

POST-OPERATIVE COMPLICATIONS INVOLVING  
THE ALIMENTARY TRACT.\*

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It is conservatively estimated that during the year 1906 more than 75,000 abdominal operations were done in 2,300 American hospitals. The mortality following these operations varied between the very wide limits of 1.5 per cent. on the one hand and 24.5 per cent. on the other. It is fair to assume that mortality merely marks the limit of post-operative morbidity, and that quite as striking a difference occurred in post-operative complications and sequelæ.

A personal inspection of a considerable number of the institutions referred to, and a comparison of their equipment and meth-

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ods, will in large measure afford explanation of this marked discrepancy in results. Fortunately the great bulk of work done to-day is in the hands of competent surgeons and is of a high order of excellence. Yet whatever results may have been achieved in the past, it is incumbent upon all who do such work to strive diligently for further improvement. We must realize at the very beginning that many factors contribute to a high percentage of recovery with ideal convalescence. Chief among them are a due appreciation of the functional value of anatomical structures, a comprehensive knowledge of the principles of pathology, the recognition and correct interpretation of gross pathological lesions in the living subject, an intimate knowledge of the habits and accidents common to the abdominal viscera, a correct estimate of the patient's margin of reserve strength, a wise choice of the time and type of operation, a rigid aseptic technique, a considerable degree of manipulative dexterity, and such *esprit de corps* among one's group of co-workers as will permit of operative speed and precision. It is clear that the consummation of these desiderata necessitates a fortunate combination of time, adequate facilities, proper training, special aptitude, and assiduous application. Yet they are the requisites of uniform success, and as such constitute the most important factors in the prophylaxis of post-operative morbidity and mortality.

It is generally recognized by those who realize the gravity of their trust, that these considerations apply to surgical measures in general, and that the more serious the work and the complications which may follow, the more rigidly do they apply.

In abdominal work the structures which may be more or less seriously impaired by our efforts to relieve real or fancied ills are the circulatory system, the respiratory tract, the excretory organs, the abdominal wall, the peritoneal sac, and the viscera it ensheaths.

Your President has wisely entrusted three of these subjects to men who can speak with authority regarding them. To me he has accorded the privilege of presenting for discussion the remaining topic, viz., some of the "Post-operative Complications Involving the Alimentary Tract."

These complications, like other affections of the alimentary tract, give definite evidence of their existence and their nature by deviations from normal functions alone, or in association with functional disturbances of other structures.

From the standpoint of practical diagnosis, three types of affection may modify the functions of the digestive tract. They are:

1. Functional disturbances of the alimentary tract itself, due to the anesthetic; to slight traumatism from handling the intestines or packing them out of the way; to decomposition of intestinal contents; to the absorption of poisons from the alimentary tract, etc.

2. The second type of affection which may disturb alimentary functions consists in functional or organic affections of other structures of the body, such as local or general peritonitis, and post-operative acute toxic hyperemia of the kidneys, each of which conditions gives a definite and characteristic series of alimentary symptoms.

3. The third type consists in organic lesions of the alimentary tract itself, such as intestinal adhesions, fecal fistula, intestinal obstruction, thrombosis of mesenteric veins, acute dilatation of the stomach, etc.

#### I. FUNCTIONAL DISTURBANCES OF THE ALIMENTARY TRACT.

The most striking functional post-operative disturbances of the digestive tract are nausea and vomiting, and meteorism, with or without excessive or diminished peristalsis and abnormal discharges.

The significance of these phenomena varies with their individual characteristics, the time of appearance, duration, and associated disturbances. Thus, we must recognize three types of emesis:

- (a) That accompanied by retching,
- (b) That accompanied by nausea,
- (c) The regurgitant or projectile type which is attended by neither nausea nor retching.

The time at which emesis begins is of diagnostic importance. The vomiting due to anesthesia begins before or shortly after the patient becomes conscious and is attended by retching and at times nausea. Its frequency and duration are almost an exact index as to the excessive quantity of ether taken. When given carefully and in small amount by the drop method, emesis is usually entirely absent, or occurs only once or twice within the first twelve hours. When, however, a considerable quantity of ether is required, or when it is poured on until the patient is thoroughly saturated, as was too often the case even a few years ago, the vomiting sometimes persists for eighteen to twenty-four hours, and merges into that due to renal insufficiency.



The emesis of post-operative acute hyperemia of the kidneys usually occurs in cases in which the quantity of ether and the vomiting due to it have been excessive, though there is often a quiescent period of ten or twelve hours. It commonly begins eighteen to twenty-four hours after operation, is slight in amount, accompanied by decided nausea and retching, is frequent and persistent; the tongue is dry, the quantity of urine grows progressively less, and albumin and casts become more and more abundant. When the condition is recognized and a hot air bath given, the excretory organs become active and vomiting ceases abruptly and completely.

In striking contrast to these two types of vomiting, we find the regurgitant or projectile type due to meteorism, ileus, or acute dilatation of the stomach. It rarely begins earlier than twelve hours after operation and is characterized by large quantities of bile-stained fluid which rolls from the mouth with very little effort or nausea.

Other functional complications of the intestines which may rarely occur are dynamic ileus and poisoning by the yellow iodide of mercury.

*Dynamic Ileus.*—Since the classical article on ileus, published by Dr. Jno. B. Murphy (in the *Journal of the American Medical Association*) in 1896, several cases of death due to dynamic ileus have been reported, but little of essential value has been added to the knowledge of the subject.

This condition has been observed so rarely that many able surgeons have even doubted its existence, asserting that the contraction of the intestine occurred after death. From that opinion I must dissent. I am aware that post-mortem contraction of the intestine does occur; I have observed it several times. I feel equally sure, however, that dynamic ileus may occur during life and be largely responsible for death. It was my privilege to observe Dr. Werder's case throughout, having assisted in the operation, seen the patient constantly during her illness, and witnessed the autopsy two hours after death. Though this case has been published in detail, I take the liberty of giving a synopsis here.

Mrs. W., 35 years old. The right tube, containing a small round cell sarcoma the size of a cherry, and the cystic right ovary were removed without incident. For the first five days convalescence was perfectly normal—she was reading the daily papers and asked permission to sit up. Following an egg-nog she had griping pain

in the intestines. Typical symptoms of almost complete intestinal obstruction, very slight distension, excessive peristalsis and marked circulatory disturbance gradually developed and continued until death, seven days after the onset of symptoms and twelve days after operation. The only improvement that occurred followed a dose of morphine given for pain. In view of the post-mortem findings the morphine probably caused the improvement. At autopsy, two hours after death, twenty-two inches of the ileum and the entire large intestine were firmly contracted, the ileum having an outside diameter of one centimeter, and the colon being exactly the size of my thumb. No other lesion was found, except a small sheet adhesion to the intestine which in no way constricted its lumen.

*Yellow Iodide of Mercury Poisoning.*—Formerly it was not unusual to employ iodoform gauze for draining, or more accurately, plugging, in cases especially liable to develop localized peritonitis. This was done in one of our cases in 1896. The peritonitis developed on the third day, calomel was given, a grain every hour for seven doses. In twenty-four hours she had, to our amazement, twenty bloody stools, accompanied by marked tenesmus. Fortunately she recovered. Iodides were found in the urine and saliva. She had been absorbing iodine from the surgical dressing and eliminating it into the bowel as iodides and iodates. The calomel combined with it, giving the yellow iodide of mercury in toxic dose. Since then we have rarely used iodoform gauze in any way.

## 2. ALIMENTARY COMPLICATIONS DUE TO LOCAL OR GENERAL PERITONITIS.

The nature of these complications is so generally and so thoroughly understood that the merest reference would almost seem unpardonable. Yet I cannot refrain from adding my testimony to the prophylactic value of deferred operation for the removal of the products of inflammation, involving the uterine appendages.

It has been my privilege to observe abdominal work at a time when it was customary to remove pus tubes during the acute attack. At that time the mortality from such operations exceeded 10 per cent.; drainage was usual, adhesions and hernia frequent; fecal fistulæ were not rare; and localized peritonitis left products more serious than those removed.

In common with most of you, I am unalterably opposed to

choosing the acute attack as the elective period for removing inflammatory products of the uterine appendages. My reasons are briefly as follows:

1. In a series of approximately 3,000 cases of inflammation, of tubal origin, the disease has had a mortality of less than 0.5 per cent., if we exclude those cases of streptococcic infection occurring after the pregnant uterus has been emptied and in which nature has made no effective attempt to barricade her lymphatic approaches. In those cases the infection quickly becomes systemic and in no sense should they be considered in this connection except to be excluded.

2. In a series of more than 230 consecutive abdominal sections done for the removal of the products of tubal infection, there have been only two deaths. In one instance death occurred eleven days after operation and was due to tuberculosis, with ulceration of the intestinal mucosa. In the other, death occurred in the fourth week, and was due to cerebral embolism following pneumonia.

3. In that entire series there has not been a single serious intestinal complication of any kind following operation, and remarkably few were found at the time operation was done.

4. If operation is habitually done during the acute attack, many ovaries, tubes, and uteri will be needlessly sacrificed.

In choosing the time of election for operation in these cases, it has been my custom to absolutely decline to operate until four essential facts were accomplished.

First, the patient's general health must be such that she has a good margin of reserve strength.

Second, there must be no cellular exudate. If one existed, it was nature's positive declaration that the offending structure contained a poison she was afraid to admit into her systemic circulation. When the need for its existence disappears an exudate is always absorbed. We can well afford to wait until that time.

Third, the temperature must be absolutely normal or lower for at least three weeks—at first an arbitrary period, which I think has proven to be the earliest uniformly safe time to operate.

Fourth, when the preceding conditions have been demonstrated to exist, a careful bimanual examination is made, and the temperature is taken every hour for four hours; if this slight traumatism causes a rise of temperature, we may be sure



the greater injury due to operation would be very likely to cause a serious inflammatory reaction.

I feel that I may speak with confidence regarding the prophylactic value of these tests. By way of defining the limit of application of these remarks, however, let me say that delay is not advised where pus is easily accessible for evacuation, and in a few other types of cases in which sound surgical judgment may lead one to operate earlier.

#### STRUCTURAL CHANGES.

*Intestinal Adhesions.*—It has been said that adhesions constitute the opprobrium of abdominal surgery. The truth of that saying rests upon the fact that they might usually just as well have been prevented, if surgical judgment were always good.

During the course of abdominal operations we should constantly bear in mind the fact that nature's method of protecting herself against offending objects within the abdominal cavity is to wall them off by adhesions. We should further remember that she does not discriminate between the offending objects we make or leave and those originally there. It is, therefore, imperative that we should not introduce infectious material into the abdominal cavity. It is equally imperative and equally feasible that where an infectious focus exists within the pelvis, the pus should be rendered innocuous by internal sterilization before we run the risk of soiling clean structures with it.

By preventing peritonitis the judicious choice of time for operation constitutes one of the most important prophylactic measures in connection with intestinal adhesions.

Of scarcely less importance are the covering of all raw surfaces and the checking of all oozing, in clean cases as well as septic ones.

Greig Smith long ago showed that raw and peritoneal surfaces adhere very quickly and firmly. The only legitimate inference is that all pedicles and all raw surfaces due to broken adhesions or other injury should be completely covered, thus leaving all exposed surfaces covered by healthy peritoneum.

Notwithstanding these well-known facts, while in London last summer I saw one of England's foremost surgeons remove three fibroid uteri in one afternoon. He was very dexterous. In each instance the abdomen was closed in less than twenty minutes from the first stroke of the knife. But he did not cover any of his pedicles. It would be interesting to know what percentage of his

patients require subsequent operations to correct the defects he causes.

We should further remember that blood clots are foreign bodies which nature attempts to get rid of by sealing or absorption.

We should never lose sight of the fact that drainage always produces adhesions and often hernia as well.

By demonstrating these facts beyond question, your President has perhaps done more than anyone else to reduce the frequency, extent and severity of adhesions, and to prevent the disastrous results consequent upon them.

The type and location of adhesions, and the nature of offending objects they conceal, have much to do with the inconvenience they cause, the need for relief, and the methods to be employed.

To illustrate: Mrs. McK. had a retroverted uterus and small cyst of the right ovary. She was operated upon by a noted surgeon of another state. He removed the right ovary and did a ventrofixation. His pedicle and fixation sutures and abdominal wound became infected. The small intestine became adherent to the pedicle with infected silk ligatures, forming the wall of a small abscess. The sigmoid was adherent to the uterus and interior of the hernial sac. In each instance the intestinal adhesion protected the peritoneum from septic invasion. The pain was so constant and severe as to require surgical relief. She made a structural and symptomatic recovery.

Mrs. W.'s appendix and cystic right ovary had been removed. The right ovarian pedicle was infected, and a knuckle of small intestine became adherent to it, forming the wall of an abscess. There was an incisional hernia. A band of omentum was adherent at one end to the fundus of the gall-bladder, and at the other to the abdominal incision. She had constant pain from the infected pedicle and variable pain, due to the intestine tugging on it. The gall-bladder became kinked at times, and typical colic without jaundice occurred. To add to her troubles she became pregnant, and at the third month I saw her for the first time, at the request of her family physician. The pedicle was covered, the intestine repaired, the gall-bladder freed, the cystic left ovary punctured and the hernia corrected.

She recovered, was relieved from her suffering, went to term, and gave birth to a healthy child without incident.

These cases are but types of many that come to us all, and teach this great lesson—either greater care must be used in choosing the



time and type of operation and the condition under which it is done, or else fewer people should be operated upon.

*Intestinal Obstruction.*—Mechanical obstruction of the intestines occurring after operation presents no distinctive clinical features, but may be recognized as readily as if it occurs in the ordinary course of life.

With the occurrence of obstruction within a few days after operation, I have had no personal experience, nor have I ever seen a case; I have seen, however, several cases of intestinal obstruction which occurred at varying periods of from one to ten years after operation. The two chief types are (1) those in which a broad surface of adhesion is followed by constipation, with difficult painful evacuation for a time, and finally by complete obstruction; and (2) those in which a knuckle of gut suddenly becomes incarcerated and strangulated by a band of adhesion, much in the same manner as in the case of an adherent appendix, Meckel's diverticulum or suspensory ligament following ventrosuspension.

Of the first variety the case of Miss W. is typical.

A solid sarcoma of the right ovary was removed by Dr. — in 1897—mass silkworm gut sutures alone were used. Convalescence was speedy and comfortable. From time to time she was annoyed by gas, experiencing dragging pain at one spot near and above the line of incision. Later she had occasional spells of gripping, vomiting, localized pain, and great difficulty in inducing the bowels to move.

In August, 1901, three years after the original operation, I was asked to see her in one of these attacks. She was sent to the hospital, the abdomen opened and six inches of small intestine released from adhesion to the upper angle of incision and adjacent abdominal wall. She made an uninterrupted recovery, is comfortable and free from recurrence of her sarcoma, some nine years since the ovary was removed.

In the foregoing types of intestinal obstruction adhesions have caused the trouble.

There is another type, however, in which the obstruction is due to the deliberate production of conditions favorable for internal strangulation. Though relatively infrequent, one may find in literature hundreds of recorded cases of intestinal obstruction due to Meckel's diverticulum or to an appendix adherent at its tip.

Ventrosuspension and the Gilliam operation upon the round ligaments produce bands of adhesions which stretch across the

free peritoneal cavity and are equally liable to cause internal strangulation.

Though I have knowledge of only seventeen cases of intestinal obstruction directly due to the suspensory ligament, I cannot but feel that many more cases will come to light during the next decade.

*Fecal Fistula.*—My personal observation and experience lead me to believe that the choice of time and type of operation will have much to do with the production or prevention of post-operative fecal fistula.

During the time when it was customary to remove acutely inflamed uterine appendages, it was not unusual to find adherent intestines, the walls of which were infiltrated, soft, friable, and easily torn. They were not flexible, sutures readily tore out, and repair was correspondingly difficult and unsatisfactory. It was then customary also to drain. As a result of this unfortunate combination of circumstances, fecal fistulæ occurred in a very definite percentage of cases. On the other hand, if operation has been deferred until such time that the exudate in the intestinal wall has been absorbed and the gut is practically normal, an injury is less liable to occur, and is much more easily and successfully repaired.

By a strict observance of these principles it has been my good fortune not to have a single fecal fistula in my last series of more than 600 consecutive abdominal sections.

Indeed, one may occasionally succeed beyond all reasonable expectation if he persists in his efforts to restore the local structures as nearly to the normal as possible, prior to operation.

Permit me here to cite a case in point: Miss V. had for many months been discharging horribly offensive pus from the bowel each day. She was seen by Dr. Jno. A. Lichty, who referred her to me, because of an infected cyst five inches in diameter, which communicated with the rectum by an opening about four inches above the anal orifice. She was sent to the hospital, and the bowel washed daily with normal salt solution for a period of six weeks. Fortunately the communication between the cyst and rectum closed. The treatment was continued until we were reasonably sure the cyst could be removed without injury to the rectum. It was shelled out from its bed of adhesions. The rectum had so far recovered that after a careful search we failed to find the site of the previous opening.

Though the cyst contained about a quart of horribly offensive pus, similar in all respects to that which had been discharged by the rectum, recovery was prompt and complete except for a slight stitch infection. That was directly attributable to the pus, which was found to be teeming with virulent staphylococci.

It is my firm conviction that operation during the existence of the communication would at least have resulted in a fecal fistula, or more probably in death from septic peritonitis.

I am convinced that many of the more serious cases of pelvic inflammation run less risk of serious intestinal complications if, with preliminary treatment, the surgeon disregards the element of time.

In this way, by careful treatment, one may readily improve local conditions, and so far restore the strength of his patient that operation may be deliberate and complete rather than a hasty makeshift.

*Thrombosis and Embolism.*—So much experimental work has been done and as much has been written regarding injuries to the intestinal blood supply, that time and occasion forbid a detailed reference to the principles involved in thrombosis and embolism of mesenteric vessels. Clinically two types are met with. In one the occlusion is directly dependent upon violence done to the intestine or mesentery, while in the other type no such injury has occurred.

Of the first class, the following case is illustrative:

Mrs. — was attended by a midwife and seen later by a physician. She had been in labor for fourteen hours, the child having been delivered instrumentally before she entered the hospital. The uterus had been ruptured. Twenty-odd inches of intestine had been stripped from its mesentery, and protruded into the vagina. The abdomen was immediately opened, the ruptured uterus removed, the intestine resected, six inches or more having been removed above and below what appeared to be the limits of the injury. The patient's pulse promptly fell below 100 and remained so some forty-eight hours. During that time her condition was so good as to make us feel she was about out of danger. Suddenly she complained of severe pain in the abdomen. Vomiting began and gradually became excessive and projectile. The abdomen became distended; peristalsis was constant, but slight and ineffectual. The pulse grew rapid, the superficial veins contracted, the surface pinched and cyanotic. She died on the fourth



day. Autopsy showed no peritonitis or other pathological lesion except gangrene of the gut, two or three inches on each side of the anastomosis; it was due to thrombosis of the mesenteric vessels.

Perhaps a more frequent risk of injury is incurred where a neoplasm, especially an ovarian cyst, is so firmly adherent to the mesentery that complete separation is impossible if the integrity of the blood supply is to be preserved. In such cases the lesser evil is chosen by allowing a portion of the cyst wall to remain.

The writer has had no personal experience with cases in which thrombosis or embolism has occurred in uninjured mesenteric vessels. Such cases have been reported by Maylard, Oberembt (Thienbaus), and Elliot. Elliot was particularly fortunate in that his three cases were recognized, the gangrenous intestine resected and all recovered.

*Acute Dilatation of the Stomach.*—In 1902 Campbell Thompson reviewed the literature and found record of but forty-four cases of acute dilatation of the stomach, only six of which occurred after abdominal operations. Since that time—that is, during the last five years—more than eighty additional cases have been reported, forty of which followed abdominal (including kidney) operations. The gravity of the affection is probably overstated by the recorded cases. Thus, of one hundred and twenty-four cases reported to date, eighty-six have died, apparently yielding a mortality of 69 per cent. It is evident, however, that only the most striking examples have been reported. Doubtless a much larger number of mild cases have recovered and passed unnoticed. Many others have been recognized but not published.

Thus Halstead says, "There undoubtedly exist minor degrees of dilatation that speedily recover spontaneously, or yield to medical treatment." Doubtless, also, many of the fatal cases would have yielded to prompt and appropriate treatment. This opinion would seem amply justified by the favorable termination in cases reported by Movnihan, Robeson, Herrick, Schnitzer, Baumler, Müller, and Walzburg.

*Etiology.*—Injuries, especially those involving the central nervous system, diseases and deformities of the spinal column, wasting diseases, or operations, abdominal and otherwise, have preceded acute dilatation of the stomach in the vast majority of reported cases. Each has been looked upon as bearing some etiological relation to the disease.

The most hopeful idea advanced, however, is that of Rokitsky (1863), elaborated by Kundrat (1891), and more recently

acted upon by many observers, who have been able to record recoveries, where death might reasonably have been expected. This view attributes acute dilatation of the stomach to a sudden mechanical obstruction of the intestine. The duodenum is the usual seat. Obstruction occurs where the superior mesenteric artery crosses the duodenum, and is supposed to be caused by compression of the gut between the mesentery and spinal column.

According to Connell, the first recovery due to treatment directed to the relief of this supposed duodenal compression was recorded by Schnitzler in 1895. Since that time the disease has many times yielded to prompt and appropriate treatment.

The line of treatment which seems to have yielded the best results consists briefly in

- (1) Such posture, inverted, turning on abdomen, knee-chest, etc., as will tend to release mesenteric tension and compression.
- (2) Washing the stomach and permitting the gas to escape.
- (3) Keeping the stomach empty.
- (4) Administration of needed food and stimulation by rectum and beneath the skin.

So far as my reading goes, death has been the rule where surgical attempts at relief have been made. The stomach was opened in the cases of Brown, Box, and Wallace, Appel Hoffman, Kirch, and Wright; gastroenterostomy was done by Kehr and Korti. All nine of these patients died.

In a very considerable percentage of cases a mechanical cause does not seem adequate to explain the clinical course—indeed, autopsy has in many instances demonstrated an entire absence of mechanical obstruction.

I would submit that in regard to etiology in some of these cases we cannot disregard the following facts:

(1) In the nephritis of ordinary life, nature not infrequently attempts to eliminate waste products through the stomach. In such cases nausea may be intense and vomiting incessant until relief is given.

(2) In the cases of post-operative acute toxic hyperemia of the kidneys, nausea is intense and vomiting becomes incessant, until relief is given by unlocking renal and other secretions.

(3) In a very considerable number of recorded fatal cases of acute dilatation of the stomach, the kidneys have actually been operated upon; and in many other cases the definite statement

has been made that the urine was scant and loaded with albumin and casts.

In view of these facts, does it not seem at least reasonable:

(1) That nature is attempting, vicariously, to eliminate poisons by the stomach.

(2) That as the toxic material is most concentrated at the point of elimination, the stomach becomes poisoned, paralyzed, exhausted, and in some cases even dies, thus precipitating acute dilatation and sudden collapse.

(3) That the acute dilatation may in some instances be merely a terminal symptom of fatal toxemia, due to renal or hepatic insufficiency, the individual poison varying with the individual case.

(4) That treatment should be directed, not alone to the terminal symptom, but to the underlying cause as well.

It has been the writer's fortune to see, or at least to recognize, only one case of acute dilatation of the stomach.

The essential features of this case are:

A woman thirty-four years old had borne five children. I was told that while in a difficult sixth labor, her uterus was ruptured at 5 A.M., March 9th. She was sent to the hospital, arriving there at 7:45. At 8 the abdomen was opened. It contained the child, which weighed 9½ pounds, a double uterus (the left uterus having been pregnant and ruptured), and a quart of blood-stained fluid. The placenta was still attached within the uterus. The child's feet were in the left broad ligament; its head was in contact with the stomach and spleen.

The uterus was quickly removed, the blood vessels were ligated, but the pedicles were not covered. The bloody fluid was mopped from the renal fossæ, the intestines being pushed from side to side to make that possible. The anteroposterior and transverse diameters of the abdominal cavity were found to be unusually great. The stomach was observed to be normal in all respects.

Iodoform gauze and tube drains were inserted into the vagina. A Miculicz drain (iodoform sac containing plain sterile gauze) was placed in the pelvis so as to shut off the uterine pedicle and torn broad ligament from the general peritoneal cavity. The patient was removed from the table forty minutes from the beginning of the operation. Her pulse at that time was 160. Three ounces of ether were used.

*Clinical Course.*—Because of the soiling and traumatism of the



abdominal viscera, the patient was put in the exaggerated Fowler position.

*Emesis.*—From the first—indeed, before the operation—she complained of intense thirst. Her tongue was dry. She did not vomit until 6:50 P.M. (ten hours after operation). A pint or more of bile-stained fluid was thrown up. Again at 8:30 like emesis occurred. This was continued at intervals until 11:30 P.M.

*Urine.*—She was catheterized at 6 P.M. and four ounces of urine gotten. It was concentrated, of a dirty brown color, and was loaded with albumin.

*Circulation.*—From the time of the operation until 11:30 P.M. (fifteen hours), the pulse reached as low as 130, but was usually recorded between 136 and 140.

*Physical Examination.*—When I saw the patient at 9 P.M., twelve hours after operation, the stomach showed as a dome-shaped protrusion above the surface of the abdomen, extending eight inches transversely, and reaching below the umbilicus. She was very restless and suffered considerable pain in the distended area. The lower abdomen was soft and flat. At 11:30 the stomach was more tense and larger. The discomfort, thirst, and vomiting were more pronounced. The stomach tube was passed. A pint or more of bile-stained fluid and great volumes of gas escaped. She expressed herself as being instantly greatly relieved. She was turned on her abdomen and the head of the bed considerably lowered.

After the lavage and change of posture, she ceased vomiting at once and no other emesis has occurred. Her pulse dropped progressively, reaching 98 in eight and one-half hours. (For fifteen hours it had practically remained at 136-140.) Renal secretion improved.

Her further convalescence was somewhat tedious, but progressive. Among her complications may be mentioned nephritis, mild iodoform poisoning, localized peritonitis, and pelvic cellulitis. Fortunately, her recovery was complete.

SIXTH STREET AND DUQUESNE WAY.