a general sense of ill-being.

Should the infection of the gall-bladder or ducts develop slowly, possibly originating from some ancient exciting cause, the symptoms may be less definite, but none the less disquieting. I see many who complain of digestive manifestations, whose complexions, though sallow, are not yellow, and give no specific history that would point to the gall-bladder or ducts.

Then there are those post-operative cases who have developed adhesions in the upper right quadrant of the abdomen, with consequent mechanical impediments to the normal functioning of the biliary machinery. These are among the most bitter complainers, though many of them look fairly well.