with caution. A central incision through the median *raphe* above the navel was made, the peritoneum punctured, when there issued through, first a gush of gas, then fluid blood and clots, with semi-digested food and fecal matter. There had not been very much blood lost. The transverse colon was torn off from the gastrocolic omentum, the bowel laid open on its anterior border. Drawing the stomach out through the incision, a rent completely through its posterior wall near the cardia was found. Liver was not injured; blood oozed up behind the hepatic flexure of the colon. Exploring deeply, came on a rent in the capsule of the right kidney; this was sutured and bleeding arrested. Wound in colon closed easily and quickly, the one in the posterior wall of stomach reached and sutured with great difficulty. The small intestine was then completely turned out, when it and all the viscera were scrutinized. Peritoneal cavity was well washed and dried. Abdominal incision closed. Returned to bed in great collapse. Reacted well. At midnight had report that his condition was excellent. Called at 6 A. M. at hospital myself, to find that he suddenly sank at 3 A. M.

Autopsy at 5 P. M. same day. Rents sutured had closed completely, there had been no consecutive hemorrhage. Such had been the melancholy end of a case wherein recovery had been hoped for.

CASE II. Patient, a young man twenty-seven years old, was working a large circular saw, when he was struck sideways by a large splinter of plank. His left forearm, which was flexed at the time he was struck, was fractured through both bones. Timber glanced and hit him in the hypogastrium, knocking him down. Saw him three hours after the accident. In deep shock and great agony. Was prepared for laparotomy. On opening the abdomen there issued forth an enormous gush of bright red blood. There was found a deep laceration in the left lobe of liver with evident rupture of the celiac axis. Notwithstanding large intravenous injections of saline were given mortal symptoms so rapidly culminated that we had to discontinue intra-abdominal manipulations and close the incision, but before it was completed the patient was dead. An autopsy was not permitted.

This was a case in which there was no evidence of perforation of any of the hollow organs, one in which it seemed to me that full stimulation and free opiates might have afforded the patient a chance.

My experience has been that the value of intravenous injections has been much overestimated. They certainly, alone, are not to be trusted in acute traumatic anemia. I am inclined to believe that by rapidly diluting the blood, impairing its hemostatic properties, and by distending the arterial system, this excess of aqueous material very much interfere with nature's provision against death from hemorrhage.

CASE III. A boy of twelve years fell from a cherry tree, striking his abdomen on the rail of a fence. Was brought into the hospital in great distress. Had free vomiting, tympanitic abdomen, absence of hepatic dulness. Nine hours after entrance, *sectio abdominalis*. Large escape of gas and blood intermixed with chylous elements. A rent in the anterior wall of the stomach and through the jejunum in upper fifth were found. There was free bleeding from the mesenteric vessels, which were ligated and rents quickly closed, but before peritoneal toilet was completed, patient succumbed. Autopsy denied.

Might this last case not have survived by symptomatic treatment alone? With the rents in the alimentary canal and chylous leakage, it might seem preposterous to make such an inquiry, but facts are hard things to get over. The peritoneum, we know, possesses remarkable digestive and absorbent properties. An intestine heals with astonishing rapidity, and the jejunum being generally empty there is little chylous material to escape.

My sad experience with these three cases, coming rapidly after each other in one year, chilled my enthusiasm for early operation in this class. Unless we are assured beyond all doubt that a large rent or rupture of a hollow organ is involved, immediate section for violent contusions of the abdomen should be discouraged, and under any circumstances before reaction is established it is a desperate resource of very questionable expediency.

Clinical Department.

A CASE OF MULTIPLE CEREBRAL HEMORRHAGES FROM CHRONIC LEAD POISONING, WITH NECROPSY.¹

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Physician to the Home for Incurables, Dorchester.

THE reason for the vague title first given to this communication lies in the fact that when Dr. Ogden spoke to me about it, a week or more ago, the brain which I have to show had not yet been sectioned.

The clinical history of the case is as follows: The patient, a married man of forty-one and a painter by occupation, presented himself for treatment at the Nervous Out-Patient Department of the City Hospital on the 18th of September last, complaining of constant headache, dizziness, muscular tremor, and, at times, nausea. The headache was vertical and occipital, and extended down the back of the neck, especially on the right. There was some complaint of deafness for the past year. The patient was said to be excitable and irritable and to be suffering from some impairment of memory. His family history was negative from a nervous and mental standpoint. As to his personal history, he said that he had always been well except for two attacks of colic, the first of which occurred six years ago and lasted for about five weeks; the second was in June, 1899, and was slight in character, but accompanied by dizziness, nausea and vomiting. Consciousness was lost on one occasion during this attack, and altogether the patient was confined to his bed for about ten days. From this time he claimed to have never fully recovered, and he had done no work for over a year on account of general weakness. Venereal disease was strongly denied, as well as excess in alcohol and tobacco.

The physical examination made September 18th reads: "Slight tenderness of right occipital region and superior curved line, down the neck and right posterior lateral region. No tenderness over mastoid. Station good. Pupils react to light and accommodation; external ocular muscles normal. Tongue protruded slightly to right; blue line on gums. Heart

¹ Read before the Clinical Section of the Suffolk District Medical Society, November 15, 1899.

negative, except that second sound is accentuated over whole cardiac area. There is a moderate tremor of hands, which is increased during excitement. Knee-jerks good; no clonus. No tenderness about legs."

The urine showed specific gravity 1.012; albumin one-tenth per cent.; no sugar.

A diagnosis of lead poisoning was made, the patient given KI, 10 grains, three times daily, and referred to the Ear Department for examination.

A note by Dr. J. J. Thomas a week later reads: "Temperature 99°; headache pretty constant; no epistaxis; bowels regular."

Dr. E. M. Holmes, of the Ear Department, reported: "The cerumen in this man's ears could cause his vertigo and tinnitus. There is a chronic dry middle-ear inflammation and some tension on membrane. This can be relieved."

A further note by Dr. Thomas, under same date as above, says: "Abdomen negative, no rose spots; spleen not palpable."

The iodide was continued and sodium phosphate in 10-grain doses was given to aid elimination from the bowels. A specimen of urine was sent to Dr. Ogden for lead examination.

I first saw the patient on October 2d. His main complaint then was of excruciating pain in the head, with occasional nausea and vomiting. The pain was located by him chiefly in the left side of the head and the vertex, and somewhat in the left frontal region. He had also noticed that his vision was failing. There was marked pallor of the face and mucous membranes, but except for the tremor, which was flexor-extensor in the hands and involved also the face, physical exploration was negative.

On account of the exceptionally intense character of the headache, associated as it was with nausea and more or less vomiting, I was impelled to believe that lead was not the only factor present in the case, and entertained the possibility of cerebral neoplasm. With this idea in mind I referred the man to the oculist, for examination of his eye grounds, and on October 11th received the following report: "This patient is hypermetropic and is wearing suitable glasses. The media and fundi are clear, but the right optic disc is moderately hazy, the left much less so. While the condition may be normal for him, I think it would be well to see if it changes any."

October 23d, Dr. Ogden reports: "Trace of lead in 500 cubic centimetres of urine."

The patient says that he has been in bed for a week past on account of the pain in his head. This pain has been so intense as to make him shriek and groan, and for three nights in succession gave him no sleep at all. While talking to me he complained of pain in the vertex, as if some one were pulling his hair out by the roots, and said that slight shaking of the head or movement of the jaws was sufficient to start the pain. He had had no diplopia.

A second examination of the eyes was made on this day by Dr. G. H. Thomas, and the following noted: "The outline of the right disc is slightly more hazy and that of the left decidedly more hazy than at last examination. To my mind there is a distinct swelling of both discs."

In my subsequent handling of the case I was led by the following considerations: Here was a man who had not been exposed to lead for about a year; who had had no colic for many months; and who presented

none of the peripheral nerve lesions common to lead poisoning. Furthermore, examination of his urine for lead had shown only a slight trace in 500 cubic centimetres. For these reasons, and from the fact of the great rarity of cephalic manifestations of lead in this community, I was inclined to view lead merely as a contributing element, and favored the idea of cerebral neoplasm. This idea was strengthened, as I have hinted, by the persistent and constantly increasing headache, by the nausea and the beginning papillitis in both eyes. The tremor I considered might be consistent with either lead or tumor. As to the nature and seat of the new growth, I naturally did not attempt to form a positive idea from the data at hand, but with the intention of excluding gumma, I applied the therapeutic test of mercury. This soon produced a stomatitis and was stopped.

On the 30th of October, twenty-eight days after I saw the patient for the first time, and about a month and a half after his first advent to the hospital, he reported that his headache was still constant but not so severe. He went home, passed a fairly good night and in the morning his wife went off as usual to her work, leaving him comfortably fixed in bed. At noon one of the neighbors came in to get him something to eat and found him dead.

Through the family physician, Dr. R. J. McCormack, of Roxbury, I was enabled to obtain a necropsy, and this was kindly done for me by Dr. Joseph Pratt, of the Pathological Department of the City Hospital, some four or five hours after death. The head only was opened. The calvarium was normal, but the dura was much injected and seemed to adhere over the left frontal region. There was much serous dripping from the brain and the convolutions generally showed abnormal flattening. Palpation of the brain was practised but yielded no results, so it was decided to harden it *in toto* in formalin without further examination.

Two days ago, Dr. Pratt made anteroposterior vertical sections of the brain for me, with the results I am about to show. As we proceed from front to back in this series of sections we find, first, in the right hemisphere, what is evidently a recent small hemorrhage occupying the gray matter of the upper portion of the ascending parietal gyrus, and another, and smaller, in the first temporal gyrus. From this point until we reach the left crus cerebri nothing abnormal presents itself, but here you can see the beginning (or rather ending) of a hemorrhage which may be traced backward along its long axis longitudinally into the centre of the ventral part of the pons. This hemorrhage measures one and seven-tenths centimetres in length and is four-tenths centimetres in its average width. Near the periphery of the pons, also on the left side, you notice a second, though very minute, hemorrhage. The tissues surrounding both hemorrhages are blood-stained.

From the general convolitional flattening which was noticeable when the brain was in a fresh state, and from the findings just pointed out, we are naturally constrained to look upon lead as the sole causative factor in the case; its *modus operandi* having been to produce blood dyscrasia and renal irritation — the latter as evidenced by the albuminuria — and then the arterial breakdown which caused the fatal issue. Optic neuritis, as you all know, sometimes occurs during the course of chronic lead intoxication. As to the

headaches, I can only say that they were the severest I ever encountered unassociated with cerebral neoplasm. The absence, clinically, of those psychical manifestations which are grouped under the title of "encephalopathia saturnina" is interesting in view of the diffuse arterial disease which the widely-separated hemorrhages would lead us to suppose was present in the case.

In conclusion, I must say that the case, taken as a whole, seems to me a rather unusual and instructive one.

Medical Progress.

RECENT PROGRESS IN OBSTETRICS.

BY FRANK A. HIGGINS, M.D., BOSTON.

MATERNAL IMPRESSIONS.

LEWIS,¹ in a review of the subject of maternal impressions, says that if maternal impressions explain human anomalies, they should also explain such occurrences among the lower animals and even among plants. Monstrosities are perhaps more common among domestic animals and fowls than among men. The strongest blow is dealt to the theory of maternal impressions by the results of experiments in the production of monsters artificially. Innumerable experiments have been performed upon the eggs of bird, fish, insect and echinoderm which have resulted in the production of almost all the typical varieties of monsters, especially of single monsters. Different varieties can even be produced at the will of the experimenters by different ways of managing the eggs. Monstrosities can be artificially produced in the embryos of birds exactly like those which, occurring in human fetuses, are ascribed to mental shock or nervous impression of the mother. It has often been observed that fish eggs hatched in running water produce a far greater number of double embryos than do those hatched in still pools. The shaking caused by railroad or wagon journeys to the hatchery also results in a greater profusion of double monsters. In human fetuses, even at full term, there are sometimes found remains of amniotic bands and adhesions which, obviously, by interfering with development of different parts at an early period of gestation, were the causes of various malformations. In short, all malformations and monstrosities can be explained by purely physical and mechanical causes, entirely remote from psychic influence, so that there is never any reason to invoke the mysterious or the supernatural to explain natural phenomena.

ANTISTREPTOCOCCIC SERUM IN PUERPERAL INFECTION.²

In 1898 the American Gynecological Society appointed a committee to report on the value of antistreptococcic serum in the treatment of puerperal infection. The committee reported at the 1899 meeting and their conclusions are quoted, and are interesting in that they help to strengthen what already was generally believed to be good judgment:

(1) A study of the literature shows that 352 cases of puerperal infection have been treated by many observers, with a mortality of 20.74 per cent.; where

streptococci were positively demonstrated, the mortality was 33 per cent.

(2) Marmorek's claim that his antistreptococcic serum will cure streptococcic puerperal infection does not appear to be substantiated by the results thus far reported.

(3) Experimental work has cast grave doubts upon the efficiency of antistreptococcic serum in clinical work, by showing that a serum which is obtained from a given streptococcus may protect an animal from that organism, but may be absolutely inefficient against another streptococcus, and that the number of serums which may be prepared is limited only by the number of varieties of streptococci which may exist.

(4) Thus far the only definite result of Marmorek's work is the development of a method by which we can increase the virulence of certain streptococci to an almost inconceivable extent, so that one hundred-billionth of a cubic centimetre of a culture will kill a rabbit.

(5) The personal experience of your committee has shown that the mortality of streptococcus endometritis, if not interfered with, is something less than five per cent. and that such cases tend to recover if nature's work is not undone by too energetic local treatment.

(6) We unhesitatingly condemn curettage and total hysterectomy in streptococcus infections after full-term delivery, and attribute a large part of the excessive mortality in the literature to the former operation.

(7) In puerperal infections a portion of the uterine lochia should be removed by Döderlein's tube for bacteriological examination and an intra-uterine douche of four to five litres of sterile salt solution given just afterwards. If the infection be due to streptococci, the uterus should not be touched again, and the patient be given very large doses of strychnia and alcohol if necessary. If the infection be due to other organisms, repeated douchings and even curettage may be advisable.

(8) The experience of one of the members of the committee with antistreptococcus serum has shown that it has no deleterious effect upon the patient, and, therefore, may be tried if desired. But we find nothing in the clinical or experimental literature or in our own experience to indicate that its employment will materially improve the general results in the treatment of streptococcus puerperal infection.

FAT AND FECUNDITY.

Reed³ says that the question, a natural one, as to which is the cause and which the effect in a given case of sterility, coexisting with obesity, is best answered by the history of the case, and the antecedent condition may generally be assumed to be the causal one. Thus in the case of a comparatively young woman who takes on fat and whose increase of weight is followed by a corresponding decline of sexuality, there is logical inference that the first condition is the cause of the latter. This assumption is confirmed when a reduction of the obesity is followed by a spontaneous return of the menstrual and reproductive functions. The physiological conditions underlying the normal deposit of fat are those of abundant supply of nutritive material, normal digestive functions, a free circulatory activity, an absence of excessive muscular exercise, a normal metabolism and the unobstructed elimination

¹ American Journal of Obstetrics, July, 1899.

² Loc. cit., September, 1899.

³ American Medical Quarterly, June 1899.