terior wall of the sac, because the product of conception was retroperitoneal, and because the retroperitoneal connective tissue had been extensively dissected up in all directions. It would not have been possible even to ligature, on the peritoneal side, the uterine, ovarian, and spermatic arteries before their distribution to the placenta, for the reason that the relations of these vessels were so distorted that they were not found after prolonged search during the autopsy. Exploration through the cervix, therefore, was indicated, and it was only unskilful or unfortunate use of the sound that led to the serious mistake in the operation. Under the conditions of the case, the vaginal operation for advanced extra-uterine pregnancy would have been the operation of election, even in the presence of the risk of bleeding from the placental site.

It may be urged, in criticism of the management of this case, that the golden opportunity for operation was presented and lost, when the patient had recovered in some degree from shock and hæmorrhage, but had not yet become infected. In reply to this, I desire to say that while the actual time of the operation was unfavorable, still it was the only time we were summoned to the case when the indication for interference was absolute. As a matter of fact, I believed the woman received a necessarily fatal injury when the original hæmorrhage into the placenta occurred, and when the retroperitoneal connective tissue was so extensively destroyed.

2330 Indiana Ave., December 19, 1890.

TREATMENT OF GALLSTONES.

Read before the New York State Medical Society, February, 1891.

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In considering the treatment of gallstones we have to consider the treatment during the paroxysm, during the intervals between the paroxysms, medical and surgical measures for their radical relief and the constitutional vice leading to their formation. During the paroxysms I do not think anything superior to hypodermatic injections of morphine and atropine. They are capable of very accurate dosage, but must be very carefully employed, for some patients are extremely susceptible to these drugs and one who has long had the drugs only with benefit may suddenly be thrown into a very alarming condition by the usual dose. I should in an adult prefer to administer repeated doses of a $\frac{1}{4}$ grain of morphine and a 1-150 grain of atropine, than to

give as some do at the very outset $\frac{1}{2}$, 3-4, or even a grain of morphine. To the hypodermics, chloroform or ether by inhalation are the only possible rivals, with the added disadvantage that in employing the anæsthetics, we expose the patient to the dangers of anæsthetization.

My friend Dr. James Hutchison, of Troy, not infrequently has employed chloroform hypodermatically as an adjuvant to the administration of morphine and atropine, and has found it of excellent service. He first injects a half drachm of pure chloroform, and follows it by an injection of morphine and atropine. The chloroform acts almost instantly in relieving the pain and its influence persists until the morphine and atropine begin to exert their influence.

With morphine alone I have never had such prompt results as with a combination of it and atropine. The atropine, by relaxing the muscular fibers of the gall-bladder, and of the abdominal muscles, puts in abeyance one of the most potent factors of gallstone-colic. The present formula I use is Magendie's solution with half grain of sulphate of atropia to the ounce. Formerly I used a grain of atropine, but I found the amount of atropine altogether too large; giving rise, in some cases, to paresis of bladder lasting for several days, hallucinations of sight, together with dryness of the throat that was most tormenting. If the agonies did not yield promptly to hypodermatics of morphine and atropine I would certainly have recourse to chloroform or ether by inhalation, personally I would prefer chloroform, especially if it be administered, as it ought, by the physician. Not merely do morphine and atropine, as well as the anæsthetics, relieve the pain, but they produce such relaxation of the tissues involved that the expulsion of calculi is greatly favored. Whether prolonged anæsthetization and the consequent saturation of the tissues with them can have any actual solvent power on calculi, I think very improbable, although some practitioners are inclined so to believe, as a result of their trials in some severe cases. If from any reason we can not employ drugs hypodermatically, they may be administered by the rectum in shape of enemata or suppository, by the mouth, or has very recently been suggested, in the case of morphine, by insufflation into the nose. As a rule, vomiting precludes giving medicines by the mouth, and we are consequently limited to the rectal, nasal or epidermal methods, and for these methods, morphine and atropine or the various preparations of opium and belladonna are the main stays. Hot baths during the paroxysms are of great service.

From the fluid extract of wild yam (*Dioscorea Villosa*) I have had very good results in some cases. The relief from pain has been very prompt at times, but it has the disadvantage of being only administered by the mouth and its vile taste

is very difficult to conceal. As to chloroform, ether and turpentine by the mouth, alone or in their various much lauded combinations, I have met with few stomachs which could bear them, and where they were borne, I have seen no benefit which could not be sooner attained by morphia and atropine. As to their solvent action, more will be said anon. Large doses of olive oil have some effect, as has been shown in recent experiments in increasing the flow of bile, but its reputation for expelling enormous numbers of calculi depends upon masses of saponified oil being mistaken for gallstones. Harley, however, is inclined to believe that oil removes what he terms sleatomatous concretions.

In the case of a person who is subject to these attacks it is, I think, desirable to advise their always having about them some preparation of opium in case they are attacked on a railway journey or anywhere where immediate assistance is uncertain. Any one who has endured the tortures of an attack when assistance was not to be had will appreciate the sense of security thus given. The vomiting is often one of the most harassing features of these cases and the twisting contractions of the empty stomach, multiply manifold the agonies of the extrusion of the stone. In such circumstances it is good practice to keep filling the stomach with warm water so that it may have something to contract upon. The relief from this simple procedure is most welcome, as any who have been "through the mill" can testify.

After the termination of a paroxysm we are confronted with the question of treatment to eradicate the disease. For an understanding of the indications we must bear clearly in mind the constitution of the calculi, the location in which they are formed and the conditions favoring their formation. The calculi consist almost entirely of cholesterine in combination with salts and biliary coloring matter in various proportions. They occur at every period of life, although more common after thirty years, and have even been found in the fetus, and have been found every where in the biliary canals, from the liver to the duodenum. That gallstones are not formed in the gall-bladder alone seems to be very generally overlooked, and hence has arisen the illogical advocacy of some surgical procedures as methods of election. Normal bile is thin and alkaline or neutral in its reaction, and whatever favors its becoming thicker or acid favors the precipitation from out of it the cholesterine nominally present. Probably the most common cause is catarrhal affections of the bile ducts and gall-bladder which are in two ways favorable to the formation of calculi, the first by the formation of mucus which splits up the unstable bile salts, and, second, by the obstruction arising from catarrhal swelling checking the flow of bile, favoring the reabsorption of its watery

elements and the precipitation of the cholesterine held in solution. A dietary rich in fats, a sedentary life with full diet, and paludal poisoning seem to favor the formation of gallstones. Hence we should interdict fats and sugar, encourage exercise and combat every malarial taint.

Although ether, turpentine, and chloroform have long had a reputation in gallstone cases and many have claimed for them, especially in the well known Durande Mixture, a true solvent action on the stones, the evidence is that not only do they have no such action, but that even if the stomach can bear them they do not in my experience and that of my friends of whom I have inquired, relieved the pain. Buckler (*Boston Med. and Surg. Journal*, October, 1879), claimed that 3ss doses of chloroform every four hours combined with the saccharated succinate of iron 3 t.d. would actually dissolve calculi in the gall-bladder. But while benefit has undoubtedly followed the administration of these drugs, especially of the succinate of iron, I think it is unproven as yet that they have actually dissolved or eroded stones. Even in a test tube containing several volumes of chloroform I have failed to dissolve cholesterine stones of less than 6 grains in five hours. The cholate of soda recommended by Schiff and Dabney occupies a somewhat different position, although its solvent action is not proved, yet it supplies to the blood a salt in such form as to be very favorable to the maintenance of the alkalinity of the bile and the retention in solution of the cholesterine. However, it is from the salts of soda or to the vegetable acids that by common consent we are to expect the best results, if not in dissolving, at least in preventing the formation of calculi. Although Harley thinks that with the alkalies one can as surely dissolve calculi as when in a test tube, it does not seem rational, and proof is certainly wanting of their solvent action. However there can be but little doubt that they are very efficient in removing the catarrhal conditions of the biliary canals and in maintaining the solubility of the cholesterine.

Harley prefers the sulphate and bicarbonate of soda. Bartholow the phosphate of soda. In my own cases I have especially used phosphate and salicylate of soda with excellent results; not, I am free to admit, with any hope of dissolving stones already formed, but with the hope of correcting the conditions favoring their formation. With these salts I have not infrequently employed the wild yam and Carlsbad salts and iron, and have frequently been pleased with the long immunity from attacks and the improved condition of health. From what I have already said it may easily seem that I do not believe gallstones are ever dissolved in the body. Patients may remain years without an attack in apparent

health and like the late Dr. Sabin, of West Troy, may credit daily doses of bicarbonate of soda with removing the stones and curing the disease, and yet years later have sudden fatal attacks, as in Dr. Sabin's own case, and a gall bladder filled with stones. For some years I have inquired of my professional acquaintances how many fatal cases of gallstones they have seen, and very large though the number has been, it does not in my opinion represent a third of the direct mortality, and when the secondary effects are considered, chronic diseases of the liver, cancer, etc., recurrent gallstone attacks must answer for a very large mortality.

My belief is that in all cases where the attacks recur with frequency and severity in spite of a moderately prolonged treatment with the alkalies, iron and wild yam, operation is the only wise course to pursue. But I mean operation not as a forlorn hope, but before the powers are broken by incessant, agonizing pain, impaired digestion, or cholæmia. In ordinary cases operation will not be difficult, but in neglected cases, cases with repeated attacks of local peritonitis, with prolonged jaundice and large impacted stone, the operation may try severely the most accomplished surgeon, and the mortality instead of being 5 per cent. may amount to 25 or 30 per cent.

It is not fair to decry the results of surgery in these cases when months have been allowed to pass by during which the patient has been racked with pain, weakened by impaired digestion, or so poisoned by prolonged retention of bile that all the vital organs, especially the heart, are at their lowest. What the profession at large must learn and must teach, is that in early operation in the hands of expert abdominal surgeons, the mortality is as low as, or even lower, than in ovariectomy. The sentiment of the profession ought soon to become such that the man who in a case of intense jaundice from impacted stone or repeated attacks of colic allows a patient to go months without surgical relief will be regarded as culpable as he who waits until stercoraceous vomiting has occurred in strangulated hernia before advocating operation. It has been my fortune to see several cases in which even eminent medical men have "monkeyed" week after week with such cases, and have decried operation as unjustifiable because of the presence of a supposititious cancer, until after months of suffering the patients have either temporarily recovered or died from gallstone accident, and no cancer has been found. Certainly a careful exploratory incision, even in such cases, can do no harm, and the patient ought to be given an early opportunity to have the doubt settled, when, if ever, operation will avail.

Now as to the methods of operation, we can limit ourselves to two, both of which are now not rarely done; cholecystotomy or incision of the gall-

bladder, and cholecystectomy or excision of the gall-bladder. Although favored by such brilliant surgeons as Sir Spencer Wells (Bradshaw Lecture, 1890), by Kocher, of Bern, and others, I can but regard excision of the gall-bladder as a thoroughly irrational procedure when done as an operation of election. It starts with the unwarranted assumption that the gall-bladder is the only organ in which gallstones are formed and that with its removal the *fons et origo Mali* is removed. Were gallstones formed in the gall-bladder *alone* there would be little justification for the removal of the organ; save if it could be shown that the mortality of excision was better than that of cholecystotomy. But in addition to the fact that the gall-bladder probably has some physiological office besides being a receptacle for bile, the results had from excision are very much worse than from incision, drainage and suture of the organ to the abdominal walls. In cases of hæmorrhage, contracted gall-bladder, or where all the tissues are matted together, we may be driven to removing the organ, but as an operation of election it ought never to be entertained. On the other hand, cholecystotomy with suture of the gall-bladder to the abdominal wall after opening and evacuating the gall-bladder, permits the excision or crushing of stones in the common duct and affords an outlet to the bile, until any inflammatory or traumatic swelling of the ducts has subsided. Furthermore, if a stone in the common duct has been overlooked, by establishing a biliary fistula the cholæmia is relieved and one can later attack the impacted stone. If, however, a stone impacted in the common duct is overlooked when the gall-bladder is removed, one of two things must speedily ensue, either a forcing of the ligatured cystic duct by the retained bile and consequent fatal peritonitis, or fatal cholæmia.

The objections to suturing the gall-bladder and dropping it back into the belly are, that it exposes the patient to the risk of the sutures being forced by retained bile, especially if a stone in the common duct has been overlooked, and the mortality of this operation has justified the theoretical objections. To doing the operation in two stages, first suturing the gall-bladder to the abdominal wound and opening it later when adhesions have formed, the objection is that immediate incision with suture to the wound has proved reliable and consequently the double-timed operation is unnecessary.

The objection to cholecystotomy that a fistula sometimes remains is of little consequence in view of the enormous advantage it offers over the several operations, and obstinate fistula occur most commonly where stones in the common duct have been overlooked. But even this rare sequence has been cured by both Grieg Smith and Winifwarther through cholecysto-enterostomy; that is in uniting the gall-bladder to the intestine and

subsequently closing the external opening. The attachment of the gall-bladder to the abdominal wall gives rise to no discomfort after a few weeks, and during the first few weeks it is very slight. In my own case I have fenced, sparred, swum and rowed without the slightest discomfort and without harm.

In a paper read before the American Association of Obstetricians and Gynecologists, in September, 1890 (New York *Medical Record*), I advocated as a result of an observation in one of my own cases, the attempt, in cases of contracted or friable gall bladder, instead of extirpation of the organ, to make out of the omentum an artificial sac and to stitch it into the abdominal walls, with drainage. Very pleased was I subsequently to learn that this had already been successfully put in operation by Mayo Robson.

My conclusions are:

1. That it is as hopeless to expect to dissolve gallstones as to dissolve stone in the bladder.
2. Protracted medical treatment should give way to operative measures in face of increasing frequency and severity of attacks.
3. Operation should be done early and not delayed until a forlorn hope.
4. Better a late operation than none at all where death is otherwise inevitable.
5. Cholecystotomy should be the operation of election, cholecystectomy never.
6. The mortality in the hands of expert abdominal surgeons is very small, probably less than 5 per cent.
7. In doubtful cases exploratory incision ought to be much more frequent, especially as the risk is infinitely less than the probable benefit.
8. A post-mortem diagnosis is no help to the patient, and but little satisfaction to the friends.

My views may seem dogmatic to many, but they are the result of the observation of many cases, of the disasters of dawdling, and of much reflection over my own operations, and especially the daily weighing of the merits of operative measures when my own life was in the balance, and the ever present apprehension and unutterable torture led me to accept for myself the operation which has given me the health and strength which I now enjoy.

THE TENTH INTERNATIONAL CONGRESS AT BERLIN, AS I SAW IT.

Read before the Kings County Medical Association, March 10, 1891.

BY E. J. CHAPIN MINARD, M.D.,
OF BROOKLYN, N. Y.

I saw the capital city of Imperial Germany in the early morning from an elevated railroad depot, on Friedrich-Strasse. After having washed the dust from my eyes, and given twenty-five cents for so doing, I took a look at my strange surroundings.

To see this city had been a dream of childhood. The roofs decorated with statuary and symbols, the clean asphalt pavement, the peculiar architecture of the buildings, the silent way of doing the city work, and the subdued, even tread of companies of soldiers going to morning parade, keenly excited my curiosity. I was satisfied even to *look over* the city which held the greatest ruler and the grandest man—Virchow—the father of cellular pathology.

The unexpected greetings of long ago friends, known as college chums, and the reminiscences of college life, made me feel kindly towards the whole German nation and at home at once. The friendly reception of the Secretary, Dr. Lassar, the acceptance of credentials as delegate, the presentation of the queer little badge, the assignment to the Gynecological Section, without fuss or blunder, were very agreeable.

The building in the Ausstellungen Park was the place assigned to the Sections of the Congress. It was noisy and close, there being no corridors, and much glass and skylight. The three general sessions of the Congress were held in the Circus-ring. It reminded me of the descriptions of a Roman amphitheatre, when Rome was in her glory. It was bright and gay with light and color. Its magnificence was enhanced by the presence of army officers and surgeons, who wore imperial decorations upon their gay uniforms, which were marks of fidelity in the service of a worshiped Emperor. Others wore badges sparkling with jewels, for work done in laboratories and societies. These gay trappings seemed a fitting framework for the eight or ten thousand scientists and scholars from all parts of the globe, who had come to submit to a tribunal of the noblest criticism, the results of their truest thoughts and most patient labors. It was an event to enrich a lifetime.

To hear and see Virchow, who, crowned with the knowledge of three-quarters of a century of research, has lived to verify and rectify his own investigations, and whom his countrymen have honored, idolized and *outgrown*, but who to-day, in his waning life, is *the one* scientist who can measure arms with the younger giant, Koch; to touch the hand of Apostoli, and hear him defend "galvanism" as only a master can; to return the smile of recognition on the broad, good-natured face of Martin; to look with reverence approaching awe upon the faces of Koch, Pasteur, Lister, Esmarch, Tait, Billroth, Oppenheim, Sir Spencer Wells, and a host of others, with more or less unpronounceable names; to find Lusk, Parvin, Senn, Wood, Billings and many others of my countrymen in their midst; to hear ten tongues and twice as many dialects spoken, yet to understand the universal language of science, and to be an accepted member of this great body of investigators and thinkers—is an honor to be