Surgical papers (1914-1917) / by J.F. Baldwin.

SURGICAL PAPERS

(1914-1917)

By

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FOREWORD.

In 1914, I published a little booklet containing reprints of a number of articles which I had published in different medical journals during the few preceding years, and certain conclusions drawn from my work which was based at that time on something more than 8,500 abdominal sections. During the three years since that publication I have added to my experience by 2,106 abdominal sections, making a total of nearly 11,000 such operations.

When a surgeon operates in a public clinic, his personal examination of cases brought before him is usually only cursory, and the after treatment of his cases is left to house doctors. In my own work, however, with a few negligible exceptions, the history of the patient is obtained personally; the examination and diagnosis are reached personally, though many times with the co-operation of associates to whom are entrusted investigations along special lines —such co-operation being many times of the greatest importance in the elucidation of the case; and the oversight of the patients during convalescence is entirely in my own hands, so that my knowledge of each case from start to finish is unusually complete, and my notes of the cases unusually full. The conclusions, therefore, formed after such a large experience, and with such personal knowledge of the cases, must necessarily be worthy of more consideration than would conclusions drawn from imperfect personal knowledge and the usual incomplete hospital records.

For a number of years I have been in the habit of sending out reprints only after a number of my articles have appeared in the medical press, instead of sending them out singly as is the general custom. Recipients of these reprints have frequently expressed a preference for this method, and hence I again employ it.

In sending out this contribution I would call the attention of the general practitioner especially to the article on anoci-association, under the heading of "Shockless Operations," and also to the article showing the great danger of nitrous oxide-oxygen anesthesia, which method, for reasons stated, is being at the present time so widely and dishonestly exploited. Abdominal surgeons will be particularly

interested in the illustrated article on the Technique of Abdominal Hysterectomy, evolved as it is from such a large number of cases.

Since my publication in 1914, I have seen no reason to change my views as to the use of ether as the standard anesthetic; as to the method of sterilizing infected surfaces by the use of iodine; as to the material for ligatures; as to the extreme impropriety of purgation in anything which may possibly be a beginning appendicitis; as to the use of water and opiates by patients, and as to the character of drainage when drainage is necessary.

J. F. B.

NITROUS OXIDE-OXYGEN, THE MOST DANGEROUS ANESTHETIC

Whenever any new line of treatment is proposed it is universally recognized as incumbent upon its sponsors to show that it is better than prevailing lines of treatment, its superiority consisting in a larger percentage of cures, a more prompt recovery, or a diminution of morbidity.

This rule most certainly should apply to the introduction of any new anesthetic agent. Chloroform has its advocates, and for certain purposes its advantages, but ether may be accepted as the standard of safety the world over. Every new anesthetic must, therefore, be weighed in the balance with ether.

If the sponsors of the new anesthetic are actuated purely by scientific motives, every unsatisfactory experience, and certainly every death, would be promptly reported, so that the profession at large could judge as to the relative value of the new anesthetic; while if such adverse experiences are not reported, but attempts are even made to cover up and deny their occurrence, then only mercenary motives can be attributed to the advocates.

[Within a few years the profession has been hearing much of nitrous oxide-oxygen, but the sponsors for this new anesthetic have displayed a notorious and significant failure to report their deaths, while the amount of advertising which the method has received in the daily papers, and the large fees which are charged by the anesthetists for its use, have created more than a suspicion that many of them at least are actuated by motives that are far from altruistic.] Teter of Cleveland, in a personal letter, reports that he knows of twenty-six nitrous oxide-oxygen fatalities, nine of which have occurred in Cleveland. Dr. A. H. Miller of Providence, R. I., has collected references to eighteen deaths. Rovsing was able to get track of thirteen deaths, several of which had been suppressed. (This author in his chapter on anesthesia gives a death rate of one in 2,000 for chloroform, and one in 50,000 for ether.) Gwathmey (personal communication) knows of from twenty to forty unreported deaths.

Practically all of the anesthetists who have written on nitrous oxide-oxygen state most positively that death occurs *only* from asphyxia, and that if the anesthetist watches the color and pushes the oxygen death cannot occur. If that is the case, it is certainly very important that the anesthetist shall know what are the symptoms that indicate asphyxia.

Turning to Gwathmey (p. 134) we find the following statement: "The fourth stage, or stage of overdose, supervenes through some error of technique by which asphyxia becomes the predominant feature of the narcosis. Breathing becomes embarrassed usually through convulsive muscular spasm. The interference with respiration is first marked through hyperpnea (excessive breathing), then by dyspnea (difficult breathing). Violent or convulsive expiratory efforts, sometimes accompanied by general muscular spasms, mark the second stage of asphyxia. Following this there is a stage of exhaustion, in which the muscular spasm is superseded by muscular flaccidity. The pupils become more widely dilated, the lids are widely open, the conjunctivæ are insensitive, the pulse becomes imperceptible, respiration is marked by prolonged sighing inspirations which gradually cease. Paralysis of the respiratory center is complete and death supervenes. Marked cyanosis accompanies this condition of affairs."

In none of the cases detailed in this paper was death the result in any way whatever of asphyxia, but in all of them the death occurred without warning, in the midst of an apparently smooth anesthesia, and with the startling suddenness of an overdose of chloroform.

Gwathmey states, as the natural effect of nitrous oxide-oxygen administration, that the pulse becomes rapid, from 140 to 160 per minute, and in prolonged operations the temperature goes up from ½ to 2 degrees (p. 109).

According (Gwathmey) to the experiments of Buxton, and later of Wood and Cerna, "nitrous oxide-oxygen exerts a direct action upon the heart itself, having little or no direct influence upon the vasomotor centers of the brain cortex" (p. 130). "Buxton . . . found that . . . nitrous oxide produced so great an enlargement (of the bulk of the brain and the cord) as to force out the cerebrospinal fluid" (p. 131).

"The most natural inference, from the study of the reflexes and other effects upon the nervous system, is, according to Kemp, that nitrous oxide acts especially upon the brain cortex" (p. 131).

It is inconceivable to think that any agent capable of producing the constitutional disturbances indicated above should not be pregnant with manifold possibilities of evil; and yet, in a calendar just received from a [Cleveland] manufacturer of nitrous oxide-oxygen, we are told that this combination "Does not affect the heart; does not affect the kidneys; does not produce nausea; decreases danger of postoperative pneumonia."

[A few months ago there was inserted at my request a notice in the Journal of the American Medical Association, asking for reports of fatalities under nitrous oxide-oxygen, and the same notice was reproduced in the *Ohio State Medical Journal.* Those who are informed as

to the secrecy which seems to be generally maintained among nitrous oxide-oxygen anesthetists, will not be surprised when I state that I have not yet received a single reply to either of these notices. *I had not expected any.*]

Connell, who writes the article on anesthesia in Johnson's new work on "Operative Therapeusis," says of the nitrous oxide-oxygen anesthesia that "since the extensive introduction of this gas into general surgery, the reported and unreported deaths have probably far exceeded those from ether," and aside from its death rate it is evident from his entire chapter on this subject that he regards its disadvantages as far outweighing its possible advantages.

Luke, anesthetist to St. Luke's Hospital, New York, reports one death out of about 200 administrations of nitrous oxide-oxygen. The patient was dead six minutes after entering the operating room. He also reports another case in which the patient was resuscitated with great difficulty. Dr. Roy McClure, now of the Johns Hopkins, reports to me two deaths which occurred while he was connected with the New York Hospital. These occurred in the service of Dr. Frank Hartley, and took place while gas was being given as a preliminary to ether. Dr. McClure was resident surgeon at this time, and is entirely familiar with the facts.

From inquiry as to nitrous oxide-oxygen at the Mayo clinic, I find that this anesthetic was used in about 1,400 cases as a preliminary to ether. I can learn of no mortality, but the result was not satisfactory and it was dropped. Miss Henderson, the anesthetist, under date of January 16, 1915, wrote that on the day before Dr. E. J. Burch of Carthage, Mo., reported to her a case which he had lost under nitrous oxide-oxygen. The anesthesia had been a brief one for a rectal examination. The examination was completed and the surgeon left the room, but was called back hurriedly and found the patient dead. She says of the nitrous oxide-oxygen anesthesia: "We have investigated its merits at various times, but the surgeons have not seen fit to make any change from 'drop ether,' which has been used here for many years." A personal communication from Dr. Burch affirms this report.

In conversation recently with two of the best known surgeons of Cleveland, Drs. Bunts and Skeel, I found that no thorough investigation of nitrous oxide-oxygen deaths had ever been made in that city; numerous instances were known, but the details had never been published. Both of these surgeons used ether by preference, but because of the newspaper prominence given nitrous oxide-oxygen they were obliged in some cases to yield to the request of their patients and use that anesthetic. [Under such circumstances they always insisted that Dr. Teter should be secured to give the anesthetic.]

Gwathmey (p. 109) reports three fatalities out of 2,500 cases. In the first case death occurred suddenly before operation was commenced. In the second it also occurred suddenly, but the operation had begun and the anesthesia up to that point had been normal. In the third case the pulse became very rapid, and at the close of the operation went up very rapidly. Color became cyanotic and could not be cleared up with oxygen, the breathing became weaker and weaker and finally ceased. Because at the autopsy an enlarged thymus was found, with hypertrophy of the lymphatic tissues in general, the pathologist gave status lymphaticus as the cause of death.

Recently (December 5, 1915) Dr. T. G. McCormick, now of Portsmouth, Ohio, formerly of Detroit, told me that they had had either seven or eight deaths at Grace Hospital, Detroit. He was resident physician there during that time, and one of the deaths occurred while he was giving the anesthetic. He could give no particulars of any of the other cases, but his own patient died suddenly and without any warning.

The following is the Columbus death list for nitrous oxide-oxygen:

1. The first death in Columbus from nitrous oxide alone occurred some years ago at the Dental Clinic of the Ohio Medical University. The gas was given for the extraction of teeth, and the patient died suddenly and without any warning. Efforts at resuscitation were made as usual, but were unavailing. My authority is Dr. A. O. Ross, then dean of the dental department.

2. Probably the first death in this city from nitrous oxide-oxygen took place at Mt. Carmel Hospital, the anesthetist being a physician who was considered an expert, and who is among the best known anesthetists of New York City. The patient, according to the anesthetist's statement to me, died suddenly in the midst of a somewhat prolonged abdominal operation.

3. Dr. G. W. Mosby, of Columbus, reports to me that he had a patient die from nitrous oxide-oxygen, also at Mt. Carmel Hospital, the anesthetic in that case being given by Dr. Jones. The operation was for pelvic infection. The operation, he says, had lasted about forty-five minutes, and was proceeding satisfactorily apparently, when the patient suddenly died. He unhesitatingly attributes the death to the anesthetic.

4. Dr. R. B. Drury reports that last year at the St. Clair Hospital a woman was being put under nitrous oxide-oxygen anesthesia by Dr. Jones for the removal of a fibroid by the late Dr. Leach, whom Dr. Drury was assisting. Just at the beginning of the incision the woman suddenly expired without the slightest warning.

5. Dr. Drury also reports a death from nitrous oxide-oxygen in a man aged 65, whom he operated upon at Washington Courthouse. A

year before the same patient had had a suprapubic prostatectomy under ether by the late Dr. Leach, and went through the operation nicely. Further trouble coming on, Dr. Drury decided to operate through the perineum. Nitrous oxide-oxygen was given by Dr. Rice. In the midst of the operation, which had been going on all right, the patient suddenly expired.

6. Dr. George Williams reports that at the St. Clair Hospital he gave nitrous oxide-oxygen for a hysterectomy for fibroid tumor, about one year ago. The patient went through the operation very satisfactorily, and the surgeon was about to close the incision when the patient suddenly died without any warning whatever; had been doing well up to that moment.

7. Dr. G. L. Saunders tells me that about four years ago, while waiting for a patient of his own to be operated upon at Mt. Carmel, he witnessed an operation on a colored woman, probably 35 years of age, who was suffering from a small fibroid. Nitrous oxide-oxygen was being given, and just as the abdomen was being opened, and before any work on the inside had commenced, the patient suddenly died without any warning. All efforts at resuscitation failed. Dr. Saunders was a stranger in the city, and did not know the anesthetist.

8. Dr. Goodman reports that on March 13, 1913, he opened through the vagina a cul-de-sac abscess. The case was a puerperal one of two week's standing. Nitrous oxide-oxygen anesthesia was given by Dr. Rice. The opening of the abscess took but a moment, but the patient suddenly died on the table.

9. Dr. Goodman reports the case of a young woman, mother of a child two years of age, upon whom he operated for the removal of fibroids. The husband, against the wishes of the surgeon, insisted on the use of nitrous oxide-oxygen. A supravaginal hysterectomy was made in the usual way, the operation being exceedingly easy. There were no adhesions, and the operation took about twenty minutes. The patient had taken the anesthetic beautifully, breathing quietly, and with good color. As the last stitch was being inserted the patient ceased to breathe and the heart stopped. Dr. Rice was giving the anesthetic. Dr. Goodman at once opened the abdomen, massaged the heart through the diaphragm, giving deep injections into the heart of adrenalin, besides using oxygen and artificial respiration, dilating the sphincter ani, etc., but the patient was dead.

10. This patient was a woman operated upon by Dr. Howell for abdominal tumor. She had had one kidney removed some time before, and was known to be suffering from nephritis. Nitrous oxide-oxygen was used. After the operation there was bloody urine, then suppression of urine, then death from uremia. (Had this suppression of urine oc-

curred under ether, the death would undoubtedly have been attributed to the ether; by a parity of reasoning it should be attributed to the nitrous oxide-oxygen, though it is possible that the anesthetic had nothing to do with the death.)

11. Dr. J. M. Thomas reports that about two years ago Dr. Howell operated upon a patient of his, 22 years of age, for chronic appendicitis; had suffered from infantile paralysis, and had some functional heart trouble. Dr. Rice gave the anesthetic. The operation was completed, and Dr. Howell had left the room, when suddenly the patient went bad, and apparently died on the table. Dr. Fletcher and several others were present. Artificial respiration was kept up, he says, for just sixty minutes, when she breathed herself for about ten minutes. The abdomen had been reopened by Dr. Howell, the heart massaged, and adrenalin injected into the heart substance. After breathing for ten minutes respiration stopped and further resuscitation was impossible. He is positive that the death was due to nitrous oxide-oxygen.

12. Mrs. McC., aged 37, had a simple abdominal hysterectomy October 28, 1914. In spite of my own protests and those of her attending physician, she insisted on taking nitrous oxide-oxygen. Dr. Rice administered the anesthetic, which she took beautifully, but just at the completion of the abdominal work, without the slightest warning, the heart's action suddenly ceased and the patient was dead. The heart was at once massaged through the open abdomen, and all the usual measures for resuscitation instituted, but in vain.

13. Mr. B. of Degraff, aged 62, was operated upon February 26, 1914; had been having severe attacks of pain in the region of the gall bladder, and his physicians thought that he had passed gall stones. He had had some bronchorrhea for several years; no kidney trouble. Because of the history and local conditions a gall-bladder operation was advised, and because of the bronchorrhea I advised nitrous oxide-oxygen. There was hypertrophy of the heart, but no valvular lesion could be detected. Pulse regular, and of good volume. The diagnosis was a matter of doubt, but malignancy could not be positively excluded. An incision was made over the gall bladder, which was found distended. At this time the patient was reported by Dr. Rice to be doing badly, and an instant examination showed a pulseless aorta. The heart was at once massaged through the diaphragm, artificial respiration kept up, etc., but all efforts were without avail. Autopsy showed an enlarged heart, but no dilatation.

14. Mr. L., aged 62, was brought to the hospital May 14, 1912, with a diagnosis of peritonitis from appendicitis. His condition when he reached the hospital was bad, as he had got chilled on the train coming

up. In the course of an hour this condition improved, so that he had a good color, and a good heart's action. His condition was such as to indicate extensive infection, and I planned to make a quick incision and put in a drain. For this purpose I thought nitrous oxide-oxygen safer than ether. He took it nicely, but just as the incision was made he died suddenly. After death was determined the incision was extended somewhat, and it was then found that there had been a plugging of the superior mesenteric artery, all the intestines supplied by the artery being black and devitalized. Of course, death would have occurred within a few days, so that the anesthetic death was of no special importance. Within a few months of this time, however, I had two similar cases, one in a young woman of about 30, the other in a man of about 60. Ether was given in both cases, the abdomen opened, the condition determined, and the abdomen at once closed. Both survived the exploration by a day or two.

The above list shows that we have had twelve or more properly perhaps thirteen, deaths from nitrous oxide-oxygen when given for major operations. Careful investigation seems to show that there have been not to exceed twelve or thirteen hundred administrations of this anesthetic for major operations, in Columbus, so that the death rate has been practically 1 per cent.

[That some patients have had narrow escapes from death is shown by several cases that have been reported to me. Thus Dr. Kahn, of our local Board of Health, reported a case in which a stout, healthy man was being operated upon for a simple perineal abscess. The anesthetic was being given by Dr. I. W. Jones, a dentist, who claims to have had a very large and entirely successful experience as a nitrous oxide-oxygen anesthetist. The patient suddenly went to the bad, according to Dr. Kahn, and all thought that death was certain, but he finally rallied and survived. Dr. Andrews Rogers reports a case which he saw at Mt. Carmel, the nitrous oxide-oxygen in that case being given by the same administrator. The patient seemed to be doing well, when suddenly she ceased to breathe and was apparently dead. After twenty minutes of vigorous effort at resuscitation she rallied. The doctor looked at his watch and knows the exact time consumed. Dr. J. E. Brown, one of our leading specialists, tells me that he has used nitrous oxide oxygen in about eight cases for the removal of tonsils and adenoids, Dr. Jones being in each case the anesthetizer. Some of these had been given at the Protestant Hospital, the others in his own office. He found the anesthesia very unsatisfactory, the patient being so awake as to feel the pain and suffer accordingly, or so cyanosed as to be apparently in imminent danger of death. Dr. I. B. Harris states that nitrous oxide-oxygen had been given,

so far as he can learn, but once at St. Francis Hospital, the surgeon being the late Dr. Barnhill. He quotes the Sister as saying that while death on the table seemed imminent, the patient managed to get out alive. Dr. Jones was the anesthetist.]

Without persistent effort on my part, few of the nitrous oxide-oxygen deaths in Columbus would have been unearthed. I have made no canvass of the situation in other cities of the State, but incidentally know of several deaths in Cincinnati, Cleveland, Toledo, and Akron. In one of the Cincinnati cases the anesthetist was a specialist of twenty years' experience, who had spent two weeks at Lakeside to familiarize himself with the details of the nitrous oxide-oxygen anesthesia. He had administered the combination successfully in a number of cases, but in this particular case (nephrotomy for stone) he had objected to the giving of the gas as he preferred ether, but the surgeon insisted and he complied. The anesthesia went off beautifully, the operation had lasted about thirty minutes, and was just about completed when the patient suddenly died. (Personal communication from the anesthetist, Dr. Leroy S. Colter.)

Under date of June 1, 1916, in response to a letter of inquiry following a newspaper announcement, Dr. H. H. Wiggers of Cincinnati writes me that the death of a married woman in his practice "occurred suddenly, without any warning. There was simply a cessation of the heart beat. We cannot account for the death." No details of operation given, but the anesthetist was a specialist, with an experience of about eleven hundred cases of nitrous oxide-oxygen anesthesia.

Gwathmey, concerning whose skill and experience there can be no doubt, under date of November 6, 1915, gives me a personal report of a death which he had had a few days before, and which he expects to report at an early date. This death under nitrous oxide-oxygen, he says, "was absolutely uncalled for, and has changed my ideas of the safety of nitrous oxide-oxygen entirely. . . . I believe if I had given him ether the man would have been alive today."

In commenting on autopsy No. 3394, Dr. Hugh Cabot, of the Massachusetts General Hospital ("Case Reports" received January 16, 1916), says in regard to a death from nitrous oxide-oxygen, that "during the operation the anesthetist remarked that the breathing was slow, but the color of the skin normal. The color of the blood was at no time observed to be unusual. At the point last described the anesthetist observed that the respiration had stopped. Artificial respiration was started and kept up for forty minutes steadily, with the liberal use of oxygen. . . . This was an anesthetic death due to gas and oxygen anesthesia." The anesthetist in this case was Dr. Freeman Allen, chief

of the department of anesthesia, and consulting anesthetist to the Massachusetts General Hospital and Children's Hospital.

Ochsner says that he made a careful test with one hundred successive cases of nitrous oxide anesthesia, compared with a similar number of ether anesthesias by the drop method. He says he "found no difference in the course of the anesthesia, nor in the comfort of the patient, but there was a little more bronchial irritation following operation when nitrous oxide-oxygen gas had been used." (Absence of bronchial irritation is one of the strong claims made by those who advise this anesthetic.) The method, he says, he found cumbersome, and, therefore, permanently abandoned it. The only special value that he attributed to it is a "slight advertising value which the method undoubtedly possesses." He then speaks of the addition of oxygen to the nitrous oxide gas, and claims for it the same advertising value as for the other, but "possibly to a somewhat greater degree." He then speaks of some of the disadvantages which it has, and finally concludes as follows: "For some time to come there will be a certain amount of advertising advantage, but as soon as this has been dissipated through the fact that every one will be prepared to administer this form of anesthesia, its drawbacks must become apparent as compared with its advantages."

[Dr. Ochsner thus places considerable emphasis on the advertising campaign which has been used for nitrous oxide-oxygen. We have had this in a marked degree in Columbus, though from what I can learn no more extreme than has been the rule in other cities. We have had extensive write-ups in the newspapers, even with illustrations of the apparatus, and with flowery eulogies of the comfort, convenience, and absolute safety of this new anesthetic. These newspaper "stories" usually include the names of both surgeon and anesthetist; hence both are equally interested in suppressing all information as to disastrous results.]

[There is, however, I think, another view of the case not mentioned by Dr. Ochsner, and that is, the financial results which the nitrous oxide specialist gets from this anesthetic. In Columbus the usual fee for an ordinary anesthesia by ether or chloroform is five dollars, but the charge for nitrous oxide-oxygen is from ten to twenty-five dollars. Possibly a few whiffs may be given for less than ten dollars, but in other instances the charge exceeds the maximum which I have stated. Of course, it is well known that gas is more expensive than ether or chloroform, but as the cost of the gas is given as less than two dollars an hour of administration, the expense in individual cases amounts to very little while the cash returns are large.]

[I had all along suspected that in the background of the campaign for this new anesthetic there was a mercenary motive, but any lingering

doubt which I might have had vanished when at a recent meeting of our Academy of Medicine, at which the subject of anesthetics was being discussed, a visiting specialist from Cincinnati stated that an anesthetist could not make a living if he limited his work to ether and chloroform.]

[As an honest proposition it would seem that if five dollars per anesthesia for ether and chloroform is not sufficient, there should be a manly increase in charge rather than that the anesthetist should resort to a more unsatisfactory and more dangerous anesthetic agent in order that he may secure a larger fee. Such an attitude is contrary to all the traditions of our profession, and when once known to the public can only bring anesthetists and the profession into disrepute.]

In Columbus nitrous oxide-oxygen deaths have occurred at the hands of three administrators, all of whom are looked upon by their friends as thoroughly competent specialists. Deaths have occurred to each in frequency just about in proportion to the number of administrations for major operations. Dr. Rice has lost the largest number, but has undoubtedly had more administrations in major work. Dr. Howell, who has made a personal study of nitrous oxide-oxygen anesthesia, and has watched many such administrations at Lakeside, Cleveland, and who has until recently used nitrous oxide-oxygen almost exclusively, tells me that he regards Dr. Rice as the most skillful nitrous oxide-oxygen anesthetist in the State. The anesthetist who had but one death had given this anesthesia in about fifty cases.

We are told by many that while deaths on the table are exceedingly rare from ether, many deaths occur later from pneumonia, which should be charged up to ether. Those who make these statements should certainly read Rovsing (p. 85), who considers this matter briefly but very forcibly: "It is astonishing, moreover, that the misconception that ether has a harmful influence on the pulmonary passages still exists, because in reality the correctness of this view has long since been refuted, both clinically and experimentally. From a clinical point of view it was Mikulicz's report in 1898, which drove the nail home. Mikulicz, on account of the somewhat frequent occurrence of postoperative pneumonia, had deserted ether and taken up chloroform, in the belief that the pneumonia was due to the irritating effect of the ether. To his surprise, however, it appeared that the cases of chloroform narcosis were followed by a still greater percentage of postoperative pneumonia. He, therefore, decided to give up narcosis by inhalation entirely, and thereafter employed local anesthesia in all operations, even the major ones. But, to his yet greater surprise, the result was that the lung complications, far from decreasing, increased to a considerable extent; with 114 laparotomies he had no less than twenty-seven lung complications.

Naturally, this experience overthrew the old conception that postoperative cases of pneumonia were 'narcosis pneumonia.' One curious fact should long ago have aroused the surgeon's suspicions; namely, that almost every 'narcosis pneumonia' manifested itself after laparotomy, while it is extremely rare to find pneumonia following operations on the extremities, thorax, and head. To what was this strange occurrence due? Surely, in the main, to two circumstances: (1) That peritoneal infection is conveyed to the lungs partly by way of the lymph vessels and venous blood, and partly by embolism, and (2) that a patient with a laparotomy wound dares not cough or breathe freely, inasmuch as this involves pain in the wound. If, therefore, the patient is already suffering from bronchitis, or if an infection of the lungs sets in, the development of pneumonia is greatly favored by the deficiency in expectoration and lung ventilation.

"It has been proved experimentally with animals—and I myself have substantiated the fact by experiments—that ether does, indeed, occasion increased salivation in the salivary glands of the mouth, but that the air passages—larynx, trachea, and bronchi—are not irritated at all, even when the animals are killed by administering ether through a tracheotomy tube until they are dead. Therefore, the only way in which ether narcosis *per se* can cause pneumonia is by aspiration of accumulated saliva in the throat. This, however, is always due to some technical error in the narcosis, for saliva should not be allowed to accumulate in the throat to any extent. . . . If, therefore, it is proved that the ether fumes do not in any way irritate the main air passages, one should admit that the other assertion must also be wrong. I mean the assertion that ether is contraindicted in patients suffering from lung disease: emphysema, bronchitis, bronchiectasis, abscess of the lung, etc."

I have had ether administered in very many thousands of cases; years ago by use of the old-fashioned cone, then the Allis inhaler, and now for a number of years by some form of the drop method. I have never had a death on the table from its administration. I cannot recall a single death from postoperative pneumonia. I have had two or perhaps three deaths from suppression of the urine. It is possible, perhaps probable, that this suppression was the result of the action of the ether on the kidneys, and yet we all know that deaths from suppression occur in cases in which no anesthetic whatever has been given, and earlier in this paper I have referred to one death in which suppression of the urine followed the administration of nitrous oxide-oxygen.

Nitrous oxide-oxygen has a field of usefulness to which it should be strictly limited. It can be used for very brief operations, as it has been for many years in the extraction of teeth. It is also probably the safest

anesthetic to use, as suggested by Ochsner, in cases of acute pulmonary congestion, or of acute nephritis. With these exceptions, which make its field a very limited one, nitrous oxide-oxygen should be looked upon as the most dangerous anesthetic that can be used, even in the hands of the most experienced.

[Some three years ago I asked two young men who were about to make a pilgrimage to Cleveland, to the shrine of Lakeside Hospital, to inquire, not of the surgeons who were known to favor this anesthetic, but of the young doctors who are always found hanging about such an institution, as to the general opinion of nitrous oxide-oxygen. Both came back with the report that these young men promptly stated that nitrous oxide-oxygen was the most dangerous anesthetic that could be used.]

REFERENCES.

1. Rovsing: Abdominal Surgery, 1914.
2. Gwathmey: Anesthesia, 1914.
3. Connell: Art. Anesthesia in Johnson's Operative Therapeusis.
4. Luke: *N. Y. Medical Journal,* January 20, 1915.
5. Ochsner: Manual of Surgery, 1915.

—*N. Y. Medical Record,* July 29, 1916.

NOTE.

The above article was read before the Tenth District Medical Society at its Chillicothe meeting, and was sent for publication to the editor of the **Journal of the American Medical Association.** It was promptly returned with certain criticisms. The parts objected to, as nearly as I could determine them, were cut out, and the manuscript re-submitted, but only to be again promptly rejected. It was then sent in its elided form to the editor of the **New York Medical Record,** who promptly published it.

At least two other articles adverse to nitrous oxide-oxygen anesthesia have been submitted to the **Journal of the American Medical Association,** only to be rejected. One of these, by a prominent obstetrician of Kansas City, was later published in the **American Journal of Obstetrics,** and the other, by a New York anesthetist, in the **Medical Record.** Several articles lauding this anesthetic have appeared in the Association Journal, but so far as I can learn none criticising it have ever been published by it.

The average member of the A. M. A. probably thinks that its Journal is a forum for the discussion of all subjects involving professional matters, but instead it seems to be conducted as a sort of private organ of the editor, who admits only such articles as fit his procrustean bed.

In reprinting the paper those parts which were cut out are reproduced in [ ], so that the paper as it now appears is the paper as it was originally read.

J. F. B.

THE DANGER OF NITROUS OXIDE-OXYGEN.

To the Editor of the Medical Record:

Sir:—In your issue of January 13, 1917, is an interesting article by Dr. Seybold, an anesthetist of Denver, Col., in which he reports some half dozen bad cases in which nitrous oxide-oxygen was administered without fatality. That ether would have been fatal in any one of the cases would undoubtedly be questioned by expert ether anesthetists. He also reports two deaths under nitrous oxide-oxygen. Of one he is unable to give particulars, but gives full details of his own. Those of us who are familiar with Cabot's occasional strictures on ill advised surgery, as they appear from time to time in his comments on autopsies as issued weekly by the Massachusetts General Hospital, can readily imagine the causticity of his remarks on the inadvisability of operation in the case reported. Nevertheless, it is an open question whether the patient would not have survived the immediate operation under the stimulating effect of ether inhalations, which he failed to do under the nitrous oxide-oxygen.

In an article which I contributed to the *Medical Record* in its issue of July 29, 1916, I reported a list of fourteen deaths, in practically all of which there could be no question as to the direct fatal influence of nitrous oxide-oxygen. I also reported a number of other deaths occurring in different cities. Furthermore, and this is a matter of prime importance, I reported that in published or personal communications several surgeons or nitrous oxide-oxygen anesthetists of national reputation had admitted knowledge of a number of deaths, namely, Miller, 18 deaths; Rovsing, 13 deaths; Teter, 26 deaths, nine of which occurred in Cleveland; Gwathmey, 20 to 40 deaths. Very few of the above deaths have been reported.

I have noted with interest and satisfaction that Bloodgood, in the December issue of *Progressive Medicine* (pages 23-5), announces that at the Johns Hopkins, where nitrous oxide-oxygen was used so enthusiastically a very few years ago, they have within the past eighteen months gradually returned to ether. He particularly condemns nitrous oxide-oxygen in cases in which the blood pressure is high. In addition to the discontinuance of the nitrous oxide-oxygen in his own clinic he adds (p. 242) "the clinics which first began the routine employment of gas-oxygen anesthesia instead of ether are beginning to swing back to ether."

In the Mayo clinic, as stated in my article, after some 1,400 administrations of nitrous oxide-oxygen, with no reported fatality, that anesthetic was abandoned in favor of ether.

I think the profession and laity should unite in demanding of anesthetists, who know of these unreported deaths, immediate and full report of their mortality, that the actual status of this anesthetic agent may be positively determined. Possibly some such communications have been sent to medical journals, but have been denied publication. I know of three articles unfavorable to nitrous oxide-oxygen which have been refused publication by the *Journal of the American Medical Association,* though it has published a considerable number of articles highly laudatory of that anesthetic.

Columbus, Ohio. J. F. BALDWIN, M. D.

—*N. Y. Medical Record,* March 3, 1917.

SHOCKLESS OPERATIONS.

The clinical picture of shock, following injury or operation, is familar to every experienced physician. Various theories have been advanced to explain the phenomena connected with this condition, but none of them has been accepted as entirely satisfactory. The latest theory is that of Crile, based upon certain findings in his private laboratory. Unfortunately, however, these findings have not been corroborated by workers in other laboratories, whose reports, on the contrary, so far as published, have been antagonistic to his theory.

While it is universally conceded that excessive hemorrhage is the most common cause of shock, it must be admitted that certain traumatisms may produce the same clinical symptoms,* but just how these symptoms are produced is a question which has not been answered. If Crile's theory is correct, then more or less shock should be found in all extensive operations in which no precautions are taken to block by injections the nerves connecting the field of operation with the brain centers. If shock frequently appeared when no injections were used, and did not appear when they were used, the problem would be greatly simplified.

The promptness and unanimity with which operators who have adopted anoci-association attribute absence of shock in their operations to the use of the injections, would be purely amusing did it not present such a pitiful illustration of illogical thinking. Crile's theory is beautifully simple, and, presented in his captivating way, it naturally leads superficial thinkers astray, so that their reasoning assumes the *post hoc ergo propter hoc* circle, while a more logical mind might regard it all as purely a *non sequitur*.

A rude operator who accomplishes his end largely by mere brute force, who is indifferent as to hemorrhage, and careless as to protection of his field of operation, will doubtless meet with much shock; and if he later learns gentler methods, is more cautious as to hemostasis, and more careful in protecting the operative field, he will find the shock disappear, and if in the meantime he has been induced to use the so-called "anoci-association" he may be deluded into attributing

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* "The most common cause of so-called surgical shock is collapse from loss of blood, and traumatism of important structures in hasty attempts to control hemorrhage."—W. J. Mayo, "Jour. A. M. A.," March 20, 1915.

all his improvement to the latter while ignoring the former essentials. Crile is a fine anatomist, an accomplished surgeon, and a skillful operator, and I suspect that in his modesty he has mistaken the results of his own skill for the results of his "anoci-association."

While fear and anxiety on the part of the patient are undesirable, it is very doubtful if those conditions alone will produce shock. At least out of an experience of nearly ten thousand abdominal operations I have never met with a single instance, although I have operated on patients who were almost frantic from fear, with a resulting high pulse rate, and even an elevation of temperature which could be explained by nothing in the physical condition; yet after the operation (an hysterectomy perhaps) temperature and pulse have at once dropped to normal, and the patients have made an absolutely smooth convalescence. Nevertheless, the experienced surgeon will naturally possess a hopeful mental attitude, and will impart more or less of his own optimism to his patient. In that way he will change her attitude of fear to one of hope and courage. In these cases the administration of scopolamin-morphin, an hour before the giving of the anesthetic, is very helpful, and many patients, although really awake when the anesthetic is commenced, have no recollection of it, and when coming out from the anesthesia a number of hours later can hardly be convinced that an operation has been performed.

After discussing this matter with a colleague in December, I decided to take particular notice of my own operative cases for the next month or two, and see what, if any, shock occurred from operations *per se*. In my regular routine work during sixty days (January 1-March 1) I performed 120 major operations. During this time I did many minor operations, but in none of the operations, whether major or minor, did there appear any suggestion of that combination of symptoms which we call shock.

The anesthetic used in all the cases was the drop-ether, preceded (except in children) by a hypodermic injection of 1/6 grain morphin and 1-100 grain scopolamin. This is a combination I have used for many years, and in thousands of cases, and with only the most gratifying results.

My patients are all private patients, and during convalescence are looked after daily by myself. They are seen during the few days following operation not less than twice a day, oftener if necessary, and then once a day during the later convalescence.

Operations are performed as rapidly as is consistent with thoroughness, and the patients usually sleep quietly for an hour or more after returning to their rooms. Post-operative nausea occurs in some cases,

but in others there is no complaint whatever. The same is true of gas pains, though fewer escape the latter than escape the nausea. Care is taken in closing the incisions, that the parts are brought into apposition, but not so tightly as to interfere with either the nerves or blood-vessels in the line of suture. Too great tension is, I think, responsible for much local post-operative pain. As a result, in a number of cases patients who have had abdominal operations performed without their knowledge have suspected nothing of it until the first dressing at the end of the week. Patients usually greet me on the morning after operation with a pleasant smile, and except that they may have had some stomach disturbance express themselves as feeling quite well; are, indeed, generally pleasantly disappointed by the absence of disagreeable sensations.

That the injection of urea and quinine into the field of operation so obtunds sensibility as to relieve some of the post-operative pain about the wound is undoubtedly true; but if care is taken in adjusting and closing the wound, bringing the parts into snug but not too tight apposition, patients will have little cause for complaint. It is notorious that post-operative wound infection is much more common in cases in which the quinine and urea have been used than in those in which the usual closure is made, and many surgeons who have used this combination for purposes of local anesthesia have complained of infection and even sloughing of the edges of the incision. Whether the increased liability to infection is due to the drugs themselves, or to trophic changes due to interference with innervation, has probably never been positively determined; but the fact remains, and most patients would prefer to have the slight increase of his discomfort from the non-use of the quinine and urea than to suffer from the greater and more prolonged disturbance connected with the post-operative infection.

At the present time we are hearing very much about "twilight sleep" in connection with obstetrical practice, and those who use it claim that, owing to the absence of pain and anxiety, the patients are remarkably free from the depressing effects of the confinement, and are ready to be up and around, if permitted, within forty-eight or even within twenty-four hours. If the theory of brain-cell exhaustion from unfelt pain is correct, these patients should all show more or less signs of shock, but the advocates of the method claim that the reverse is true.

A number of years ago a head nurse, who came to the Grant Hospital from an institution in the East, repeatedly expressed her surprise at the absence of shock which she found in our operative cases. In talking with her I found that the surgeons she had previously served had been in the habit of taking an hour or two to make a twenty-

minute operation; they had been rather indifferent to hemorrhage and to protecting the field of operation, and they had not employed the delicacy of touch in intra-abdominal work which due respect for that field of operation demands; hence the presence of shock there and its absence here.

There is undoubtedly a large number of surgeons in the country who could from their records more than duplicate my report of shockless cases. I have talked with many such surgeons, and they tell me that they do not have shock in their work, except under conditions which have been previously mentioned. Shockless operations are the rule, the others the rare exception.

Within the last few weeks I have known of two deaths from shock, one from an exploratory incision with considerable manipulation of the parts, the other from an abdominal hysterectomy for fibroid. In both the operator, who is a firm believer in anoci-association, had used his local injections and had administered nitrous oxide-oxygen instead of ether. The contrast was painful, but the pain was not mine.

In my abdominal operations the appendix is practically always removed as a routine procedure, even if it presents no gross evidence of disease. In the appended report the appendix was so removed, though it does not appear in the printed record.

I am a firm believer in the importance of decayed teeth in the production of many constitutional disturbances, and consequently in all cases my anesthetist at the completion of the operation examines the teeth, and if old roots or rotten teeth are discovered which are past saving by the dentist, they are at once extracted; and many a patient has really shown more gratitude for the removal of these old teeth than for the removal of the pathology for which the operation was undertaken.

In operating for uterine cancer, unless there are positive contra-indications, I perform the usual radical Wertheim operation, with preliminary ligation of both internal iliacs as recommended by Cobb. The ligation of these vessels renders the operation almost bloodless, and this hemostasis obviates shock.

In operating for cancer of the breast, the usual "dinner-plate" operation of Rodman is ordinarily pursued, with a thorough dissection of the axilla, but saving enough of the pectoralis major to protect the axillary vessels, as recommended by Murphy. In many of these cases it is necessary to make transverse incisions, with undermining of the opposite breast, so as to bring it over to cover the raw surface.

In cases of gangrenous appendicitis, temporary drainage is usually advisable. This is done by making a stab incision in close proximity

No.	Initials.	Sex.	Age.	Operations.
1.	E.G.A.	M.	36.	Pylorectomy.
2.	C.L.A.	F.	38.	Appendectomy (gangrenous-drainage).
3.	A.L.A.	F.	44.	Supravaginal pan-hysterectomy.
4.	C.F.A.	F.	45.	Supravaginal pan-hysterectomy.
5.	H.A.B.	M.	35.	Resected cecum; lateral anastomosis.
6.	S.B.	M.	12.	Estlander operation.
7.	E.B.	F.	36.	Cholecystectomy.
8.	J.W.B.	F.	41.	Appendectomy.
9.	E.B.	F.	43.	Supravaginal pan-hysterectomy.
10.	R.B.	M.	25.	Appendectomy.
11.	C.C.	M.	64.	Cancer of neck. Extensive dissestion.
12.	C.C.	F.	45.	Cancer of breast and axilla: double ovariotomy: double salpingectomy.
13.	R.V.C.	F.	50.	Radical hysterectomy for cancer.
14.	K.C.	F.	27.	Abdominal pan-hysterectomy (saved ovaries).
15.	A.DeY.	F.	40.	Supravaginal pan-hysterectomy.
16.	F.H.D.	F.	28.	Appendectomy.
17.	W.A.D.	F.	27.	Abdominal pan-hysterectomy (saved ovaries).
18.	H.D.	F.	20.	Appendectomy: shortened round ligaments.
19.	C. E.	F.	21.	Appendectomy (gangrenous-drainage).
20.	H.E.F.	F.	40.	Amputated cervix; perineorrhaphy; doub. salp.; short. r. ligs.; cholecystectomy.
21.	Z.F.	F.	64.	Wertheim operation for procidentia.
22.	E.H.G.	M.	23.	Appendectomy.
23.	H.W.G.	F.	39.	Supravag. pan-hyst.; doub. intest. anastomosis for tuberculous strictures.
24.	H.W.G.	F.	39.	Four intestinal anastomoses for tuberculous strictures.
25.	O.O.G.	F.	44.	Abdominal pan-hysterectomy; posterior colporrhaphy; perineorrhaphy.
26.	C.G.	F.	58.	Cancer of breast and axilla.
27.	E.G.	M.	29.	"General purulent peritonitis" (appendiceal). Fowler position, etc.
28.	M.G.	F.	19.	Appendectomy.
29.	R.N.G.	F.	45.	Supravaginal pan-hysterectomy.
30.	R.L.H.	M.	24.	Double inguinal hernia.
31	C.C.H.	M.	2.	Macroglossia: resection of tongue.

No.	Initials.	Sex.	Age.	Operations.
32	V.H.	F.	18.	Appendectomy.
33.	F.H.	F.	33.	Abdominal pan-hysterectomy (saved one ovary).
34.	W.H.	F.	36.	Exploratory incision. Inop. cancer of mesentery. Double salpingectomy.
35.	L.H.H.	F.	28.	Amp. cervix; post colporrhaphy; perineorrhaphy; d. salp.; short. r. ut. sac. ligs.
36.	D.H.	F.	34.	Supravag. pan-hyst. (saved one ovary).
37.	E.J.H.	F.	30.	Supravaginal pan-hysterectomy (saved both ovaries).
38.	I.H.	F.	21.	Appendectomy.
39.	C.H.	F.	37.	Abdominal pan-hysterectomy.
40.	L.L.H.	F.	66.	Wertheim operation for procidentia.
41.	E.C.A.	F.	53.	Abdominal pan-hysterectomy. Cholecystectomy).
42.	M.E.K.	F.	36.	Supravaginal pan-hysterectomy (saved one ovary).
43.	S.W.K.	M.	37.	Inguinal hernia; resected omentum.
44.	C.K.	M.	21.	Appendectomy.
45.	W.S.K.	M.	49.	Appendectomy (gangrenous-drainage).
46.	J.W.K.	F.	32.	Abdominal pan-hysterectomy. (Puerperal-abdominal and vaginal drainage).
47.	E.S.K.	M.	58.	Cholecystectomy. Appendectomy.
48.	J.G.K.	F.	60.	Wertheim operation for procidentia.
49.	F.P.L.	F.	45.	Ovariotomy and salpingectomy.
50	W.R.L.	F.	34.	Amp. cervix; post. colpor.; perineorrhaphy; doub. salping.; short. ligaments.
51.	G.M.L.	F.	51.	Supravaginal pan-hysterectomy. Cholecystectomy.
52.	F.L.	F.	16.	Tuberculous peritonitis.
53.	J.F.L.	F.	78.	Large ovarian cyst. Shortened ligaments.
54.	J.L.	F.	59.	Radical pan-hysterectomy for cancer.
55.	H.M.	F.	41.	Double ovarian papillomas.
56.	C.F.M.	F.	42.	Cancer of breast and axilla.
57.	J.S.M.	M.	23.	Appendectomy (gangrenous-drainage).
58.	C.H.M.	M.	42.	Pylorectomy. Gastro-enterostomy.
59.	J.C.M.	F.	33.	Abdominal pan-hyst. (saved ovaries). Perineorrhaphy. Amputated breast.
60.	J.M.	F.	30.	Abdominal pan-hysterectomy. Posterior colporrhaphy. Perineorrhaphy.
61.	H.R.M.	F.	35.	Abdominal pan-hysterectomy. Cholecystectomy. Posterior colporrhaphy. Perineorrhaphy.
62.	C.M.	F.	25.	Cesarean section.

63.	C.E.M.	M.	34.	Appendectomy.
64.	A.M.	F.	49.	Ovariotomy (large tumor).
65.	C.V.M.	F.	51.	Supra-vaginal pan-hysterectomy. Cholecystectomy.
66.	E.S.M.	F.	24.	Shortened round ligaments; elevated utero-vesical fold.
67.	J.M.M.	F.	58.	Ovarian dermoid.
68.	L.M.	M.	16.	Right inguinal hernia; appendectomy.
69.	A.M.	M.	22.	Appendectomy.
70.	M.M.	F.	41.	Sarcoma of breast.
71.	J.R.M.	F.	55.	Radical hysterectomy for cancer.
72.	I.M.	F.	46.	Double ovariotomy; double salpingectomy; shortened ligaments. Cholecystectomy.
73.	W.M.M.	M.	29.	Inguinal hernia.
74.	M.N.	F.	53.	Ovarian papilloma with metastases.
75.	F.P.	F.	27.	Myomectomy. Shortened ligaments.
76.	S.P.	F.	40.	Double tubo-ovarian abscesses (drainage).
77.	E.P.	F.	29.	Amputated cervix; ovariotomy; shortened ligaments.
78.	L.P.	F.	43.	Abdominal pan-hysterectomy.
79.	H.P.	F.	14.	Appendectomy.
80.	J.R.P.	F.	35.	Amputated cervix; salpingectomy; shortened ligaments.
81.	A.F.P.	F.	44.	Supra-vaginal pan-hysterectomy.
82.	W.M.P.	F.	42.	Radical hysterectomy for cancer.
83.	W.R.	F.	41.	Abdominal pan-hysterectomy.
84.	F.R.	F.	30.	Double tubo-ovarian abscesses; abdominal-vaginal drainage.
85.	N.R.	F.	22.	Appendectomy.
86.	H.L.R.	F.	35.	Supra-vaginal pan-hysterectomy (saved both ovaries).
87.	F.M.R.	F.	29.	Hip-joint amputation for elephantiasis.
88.	S.G.R.	F.	29.	Abdominal pan-hysterectomy (saved both ovaries).
89.	G.H.R.	M.	30.	Inguinal hernia.
90.	R.W.S.	F.	24.	Abdominal pan-hysterectomy (saved both ovaries).
91.	A.S.	F.	29.	Shortened uterine ligaments.
92.	Z.S.	F.	34.	Shortened uterine ligaments.
93.	W.L.S.	F.	34.	Supra-Vaginal pan-hysterectomy (saved one ovary).
94.	S.H.S.	F.	52.	Gastro-enterostomy. Resected pylorus. Anchored right kidney.

No.	Initial.	Sex.	Age.	Operations.
95.	W.H.S.	F.	46.	Supra-vaginal pan-hysterectomy.
96.	F.D.S.	F.	53.	Radical hysterectomy for cancer.
97.	M.A.S.	F.	40.	Abdominal pan-hysterectomy.
98.	C.S.	F.	23.	Supra-vaginal pan-hysterectomy (saved both ovaries).
99.	R.G.S.	F.	25.	Shortened uterine ligaments.
100.	W.H.S.	F.	43.	Cholesystectomy. Umbilical hernia. Lipectomy.
101.	M.S.	F.	55.	Radical hysterectomy for cancer.
102.	E.T.	F.	23.	Double pyosalpinx.
103.	A.T.	F.	60.	Cholecystectomy (cancer of liver).
104.	C.W.T.	M.	45.	Resection of transverse colon for cancer; lateral anastomosis.
105.	J.M.T.	F.	28.	Abdominal pan-hysterectomy (saved one ovary). Post. colporrhaphy. Perineorrhaphy.
106.	J.C.T.	F.	63.	Irreducible inguinal hernia.
107.	M.T.	F.	26.	Double salpingectomy: shortened ligaments.
108.	E.E.T.	F.	26.	Resected ovary.
109.	M.V.	F.	53.	Radical hysterectomy for cancer.
110.	W.W.V.	F.	50.	Wertheim operation for procidentia. Cholecystectomy.
111.	C.W.	M.	17.	Appendectomy (gangrenous-drainage).
112.	E.E.W.	F.	26.	Supra-Vaginal pan-hysterectomy (saved one ovary).
113.	L.W.	F.	27.	Double salpingectomy. Shortened uterine ligaments.
114.	C.W.W.	M.	33.	Appendectomy.
115.	J.W.	F.	57.	Cholecystectomy. Nephrectomy (hypernephroma). Myomectomy.
116.	L.W.	M.	4.	Inguinal hernia.
117.	D.J.W.	F.	41.	Cancer of breast and axilla.
118.	L.Y.	F.	28.	Abdominal pan-hysterectomy (saved both ovaries).
119.	M.Y.	F.	18.	Double salpingectomy; shortened uterine ligaments. (Puerperal infection).
120.	E.Z.	F.	22.	Amputation at knee.

to the anterior-superior spine, and passing from within out a cigarette drain, together with the catgut ligatures which have been used and have been left long. By a little traction on these ligatures the cecum can usually be so adjusted as to lie in contact with the wick, so that there will be no post-operative ileus from adhesions involving the small bowel. The main incision is closed thoroughly so as to obviate, if possible, post-operative hernia.

The case of macroglossia (No. 31) is reported as a major operation, because of the special feebleness of the infant, which, owing to the large size of the tongue and its protrusion, had become so weakened by lack of food as to render amputation of the tongue particularly hazardous.

The hip-joint amputation (No. 87) was in a slender and anemic woman, whose leg was nearly as large as her body. I have performed in all about ten hip-joint amputations, using the Wyeth method, without shock and without mortality.

Deaths.—The deaths reported are all that took place following these operations, and no patients were hurried out of the hospital to improve the statistics. Statistics are entirely unreliable unless we know just how they are obtained. Some well-known surgeons exclude from their reports a considerable number of cases who have died after operations, but in which death was not due to the operation itself. Such methods of securing statistics are very unreliable, since the personal equation is so uncertain, and the results may be quite fantastic.

Number 24. This patient was first operated upon under Number 23. She was then found to have uterine hyperplasia, with a mass of pelvic adhesions, requiring a supravaginal pan-hysterectomy. In addition she was suffering from pronounced intestinal obstruction which was found due to seven strictures of the small bowel, these strictures having resulted from tuberculous ulcerations. At the first operation the three tightest strictures were cared for by an intestinal anastomosis above and below the strictures. The condition of the patient was then such as to render it unsafe to treat the four remaining strictures, which were not quite so tight. She made an excellent recovery, and three weeks later the other four strictures were relieved by lateral anastomoses. She went through this operation nicely, but at one point, because of the condition of the intestinal wall, a cigarette drain was inserted. Here, as feared, an intestinal fistula formed, which after discharging freely for a few days closed down, until at the time of her death some weeks later there was little discharge. She died of exhaustion from tuberculosis some three weeks after the second operation.

Number 58. This patient had had serious stomach trouble for ten years, worse of late, with a strong suspicion of malignancy implanted on gastric ulcer. The ulcer was found in the posterior wall of the pylorus, with much exudate, thoroughly organized. A pylorectomy was done in the usual way, but with great difficulty on account of the extensive adhesions and exudate. The man did well after the operation for forty-eight hours, then became suddenly restless, with poor pulse, air-hunger, absence of second heart sound, and the usual symptoms of heart clot. He died in a few hours.

Number 74. This patient was in desperate condition at the time of the operation, which was for the removal of an ovarian tumor with twisted pedicle, which was found to be papillomatous, with extensive metastases involving the upper abdomen. She went through the operation very satisfactorily, and for several days bid fair to make an excellent operative recovery, but died suddenly on the fifth day. Immediate cause of death not found at necropsy.

Number 83. This was a case of chronic metritis with extensive adhesions. While apparently convalescing well, she died suddenly on the seventh day, probably from pulmonary embolism.

Number 100. This patient was operated upon for umbilical hernia and gall-stones. She was very fleshy, weighing about 300 pounds, and in closing the umbilical hernia a lipectomy was done for her relief. She went through the operation easily, but died suddenly, as though from embolism, on the second day.

Number 101. This patient was operated upon for advanced cancer of the uterus, the usual radical operation with ligation of the internal iliacs. She did well for a week, but then commenced failing and died of exhaustion about three weeks after her operation. The disease was found to be more extensive at the time of her operation than had been anticipated, and should have been regarded as inoperable.

Number 103. This was a difficult cholecystectomy for gall-stones, with extensive exudate and a cancerous development involving the deeper structures, and metastasis to the liver. She was greatly relieved by the operation with its drainage of the bile ducts, but died of exhaustion some weeks later.

Conclusions.

1. Crile's laboratory findings, showing exhausted brain cells, on which he bases his theory of shock, have not been confirmed by independent laboratory workers, and such confirmation is clearly very desirable.

2. Operative shock, from a practical standpoint, is the result of hemorrhage, or of undue and usually unnecessary traumatism in the field of operation.

3. Prolonged operations, by the long exposure of the field of operation and the prolonged anesthesia, materially increase the liability to shock, so that a moderate hemorrhage, which would not produce any ill-effects in a short operation, may result in marked shock.

4. Any surgeon who operates rapidly, who guards against unnecessary hemorrhage, and who avoids brutality in handling tissues, will have shockless operations.—*Amer. Jour. of Surgery,* Aug., 1915.

THE TECHNIC OF ABDOMINAL HYSTERECTOMY.*

The technic of hysterectomy has been a matter of steady evolution. The principles of the operation have been long established, but there are little details which have not been brought out and which may add materially to the satisfaction of the operation and to its safety. Most operators have felt that an abdominal panhysterectomy was considerably

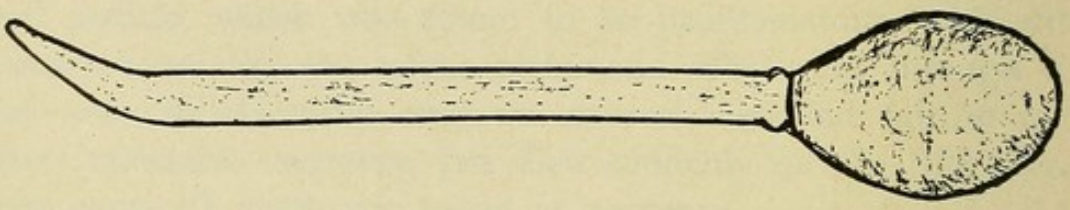

FIG. 1.—Glass tube with bulb for injecting iodine into the uterus. (½ size.)

more difficult, and had a materially higher mortality, than the subtotal or supravaginal operation. By the technic which I have finally developed, as the result of 2018 operations for the removal of the uterus, I feel that the complete removal is almost as simple, and fully as safe,

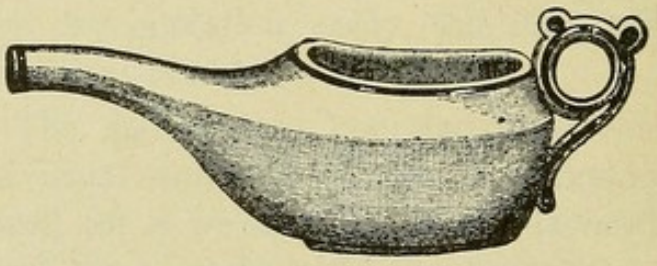

FIG. 2.

as the less complete procedure, while it entirely removes the possibility of malignant changes in the retained cervix, and more or less morbidity from inflammatory or degenerative changes which may be present, or which may occur, in the part that is left behind. The steps of the operation are as follows:

1. Thoroughly wash out the vagina with soap and hot water. This is done when the patient is under the anesthetic, and advantage should be taken of the opportunity to make a more thorough examination of the pelvic organs than was, perhaps, possible without anasthesia. Seize the cervix with a volsella, and fill the uterus with full strength tincture

* Read before the Twenty-ninth Annual Meeting of the American Association of Obstetricians and Gynecologists at Indianapolis, Ind., September, 1916.

of iodine by means of an appliance, made for this purpose, shaped something like a large medicine dropper (Fig.1). The iodine should be applied as well to the outside of the cervix. The cervix, which had been pulled down somewhat to steady it, is now pushed up, and by means of a feeding cup (Fig. 2) an ounce or two of tincture of iodine, reduced to one-fourth its normal strength, is poured into the vagina. By a sort of pumping motion with the volsella this iodine is spread over the walls of the entire vagina. The volsella is then removed, and by means of gauze the excess of iodine is wiped out of the vagina.

2. Open the abdomen by the usual incision, place the patient in the Trendelenburg position, and wall off the intestines by gauze sponges.

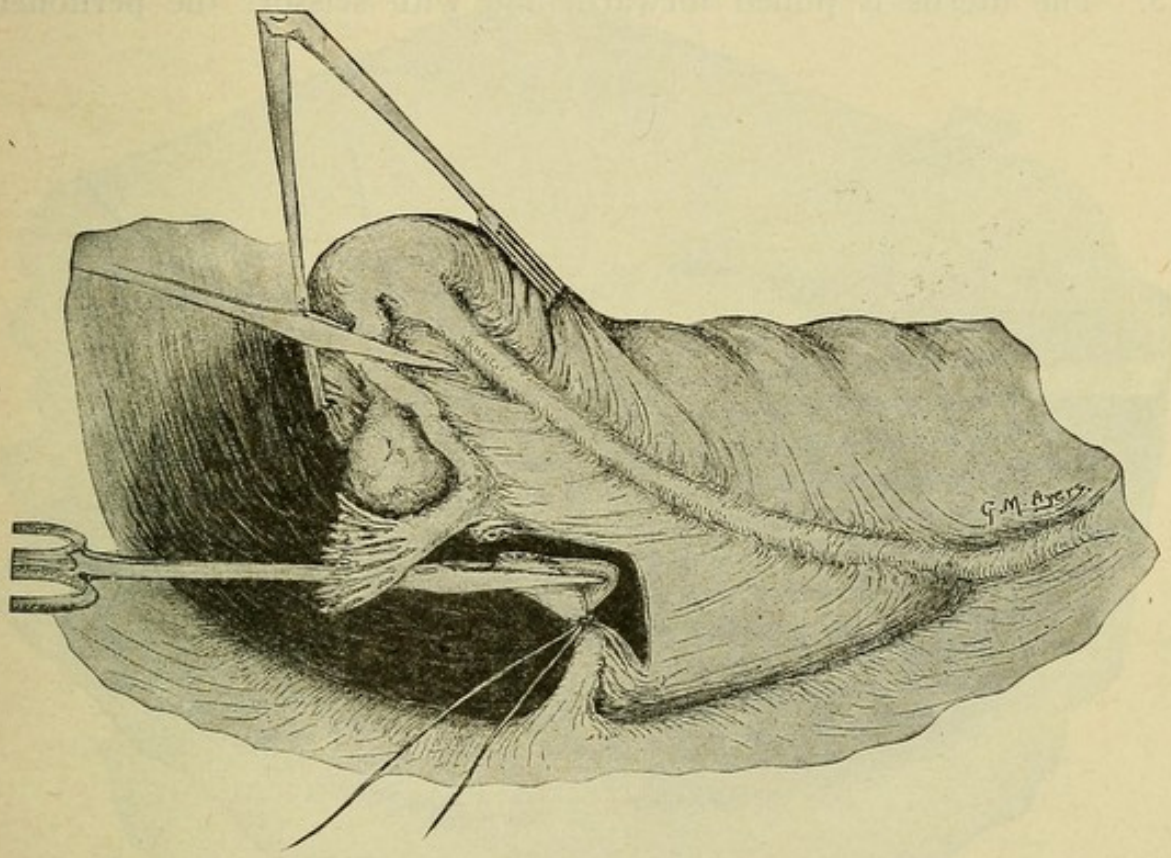

FIG. 3.—Cutting and ligating right infundibulo-pelvic ligament.

The uterus is seized by a tumor clamp and thoroughly pulled up, so as to bring the cervix as close as possible to the abdominal wall. A hysterectomy clamp (Fig. 3) is placed on the infundibulo-pelvic ligament, just outside the right ovary (I always stand on the right side of the patient) and a second clamp is placed at the horn of the uterus so as to catch the uterine artery at that point. An incision is made inside the first clamp, the scissors turning at a right angle at the end of the clamp so as to cut back, for a ligature, the tissues between the point of the clamp and the round ligament. (If an ovary is to be saved the first clamp is applied so as to catch the ovarian ligament and the Fallopian

tube close to the uterus. Later the tube is detached from the ovary and a ligature applied.)

3. Cut the round ligament close to the uterus, and dissect the parts down to a point corresponding to the internal os. This exposes the uterine artery which is caught with a hemostat (Fig. 4) and cut. The same maneuver is executed on the opposite side.

4. Ligatures are applied to the ovarian and uterine arteries, and the clamps removed. Four ligatures have controlled hemorrhage. There is no hemorrhage whatever from the cut end of the round ligament—notwithstanding that all of our text-books show the round ligaments carefully ligated as though hemorrhage would otherwise take place.

5. The uterus is pulled forward, and with scissors the peritoneum

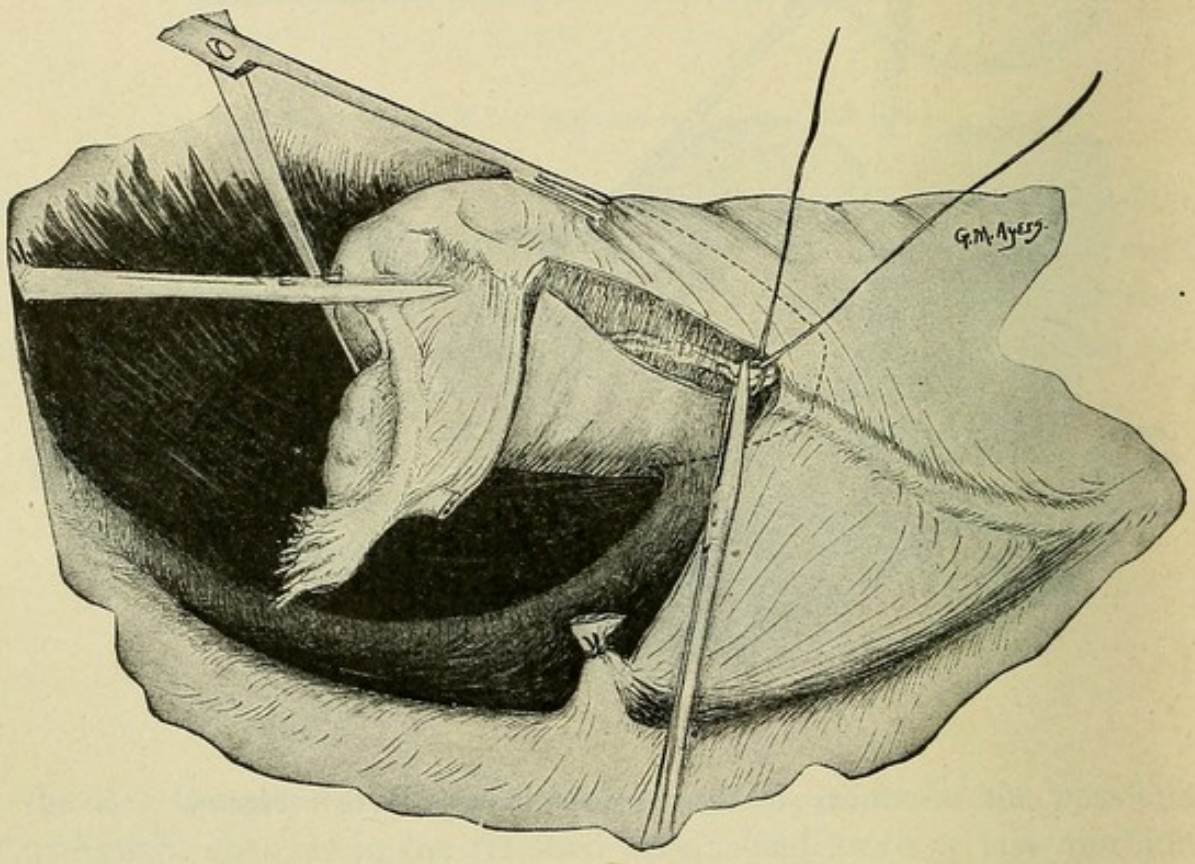

Fig. 4.—Ligating uterine artery. No bleeding from round ligament.

is incised transversely just above the point of attachment of the utero-sacral ligaments (Fig. 5), and dissected down for half or three-quarters of an inch, being careful not to button-hole it. This peritoneal flap is then caught with a hemostat so as to hold it out of the way.

6. The uterus is pulled backward, and the peritoneum from in front of the cervix is carefully dissected down with scissors, carrying with it the bladder. The vagina is freed by snips with the scissors and gauze

wiping on the sides as well as in front. Here occasionally a little artery will need to be caught and tied.

7. The vagina having been well exposed, and being directly under the eye, is caught with a hysterectomy clamp placed transversely just below its attachment to the cervix (Fig. 6), and with scissors the vagina is opened by a transverse incision above this clamp. Air enters the vagina and it at once balloons. Another hysterectomy clamp then catches the anterior wall of the vagina at right angles to the cut which has been made, and the clamp previously applied is removed (Fig. 7). Gauze is

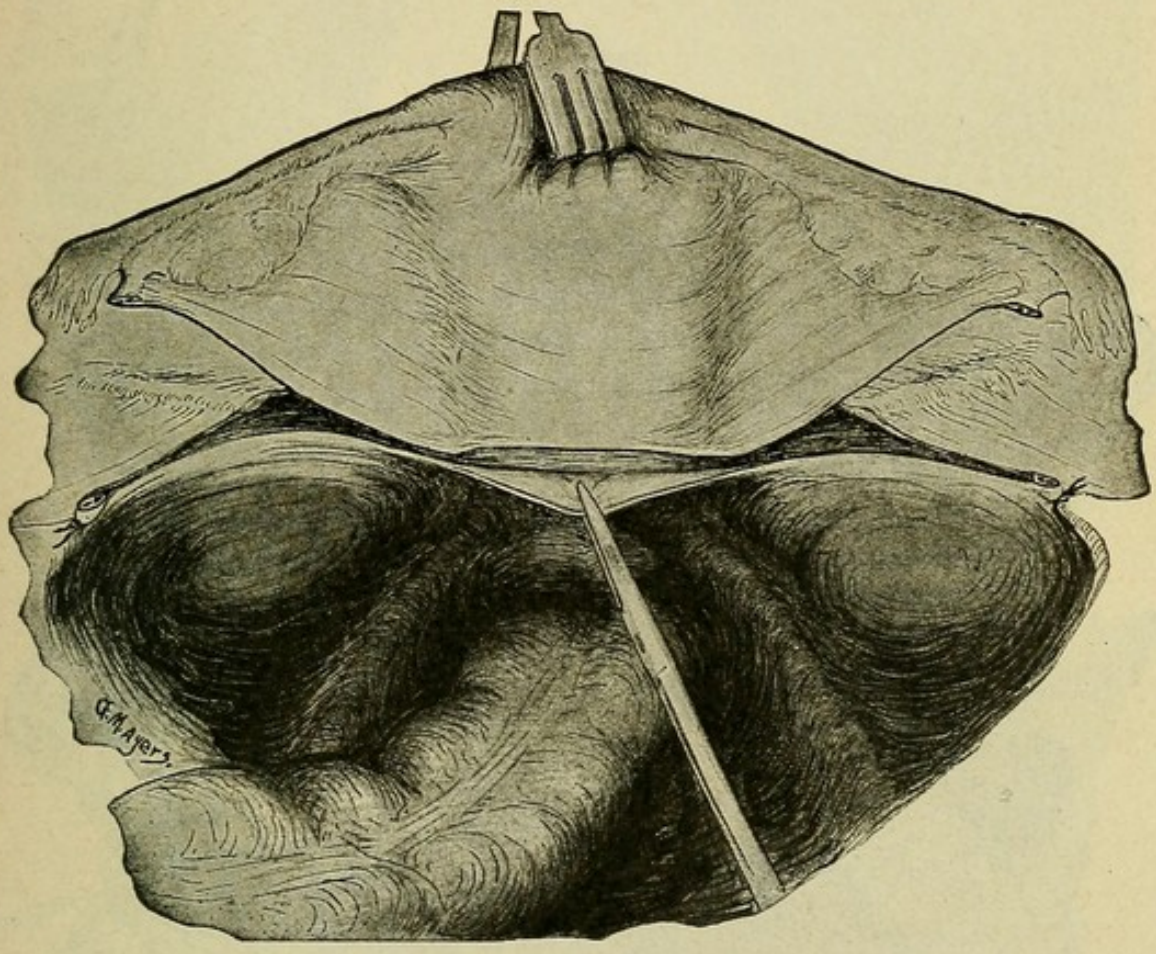

FIG. 5.—Peritoneum incised above uterosacral ligaments.

then pushed into the opening so as to absorb any iodine which may have been expressed from the uterus during the manipulations.

8. The finger is introduced through the opening into the vagina, or a strong hook, and by means of traction and scissors the vagina is separated on the side next the operator to a point in the posterior wall directly opposite the clamp which has caught the anterior wall. The assistant applies a second clamp at this point, and then the incision is completed around the cervix and the uterus removed. This leaves the vagina gaping wide open, but held up firmly by the clamps applied to the front

and back (Fig. 8). If there is any bleeding from the edge of the vagina the bleeding vessels can be readily caught and ligated.

9. A curved needle, threaded with chromicized catgut (I usually use No. 1 double), is passed from within the vagina out on one side, through the round ligament which has been caught at its end by an assistant and pulled directly inward, and returned from without in, entering the vagina a quarter of an inch from its first point of passage. The end of the round ligament is pushed down into the vagina by the assistant, the ligature tied, and the hemostat removed (Fig.9). The same procedure is executed on the opposite side. This leaves

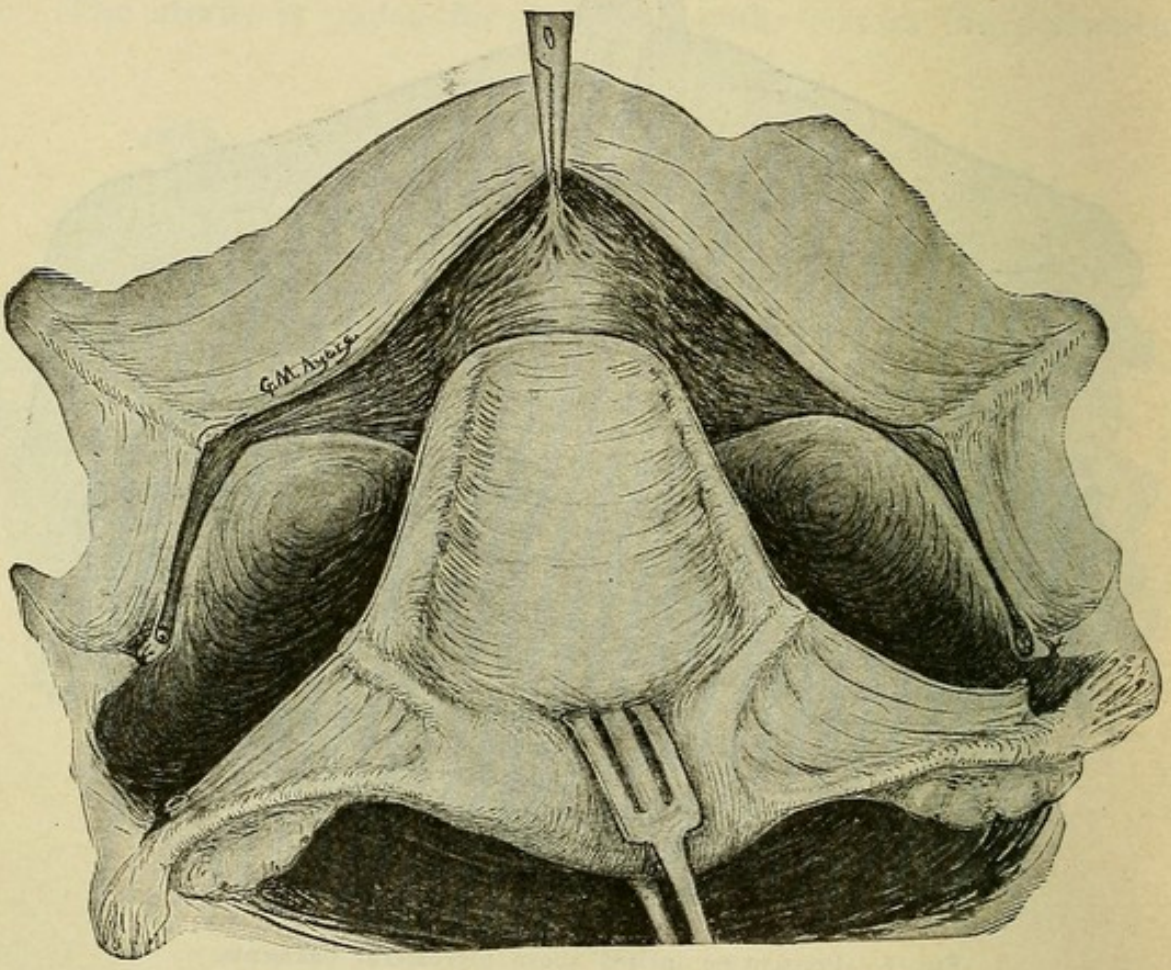

FIG. 6.—Uterus pulled backward and peritoneum with bladder dissected down over the vagina.

the vagina held up by the hysterectomy clamps front and back, and by the round ligaments on each side.

10. A chromicized catgut suture is passed in and out in the submucous tissue around the end of the vagina, not penetrating the mucous membrane, and under each round ligament (Fig. 10). The assistant removes the clamps and this purse string suture is tied, the ends of the round ligaments and the edges of the vagina being pushed in by the assistant by means of an inverter (Fig. 11). This thoroughly

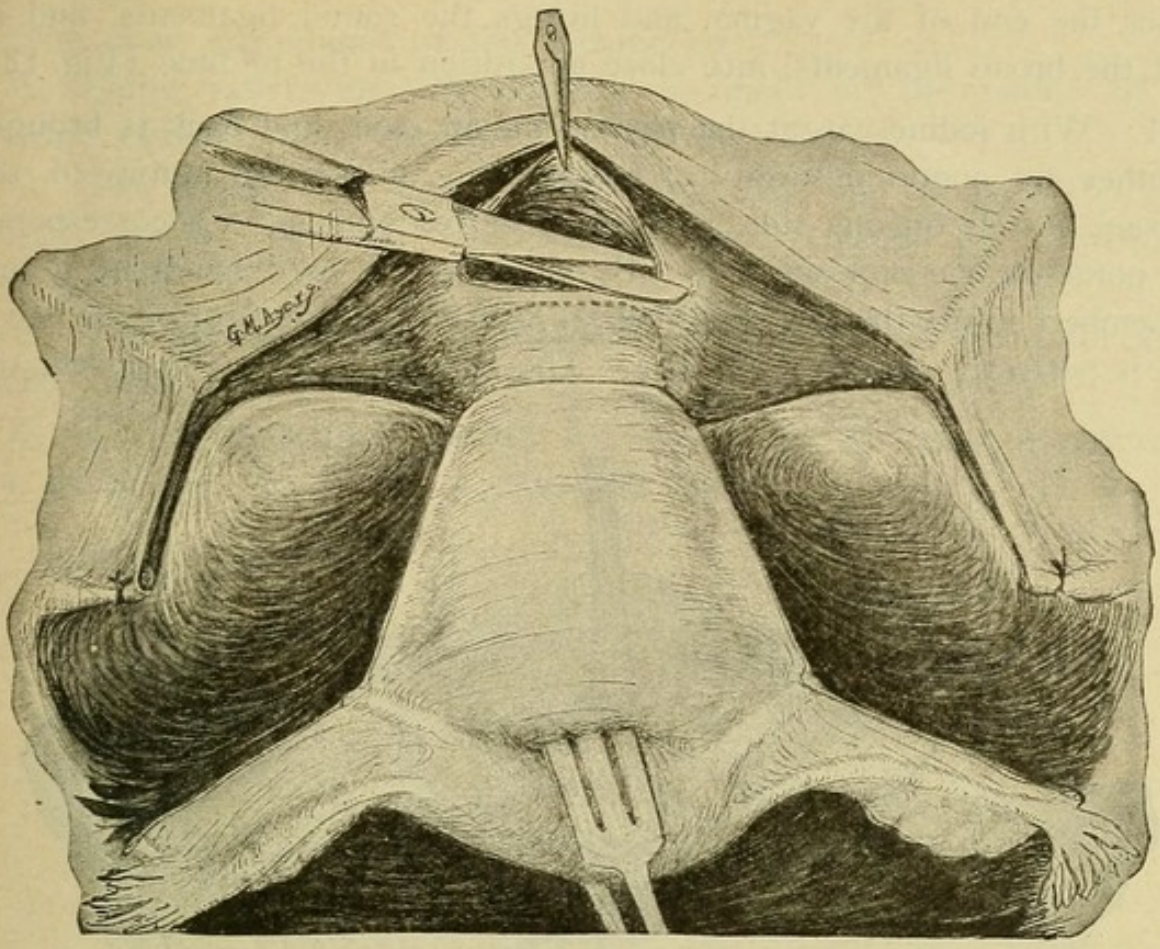

FIG. 7.—Opening vagina in front.

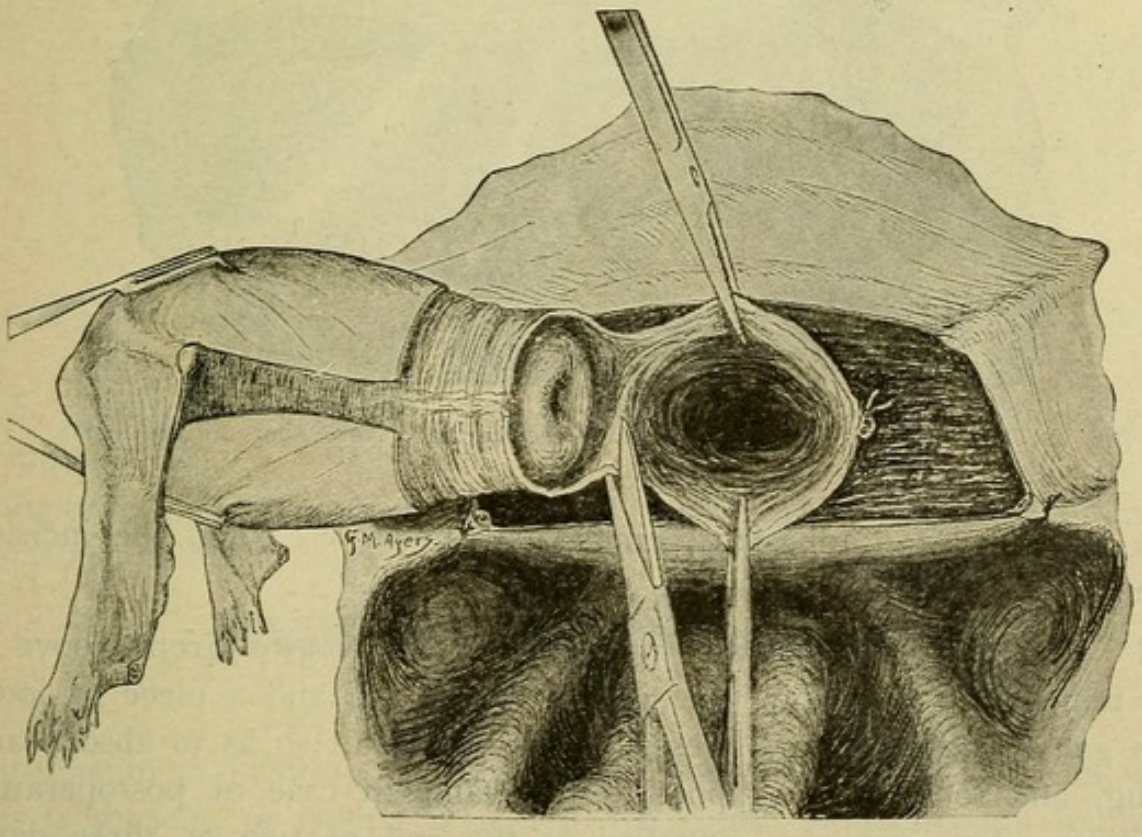

FIG. 8.—Final detachment of uterus from vagina.

closes the end of the vagina, and brings the round ligaments, and in part the broad ligaments, into close apposition in the midline (Fig. 12).

11. With iodine catgut the peritoneum in front and back is brought together by continuous suture, commencing above the stump of the ovarian vessels on one side, continuing across and up to a corresponding point on the opposite side. By catching the peritoneum by a sort of Lembert suture the raw edges are all inverted and the floor of the pelvis is left perfectly smooth (Fig. 13). The appendix is then removed, the

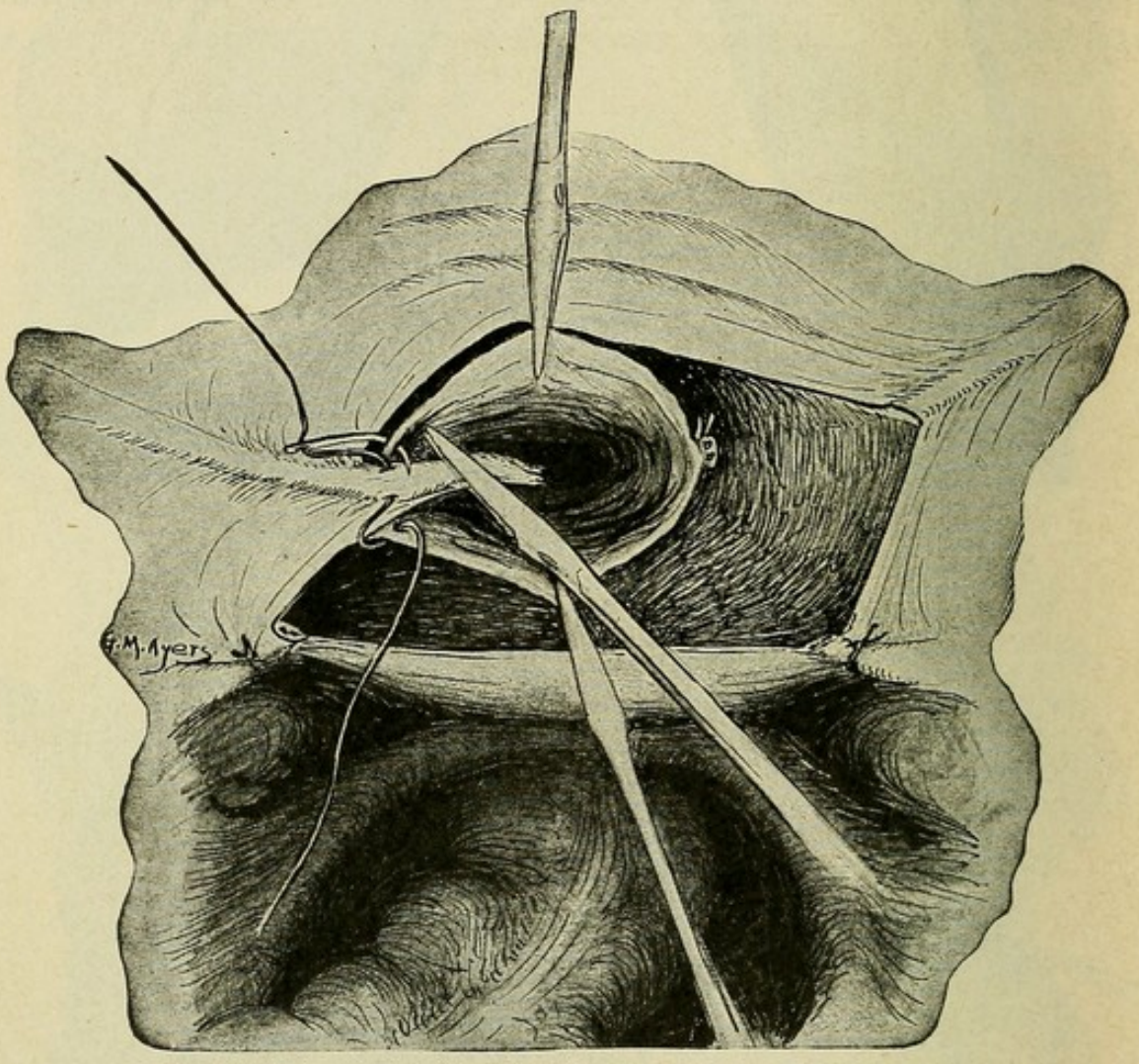

FIG. 9.—Implanting round ligaments into the vagina. Note knot on the inside.

parts examined for adhesions, kinks, gall-stones, etc., and the incision closed in the usual manner.

12. The gauze which was pushed into the vagina from above is now removed from below, the vagina wiped out, and a piece of iodoform gauze passed in and pressed up to the vault so as to absorb any oozing, and to furnish support to the vault in case of postoperative vomiting. This gauze is removed at the end of two or three days, and the parts then kept clean as usual.

The main advantages of this technic are:

1. Quite satisfactory sterilization is made by the iodine of the uterine cavity and of the walls of the vagina.

2. The parts from start to finish are held up so as to be thoroughly under the eye, and within easy reach for controlling hemorrhage.

3. The smooth closure of the pelvic floor leaves no point for adhesions, hence no postoperative ileus.

4. The work is done rapidly because of the complete exposure of the parts and their being within easy reach.

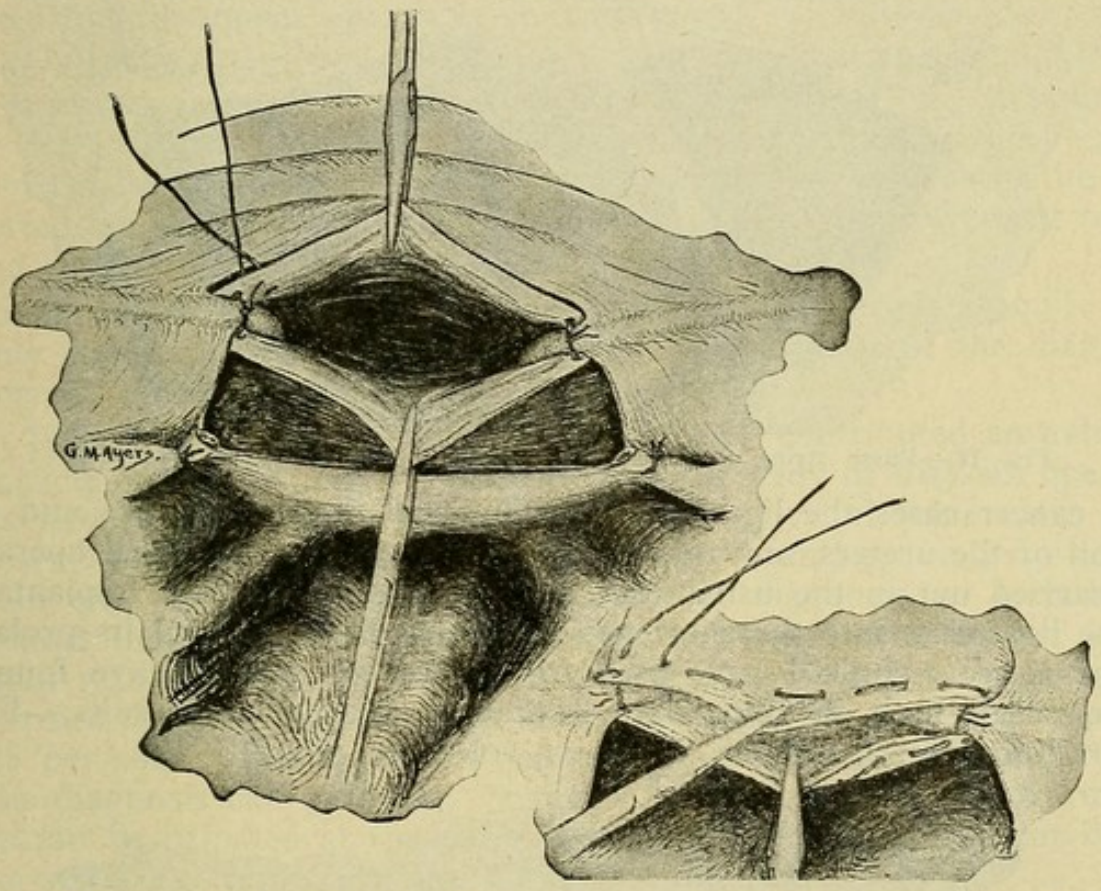

Fig. 10.— Both round ligaments implanted and pursestring inserted passing under each round ligament so as to bring in the broad ligament.

5. The support of the vault of the vagina is most satisfactory and complete.

In cases in which owing to extensive adhesions the peritonum cannot be whipped over, the sigmoid should be mobilized and attached to the

Fig. 11.

peritoneum in front so as to cover the raw surface. In cases in which pus is present, or oozing is feared, the round ligaments are implanted in the vagina as previously described, but the posterior wall is then split downward for a distance, and the true pelvis lightly packed with

a washed piece of iodoform gauze of ample size, one end of which has been pushed down into the vagina so that it can be removed from below; over this gauze the sigmoid is mobilized as described above. The gauze is removed in about one week.

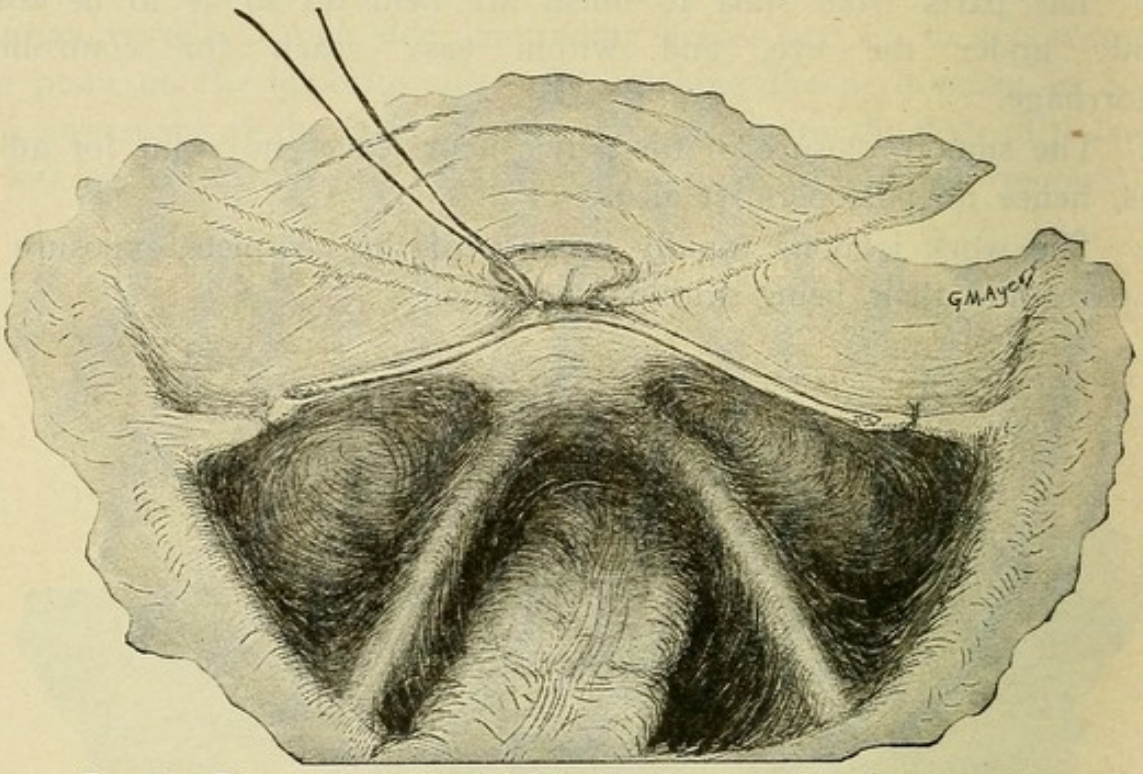

FIG. 12.—Purse string tightened bringing the parts into close apposition.

In cancer cases the ligation of the internal iliacs, exposure and protection of the ureters, and other necessary steps of the radical operation are carried out in the usual way, but when possible with implantation of the ligaments into the shortened vagina so as to prevent its prolapse.

The above technic I have used for several years, and have found it to be ideal, both in immediate execution and in end-results.—From *Amer. Jour Obstet. and Dis. Children,* vol. lxxv, No. 2, 1917.

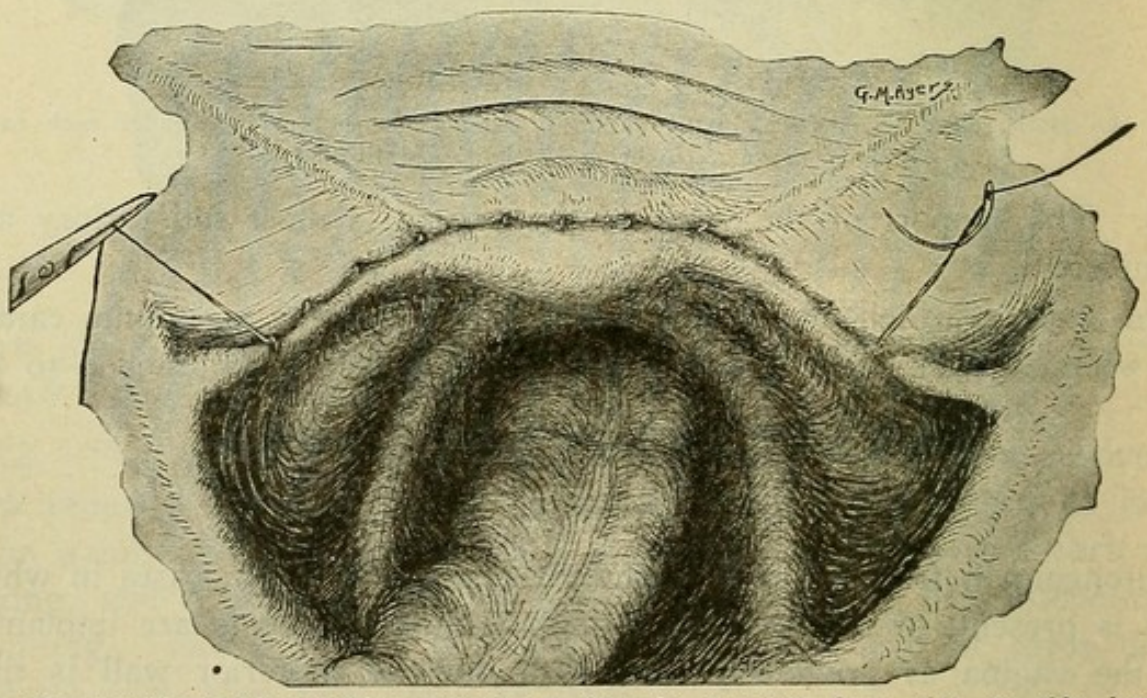

FIG. 13.—Anterior and posterior peritoneum brought together from side to side leaving absolutely no raw surface.

TREATMENT OF PUERPERAL THROMBOPHLEBITIS.*

While the average mortality of puerperal pyemia is ordinarily regarded as between 67 per cent and 75 per cent, it is probable that the mortality of pyemia due to infected thrombophlebitis, in which the veins of the broad ligaments, the internal iliac, or the ovarian are involved, is 100 per cent; at least, I have not been able to find any cases of recovery without operation on record in which such a lesion was demonstrated by subsequent operation or history.

The classical symptoms of pyemia from infected thrombophlebitis are repeated chills, with corresponding wide fluctuations of temperature, with direct evidence to the touch of involvement of the veins of the broad ligaments on one or both sides. It is possible, as in the case reported by Jellett, that there may be no evidence of involvement of the broad ligament, but such a condition is a rare exception.

Treatment of these conditions by vaccines and serums is quite uniformly conceded to be futile, and expectant treatment, if the diagnosis is correct, means a mortality of 100 per cent.

In 1909, J. Whitridge Williams, of Baltimore, contributed an exhaustive article on this subject, in which he made a study of fifty-six operated cases (*Amer. Jour. Obstet.* vol. lix, No. 5). Five of these cases were his own, with one death. Excluding from the entire number of cases certain ones in which there was an error in diagnosis, or technic, he concludes that operative mortality, when the thrombus is limited to the ovarian veins, should not exceed 10 per cent, provided the operation is performed early; when other vessels are involved, the mortality he places at 25 per cent. The operation, he says, should be undertaken as soon as the diagnosis can be made, "which is assured whenever a worm-like mass can be palpated at the outer portion of the broad ligament in patients suffering from chills and a hectic temperature."

The transperitoneal route he greatly prefers to any form of extraperitoneal operation. His technic is ligation of the infected veins beyond the point of extension of the thrombus.

Hiram N. Vineberg (*Amer. Jour. Obstet.*, July, 1913) reports a case in which he excised not only the entire right ovarian vein up to the vena cava, but removed also the uterus. His patient recovered promptly.

In August, 1913, Jellett, Master of the Rotunda Hospital of Dublin (*Surgery, Gynecology and Obstetrics*), presented quite an exhaustive monograph on this subject, in which without hesitation he earnestly recommends operative treatment. He reports five cases with two deaths.

Most of the operators recommend excision of the veins following ligature, but Williams in his monograph states that this treatment is rarely necessary, but that ligation is sufficient.

In my own experience I have operated in four of these cases with

* Read before the American Association of Obstetricians and Gynecologists at Buffalo, Sept. 15-17, 1914.

one death. The details of the cases are without interest, as they present no unusual features. One followed an induced abortion, the others full-term labor. In all the characteristic symptoms were present. I report the cases because the operative technic which I adopted varied from that recommended by the surgeons who had previously reported. In all of my cases the thickened vein was readily identified, and in two of them, in addition to the ovarian, some of the branches of the internal iliac were involved. All of the patients were in desperate condition, and it seemed wise to complete the operation as rapidly as possible. Accordingly a hysterectomy was made, after sterilizing the vagina and endometrium with iodine, and the vagina left widely opened. The affected veins were then exposed by separating the peritoneum, and cut across with free escape of rotten blood clot. Care was taken to manipulate the veins as little as possible so as to avoid pushing the clot toward the vena cava. This was especially true after my first fatality. No attempt at ligation of the veins was made, but the pelvis was filled with an iodoform gauze fluff pushed down from above into the vagina, and over this the sigmoid flexure of the colon was stitched around the pelvis so as to completely occlude the peritoneal cavity. As the patients were all young an ovary was saved in each instance. In three of the cases prompt recovery ensued. In the fourth there had evidently been a disturbance of the clot, and death occurred suddenly.

In all four cases the uteri submitted to the pathologist were found by him to contain multiple abscesses, showing that the removal had been wise. By thus detaching the uterus, with ligation merely of the arteries, the veins of the broad ligaments are left free to drain into the gauze fluff, and thus out of the vagina, so that a beginning thrombus in any one of them would most likely prove harmless. By making no effort to excise or even ligate the veins, a minimum of manipulation and traumatism results, with correspondingly diminished risk of breaking off a portion of the clot to drift into the vena cava.

As the infection reaches the veins through the sinuses in the uterine wall, it is evident that in a large proportion of cases the uterine wall itself is the seat of abscesses, as proved to be true in all my cases, and the removal of the uterus not only gets rid of a source of continued infection, but also gives absolutely free drainage of all the veins that can possibly be directly at fault. These veins are usually without valves, and with a free opening at the bottom where the infected clot is breaking down, the contents would naturally extrude in that direction, instead of extending upward, as must necessarily be the case when no direct down drainage is secured. The fatal case I here report more at length:

Mrs. E., aged twenty-six. Married eighteen months. One early miscarriage about a year before. Was delivered by her physician, April 22, 1914, with forceps, the instrument being applied with the head on the perineum, and without laceration. Thirty-six hours later she had a chill with a temperature of 105°. She had daily chills from that time until the 26th, when I saw her in consultation. Blood count, 23,000 leukocytes, 90.6 per cent polynuclears. Vaginal examination showed some laceration of the cervix on the right side. In the left broad ligament, however, was found the typical condition showing infection at that

point. Right broad ligament entirely free. Vaginal discharges odorless. I advised expectant treatment of the case for a few days, but with operation later if the conditions did not improve. April 27 the patient's condition was pretty fair all day. No chill, but continued high temperature. On the 28th and 29th no chills, but general condition not so good. Temperature 104°. Some tenderness now in the right broad ligament as well as the left, but could make out no distinct mass on that side. Operation advised.

Operation.—Median incision. The veins in both broad ligaments were found involved, the infection extending on the left side into the ovarian and also into branches of the internal iliac. A pan-hysterectomy (except the ovaries) made in the usual way, with wide drainage of both broad ligaments, the posterior vaginal wall being split for the passage of an ample gauze fluff, over which the sigmoid was attached all around to the peritoneum.

Examination of the uterus showed the entire placental area to be infected, while the inner surface of the entire cervix was sloughing. Minute abscesses in the walls of the uterus on both sides.

For forty-eight hours the patient materially improved, except that her pulse and temperature failed to subside as much as had been hoped. She reported herself as feeling fine. On the morning of May 1 she seemed a little better, and when seen about six o'clock that evening had apparently held her own nicely all day. I was called out of the city at that time, and when I returned at 10:30 p. m. found her dying, with every evidence of plugging of the pulmonary arteries. Death was attributed to a breaking loose of a pelvic clot.—From *Amer. Jour. Obstet. and Dis. of Children*, vol. lxxi, No. 2, 1915.

DERMOIDS OF THE KIDNEY

Works on diseases of the kidney quite uniformly state that only two cases of dermoid of the kidney are on record, and with unanimity they refer to the celebrated case of Sir James Paget[1] and to the case reported by Professor Haeckel[2] in 1902. Investigation, however, shows that a few other cases are to be found in the literature. Paget's case was one of dermoid tumor of the kidney in the sheep. It seems strange that this error went so long without being discovered, but it was finally pointed out in 1913, by W. R. Williams.[3] The discovery was easily made, as the specimen in the museum of the Royal College of Surgeons is described[4] as follows:

"3558-A. A large tough-walled cyst, probably dermoid, which was found in the place of one of the kidneys of a sheep, and contained a mass of wool rolled up with fluid oil and fatty matter. The cyst is inverted; its walls are from one to two lines in thickness; its inner surface is rough and covered with portions of fatty substance, and part of the wool is fixed in it. A long cylindrical tubular process is continued from the main cyst, and is similarly filled. The cyst was found in the middle of the mass of fat in which it was expected that the kidney lay. No trace of kidney appeared. The sheep was healthy and very fat, and had a good fleece. The kidney on the other side was very large."

Case 1. Haeckel's case, referred to above, was reported in full by his assistant, Wedemann, in his inaugural dissertation.[5] Female, aged 58. Had noticed some sort of swelling in the right side for several years, but only for a few months had it made itself prominent, with increased pain. A distinct tumor. No urinary trouble. Menopause at 37. A hard tumor about the size of a child's head in the ileocæcal region, smooth and globular; very movable, but it appeared to be fixed near the anterior superior spine. No involvement of lumbar region. No connection with the liver or genital organs. Operation, November 25th, 1901. Incision at the outer border of the right rectus. Tumor easily removed, with prompt recovery of the patient. The tumor was cystic, its surface nodular in places, filled with a pultaceous yellow substance, traversed with bundles of hair.

Case 2. (Reported by W. S. Goldsmith.[6]) The patient was a male, aged 20. Had had evidence of trouble with one kidney since two years of age. Frequent attacks of "colic." The tumor had been recognized for two years. Hæmaturia and great pain were pronounced features. The diagnosis was that of floating kidney with twisted pedicle. Kidney removed through a lumbar incision. Prompt recovery. Examination of the tumor showed kidney remains to be present, but the main mass was made up of a cyst containing a large quantity of reddish, mealy material matted together by hair.

Case 3. (Reported by E. W. Walker.[7]) Girl, aged 11 years. Had

been subject to attacks of so-called "colic" for several years. The attacks would last several days, and were attended by nausea, vomiting, constipation, tympanites, and irritable bladder. Pain located in the left lumbar region, and tumor noticed for about one year in this region. No positive diagnosis made. Exploratory laparotomy, July 15, 1895. Median incision four inches in length. The tumor was found to be the size of a large orange. Had a long, slender, twisted pedicle, and had contracted light intestinal adhesions. Removal very simple. Prompt recovery. Examination of the tumor showed that it was 4½ inches long, 2½ inches wide, and 1¾ inches thick. Two-thirds of this was taken up by a cyst. There seemed to be three dermoid cysts, one of which was filled with fatty material and fine hair.

Case 4. (Reported by Schlegtendal, B., and Madelung.[8] Male, aged 22. Had had a swelling in the right side of the abdomen as long as he could remember, but this gave no trouble until six months before. The tumor was in the right upper abdomen, was quite extensive, and apparently connected with the liver. Diagnosis: Echinococcus of liver. At the operation two incisions were made, and the cyst opened and attached to the skin for drainage. About a bucketful of clear yellow fluid was withdrawn, but this contained neither hydatid vesicles nor hooklets. Patient improved for a few weeks, but then got worse, and died some months later. At the autopsy the liver occupied the greater extent of the abdomen. Marked amyloid degeneration. Spleen much enlarged and adherent. In the place of the right kidney was a long tumor, a portion of which extended to the abdominal wall, where a fistula persisted. The greater part of the tumor was of stony hardness, so that it had to be cut with a saw. Cystic spaces were present, filled with a whitish, smeary mass consisting of fine fat-cells, crystals of cholesterin, and epidermis. Renal parenchyma could be made out at various parts, and epidermal tissue was scattered throughout the calcified strata.

Case 5. (Reported by Enrico Boni[1]) Female, aged 45. Had had symptoms dating back about 15 years. Swelling noticed for ten years in the right side of the abdomen. Globular tumor present, extending from costal arch along the median line to the crest of the ilium. Not moved by inspiration. Indistinctly lobular. Not connected with the liver. Diagnosis: Hydronephrosis probably due to calculus. Operation, May 16, 1904. Incision at border of right rectus. Tumor removed as usual, with a large gauze drain left in the wound. Patient died four days later. The tumor, the size of an adult head, contained five intercommunicating cysts, filled with yellowish green turbid fluid, and detritus. The tumor showed typical structure of skin, with sebaceous sweat glands, hair follicles, and hair scattered throughout the several sections.

[A. G. Rider[2] published a report of a case of alleged dermoid cyst of

[1] Surgical Pathology, London, 1853.
[2] Berl. klin. Wchnschr., 1902, xxxix, 964.
[3] Lancet, Lond., i, 561.
[4] Descriptive Catalogue Pathological Specimens in the Museum of the Royal College of Surgeons of England, London, 1885, iv, 18.
[5] Jena, 1902.
[6] Tr., Southern Surg. & Gynec. Ass., 1908, xxi, 95.
[7] Tr. Am. Surg. Ass., 1897, xv, 591.
[8] Arch. f. klin. Chir., 1887, xxxvi, 304.

the kidney with malignant degeneration. In the report of the autopsy, however, it is impossible to find anything pointing to a dermoid, and the tissue sent to the Clinical Research Society was reported as a columnar-celled carcinoma. The tumor was removed by operation, but the wound gave way with prolapse of the bowel, and death of the patient.]

AUTHOR'S CASE. Miss M. H., Degraff, Ohio. Physician, Dr. J. H. Wolfe. April 30, 1912. Age 16. Patient was seen rather hurriedly at the office of her physician. Appetite fair, bowels regular, kidneys normal, menstruation regular and normal. The mother stated that her daughter had had an abdominal tumor ever since she was a year or two old. When first discovered it was about the size of a hen's egg. Had grown with the growth of the child, but of late had been growing more rapidly. The patient was a hearty looking schoolgirl. She presented a tumor about the size of a cocoanut in the right side of the abdomen. This could be pushed freely in all directions. Because of her youth made no vaginal examination, but from the mobility of the tumor, and the history of its long existence, made a presumptive diagnosis of an ovarian dermoid, though the tumor was rather large for a growth of that character. Its prompt removal was advised.

I saw her next June 7, 1914, and examined her without removing her clothing. The tumor was about as before except somewhat larger, but still quite movable. Urged operation.

Operation, August 4, 1914, Grant Hospital, Dr. Wolfe being present. Examination under the anesthetic showed that the tumor was not of pelvic origin. Its range of motion seemed to indicate that it was of the kidney and not of the ovary. It was hard in general, but irregularly so, feeling somewhat like a hydrocephalic head. Made an incision directly over the tumor which was found to be retroperitoneal and to involve the kidney. A transperitoneal nephrectomy was made without difficulty. Pelvis organs normal. Appendix removed. To provide for any possible oozing from the large surface which was exposed, a cigarette drain was passed through a stab incision to be removed in a few hours. The colon was then carefully replaced, and the incision closed without other drainage. Patient made an ideal recovery.

Examination of the tumor before its removal showed that it involved the lower half of the kidney. The other half projected from the tumor and was apparently normal. Studied the specimen for a few moments to see if this much of the kidney could be saved, but finally decided against it, and the whole organ was removed and turned over to the pathologist. His report showed that it was a dermoid of the kidney involving the lower half. The walls of the tumor consisted largely of bony plates, while the interior had many cavities containing different colored fluids, filled with cholesterin crystals. No hair.—*Surg. Gyn. and Obstet.*, Feb., 1915.

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1 Osp. magg., Milano, 1906, i, 386.

2 Lancet, Lond., 1906, ii, 1589.

SPLENECTOMY FOR PERNICIOUS ANEMIA; APPARENT RECOVERY; DEATH.

So much has been written of late in regard to the treatment of pernicious anemia by splenectomy, that it seems important that every case, whether successful or the reverse, should be placed on record; hence the following report:

Miss E. S., aged 34, patient of Dr. J. M. Thomas, Columbus, Ohio, was operated upon by me April 22, 1914, for pernicious anemia. The diagnosis had been established by the progress of the disease and repeated blood examinations. The spleen was materially enlarged. The operation was made in the usual way, occupied but a few minutes of time, and the patient's operative recovery was absolutely smooth. Her blood examination four days before her operation showed hemoglobin, 30 per cent; reds, 1,616,000; color index, 1; leucocytes, 5,400; polynuclears, 65 per cent. Six days after her operation the hemoglobin was 22 per cent; red cells, 1,632,000; color index, 1; leucocytes, 12,000; polynuclears, 64 per cent; small lymphocytes, 30 per cent; large lymphocytes, 5 per cent; eosinophiles, 1 per cent. June 14, hemogloblin, 30 per cent; reds, 1,208,000; color index, 1.7; leucocytes, 18,000; polynuclears, 83.6 per cent; small lymphocytes, 12 per cent; large lymphocytes, 4.4 per cent. From this time on her improvement was very rapid, and on June 23 her blood count showed hemoglobin, 68 per cent; red cells, 3,319,000; color index, 1; leucocytes, 6,400; polynuclears, 69 per cent; small lymphocytes, 25 per cent; large 4 per cent; eosinophiles, 2 per cent. At this time the patient left the city to visit friends. She returned in July, and her physician reported that on her return he found that she was in bad shape; had gone all to pieces. The disease made rapid progress and she died July 29. A specimen of her blood was obtainel a few hours before her death, and while she was comatose. This showed hemoglobin, 12 per cent; red cells, 720,000; color index, 1.4; leucocytes, 37,000; polynuclears, 87 per cent; small lymphocytes, 9.2 per cent; large 3.4 per cent; eosinophiles, 0.4 per cent.

Any surgeon who is contemplating splenectomy for pernicious anemia should read the article by Moffet on the subject of this form of anemia as it appears in the *American Journal of the Medical Sciences* of December, 1914.—N. Y. *Med. Record,* Feb. 6, 1915.

CESAREAN SECTION FOR UNUSUAL INDICATION.

Mrs. E. W. H., aged twenty-seven; married three years. Never pregnant. Physician, Dr. Ranchous, Columbus, O.

Patient was brought into the hospital Tuesday, December 30, 1913. She had been in labor at full term since the previous Friday. She had had many pains, but they had ceased on Monday morning. They recommenced, however, in the afternoon, and all through the night had been severe about every five minutes. No progress had been made, however, and for that reason I saw her in consultation.

Examination showed patient to be quite plump. Very little relaxation of the vagina. The os was about the size of a silver dollar. The breech was presenting, but had not descended. The head was under the ribs on the left side, and everything indicated that the child was unusually large, and alive and vigorous. Pelvic measurements normal. Mother's general condition fair, but she was getting tired out.

It was quite evident that there was a decided disproportion between the child and the pelvis, this disproportion being due largely to the pad of fat. To deliver under the circumstances would mean almost certainly a dead baby, and more or less extensive laceration of the maternal passages. For those reasons I advised Cesarean section. The advice was accepted, and the operation carried out in the usual way, making the high operation. The child's head was presenting and was delivered, owing to its large size, with considerable difficulty. The rest of the body readily followed. The operation was completed in the usual manner.

After opening the abdomen, the omentum was found covering the uterus like a remarkably thin veil. It was adherent clear across at the brim of the pelvis, the adhesions being the most marked on the right side. This omentum was pushed over to the left before incising the uterus. After closing the uterus, examined again, but found the adhesions so firm that it seemed unwise to attempt to separate them to find the appendix, which had perhaps been responsible for the adhesions

The child was readily resuscitated, and both mother and child left the hospital in fine shape.

Breech presentation is certainly a very unusual indication for Cesarean section, and yet that it may be so is clearly shown, I think, by the case reported. If craniotomy on a living, viable child is unjustifiable, except under most unusual circumstances, then certainly delivery by the breech, under the circumstances in which my patient was found, would be equally unjustifiable, since the death of the child would be almost as certain in the one case as in the other.—*Cin. Lancet-Clinic,* Sept. 5, 1914.

FOUR CASES OF "ACUTE ABDOMEN"—FOUR AUTOPSIES —FOUR SURPRISES.

1. Mrs. L. B., aged forty-seven years. Physician, Dr. D. L. Moore. Seen at Grant Hospital March 17, 1914. Had been taken suddenly at 4 p. m., on March 16, with severe pain in region of the gall-bladder and liver, the pain running into the right shoulder. Had had slight attacks of trouble at this point at intervals for the last year, but had never vomited with any of them. Had been vomiting persistently since this attack came on. Morphine had been given to control the pain, which the daughter described as "awful." Had never had typhoid fever. No jaundice, but the urine was dark in color the day before. Had some chilly sensations at the beginning of the attack, followed by sweats. Was somewhat stupid from the morphine when she was brought in. Examination showed the patient to be very fleshy. Pulse hard and somewhat increased in frequency. Could find no tenderness at any point, but Dr. Moore and the daughter both stated that the tenderness before the opiate had been excessive. The abdomen was quite distended. Blood count by Dr. Shilling showed 33,000 leukocytes, 95.6 per cent polynuclears. Diagnosis absolutely uncertain, but with the blood count, the collapse and the patient's facial expression, which was bad, advised against any attempt at operation. When patient was out from under the morphine I examined her again, but could find no special tenderness anywhere. She was simply in profound collapse. A general diagnosis of "acute abdomen" was all that could be made, but with a strong suspicion of a perforating ulcer, or possibly an acute hemorrhagic pancreatitis. After this she required very little morphine, but the stupor persisted and deepened, and she died a little before midnight on the eighteenth.

After entering the hosptial she had no more vomiting, nor could we get any movement of the bowels. Her temperature when she entered the hospital was 99.4° F.; pulse, 120; respiration, 14; urine, normal. Her temperature dropped to 99° F., then rose to 102.2° F., and the next day to 103°. Pulse became more and more rapid, and so feeble that it could not be counted.

Autopsy the next morning by Dr. Schilling showed the intestines distended, but that was all. Everything in the abdomen was carefully examined, but nothing could be found wrong. There was an old hy-

drosalpinx on the one side, and a pyosalpinx on the other, but no signs of any pelvic infection. Lungs and heart normal. Cause of death absolutely undetermined.

2. Baby B., aged one year. Patient was seen in consultation with Dr. Moore, and two of the Columbus Barracks' surgeons. Was seen on Monday morning. Had been ailing since the preceding Friday night. Had been constipated all the week. Enemas had been given without any effect. Abdomen not distended. The child had vomited twice before the doctors saw her, and had vomited again since that time. On Saturday morning was having clearly abdominal distress, but no acute pain. Vomited that morning. Seemed a little better in the afternoon. No medicine was given, but enemas. No bowel movements. No fever. Breathing rather rapid, with a grunting expiration. Rapid pulse. Dr. Moore saw the case in consultation the next day (Sunday), and thought he could make out some dullness along the ascending colon. No nausea. A dose of oil by stomach advised. This was given, and, in due time, there was a large brownish stool. A little more oil was given and there were more stools later in the night. The first movement seemed to afford a little relief, but after that the stools produced no effect. Considerable gas was passed during the night. Restless all night. Monday morning not so well; very tympanitic and resistant all over the ascending colon. The physicians thought there was dullness on percussion over the ascending colon.

I found the patient to be a very hearty looking little girl, rather plump. Abdomen distended, but I could localize no tender point by manipulation. No lump anywhere. Abdomen generally tympanitic. Free escape of gas while I was manipulating. Advised against any surgery. Diagnosis entirely in doubt. Did not think there was any appendicitis. There was pretty vigorous peristalsis at this time. No signs of intussusception or volvulus. I saw it again the next day, as the physicians thought they could feel a lump rather high up in the abdomen on the right side. This lump, I thought, was the edge of the liver, but, to be sure, gave a few whiffs of chloroform to secure relaxation. This showed that the lump was the right lobe of the liver. Took advantage of the opportunity to make a rectal examination, but this was entirely negative. The child's general condition continued about the same, and it died four days after I first saw it.

Autopsy was made with unusual thoroughness, including opening of the skull. Absolutely nothing was found to account for the death.

3. Mrs. H. K. Physician, Dr. C. A. Cooperrider. March 1, 1915. Aged thirty-eight years. Mother of three children. Had always enjoyed excellent health until some months before, when she had an

attack of inflammatory rheumatism from which she made a good recovery. At 3 a. m. of the morning of my visit she was taken suddenly with severe abdominal pain. Had been suffering all the day before and during the night with sick headache, to which she was accustomed. This sudden pain was at the pit of the stomach. She vomited, throwing up some water, which she had taken. As Dr. Cooperrider lived at some distance, a neighboring physician was called in who made a diagnosis of indigestion. He gave her a hypodermic and ordered a cathartic. He saw her again during the forenoon and her condition was no better. Dr. Cooperrider was called at 3 p. m. He found her desperately sick; as soon as possible he telephoned me, and I saw her in consultation at 5:30 p. m.

Found patient to be a plump woman with a greatly distended abdomen. Tender all over the abdomen, but particularly on the right, above the umbilicus. Here she said she felt more pain than anywhere else. Flushed face. Slight elevation of temperature. Pulse, 160 to 170, and almost imperceptible. Could not count it except by listening to the heart. Diagnosis, "acute abdomen," but because of her age and the previous history there was a suspicion of gall-stones, and perhaps acute hemorrhagic pancreatitis. No history indicating ulcer of the stomach or duodenum. The priest was present, and he was advised to administer the last rites of the church, which he did. Patient died at midnight.

Autopsy at 10:00 a. m. The uterus was found considerably enlarged, containing a greatly thickened endometrium, etc. Aside from this could find nothing pathological. Diagnosis absolutely in doubt. Dr. Cooperrider, who, after the consultation, had devoted a good deal of thought to the study of the subject, had fully expected to find acute hemorrhagic pancreatitis.

4. Mr. R., aged forty-nine years. Physician, Dr. S. D. Stevenson. Patient was brought into the hospital hurriedly on April 3, 1914, by Dr. Goodman, who had just been called to see him in consultation. He found him in collapse, and after bringing him to the hospital, asked me to see him to see if an operation was possible. I went over at once, but was met by the nurse on the stairs with the statement that the patient had just died.

The history showed that some days before the patient had had a right-sided pneumonia. Temperature, 104° F. Normal crisis on the sixth day. Convalescence was ideal. Temperature remained normal for three days. On the morning of the fourth day after the crisis the patient complained of some uneasiness in the abdomen, but nothing that was at all serious. There was no distention and practically no

tenderness. About 4:00 p. m. the doctor was called again and found him in collapse. Abdomen enormously distended. Was removed to the hospital at once. His temperature on entering was 96.6° F., pulse, 80; respirations, 40. Several enemas were given, but with very little result. He died two hours after entering the hospital.

Autopsy by Dr. Schilling showed the pneumonia to be undergoing absolutely normal resolution for that period. Aside from that and the distended intestines, nothing whatever could be found wrong.

These four cases are reported as showing the uncertainties of diagnosis, and the surprises which we may meet with in autopsies. In the three adults, certainly we would have expected to find marked pathological developments in the abdomen, and yet nothing whatever was found. The symptoms in the child were less fulminant, but that is so frequently the case with children, especially in appendicitis, that the absence of acute symptoms would not be of much significance.

It is somewhat appalling to think what would have happened in these cases had operative intervention been advised. Nothing would have been found, no good would have been accomplished, and, in all, the final death would more than likely have been attributed to the blunders of the surgeon in advising operation.—Cin. *Lancet-Clinic,* Nov. 28, 1915.

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