HISTORY

OF A

CASE OF DOUBLE OOPHORECTOMY, OR BATTEY'S OPERATION: WITH REMARKS.*

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ON June 12th, 1878, I showed to the Fellows of the Obstetrical Society† the ovaries of a patient on whom I had performed Battey's operation two days previously, with the hope of cutting short her life-long menstrual suffering. Nine months having elapsed, I proceed to fulfil the promise I then made to bring before the profession the full record of the patient's case, and to offer some remarks on the operation which was undertaken for her relief.

CASE. *Dysmenorrhœa: Ineffectual Division of Cervix Uteri: Pelvic Inflammation: Internal Hemorrhoids cured by Ligature; Double Oophorectomy: Premature Uterine Senescence.*—M. K., born October 3rd, 1842, began to menstruate at the age of twelve. From the very first the monthly flow was attended with pain. The suffering generally began a week before the period was due, and continued through the week of the catamenial flow. During the height of the pain she used to be confined regularly to bed for four or five days. Stimulants and sedatives were always administered, such as whiskey, gin, laudanum, chloric ether, sal volatile, etc., with the view of lulling the pain. The late Mr. Carmichael, who was her medical attendant, was obliged for many years to keep her under the influence of chloroform when she was at her worst every month.

In 1868, Mr. Carmichael took her to see Sir James Simpson, who divided the cervix uteri. An attack of pelvic inflammation ensued, and the dysmenorrhœa continued.

In 1872, I saw her along with Mr. Carmichael. The uterus was anteflexed, and so sensitive that the introduction of a sound caused unusual suffering. Both ovaries were swollen, and tender to the touch; the left especially was felt to be fixed with inflammatory adhesions. The general system was greatly reduced, and there was a very marked degree of anæmia, which was traced to constant losses of blood from internal hemorrhoids. There was great congestion and sensitiveness in the rectum, as well as in the genital organs; and as the most urgent indication seemed to be to check the hæmorrhoidal bleedings, and as I had seen in other cases of chronic inflammation of the genital organs a marked improvement in the uterine condition after the cure of such a rectal complication, I proposed to Mr. Carmichael that we should try to remove the hæmorrhoids. To this he agreed; and, with the assistance of Dr. Halliday Croom, we operated on them in the usual way with ligatures. When the operation was nearly completed, and the last of the hæmorrhoidal masses was being transfixed with the needle, the breathing of the patient, who was being chloroformed by Mr. Carmichael, became stertorous, and, for a time that seemed to us to be very long, it ceased altogether. Under artificial respiration, kept up by alternate compression and relaxation of the chest, the patient recovered; but none of us had ever before such a fright with a narcotised patient. The operation was completed, and was so far successful that the hæmorrhage ceased and the patient's general health was greatly improved.

She never again looked such a wreck of a woman as she appeared before this operation. But her menstrual pain remained unrelieved; and her own long-trusted and esteemed doctor having died some time subsequently, she began to come to me from time to time to seek for more relief. Many means were employed. External counterirritation was long employed without marked effect. Glycerine and wadding-plugs were applied through the vagina; and afterwards hot water vaginal douches, and from time to time various kinds of medicated pessaries, were employed. Whatever relief she at any time obtained proved only temporary. I could only console her by telling her that when menstruation ceased she would get rid of pain, and might become a strong active woman. Once when I tried thus to comfort her, and she rejoined that there was little consolation in looking forward to so many years of suffering, I hinted at the possibility of anticipating the date of freedom by removal of the ovaries. Again, two years ago, after my return from the International Medical Congress in Philadelphia, I

told her definitely that they were curing some of her fellow-sufferers by this means, but without urging on her the operation.

In the end of 1877 she came from Dundee, whither she had now gone to reside, to see me. After I had again confessed my inability to do more for her relief, and began to tell her, as usual, that she must be content to mitigate the suffering till the menopause should come, she said: "But didn't you tell me that the American doctors were curing their patients by making them old before the time?" I put her off by prescribing for her some sedative she had not before employed, and asking her to return in the spring. In March she returned, no better; and asking again, "Can't you do here what the doctors in America can do?" I confessed that of all the patients I had known, she was just the one most likely to benefit by the operation; but I added that it was by no means free from danger, and said that I would rather not undertake it till the better summer days. In June she reappeared. She declared she had come to give me a last chance of curing her. I began to speak of delaying the operation. She looked me in the face, saying, "If I funk'd it before, I think you're funking it now?" "You see, the operation is often fatal." "One in three of the patients die, don't they?" "Yes; and you might be the one. But how do you know?" "Oh, I've been reading all about it. Do you think, if I do get over the operation, that I shall be free from my pain? That's what I want to know." "I see no other way of relieving you; and I see no reason to doubt that, if you recover, you will afterwards be quite well. But what if you do not survive the operation?" "Ah! then there will be one poor sufferer less in the world."

The indications for the operation having become so clear, it was carried out on June 10th, 1878, when I had the assistance of Dr. Berryman, of St. John, New Brunswick, Dr. Halliday Croom, Dr. Berry Hart, and Mr. A. H. Barbour.

Remembering the alarming collapse that occurred when she was under the influence of chloroform during the operation for piles, I had asked Dr. Hart, who took charge of the anæsthetising of the patient, to provide himself with both ether and chloroform. He began with the ether; but it was long in inducing narcosis; so that it seemed as if the quantity provided would be all evaporated before the patient was fully asleep; and the amount of the vapour in the room was becoming so disagreeable that the further narcosis was induced and kept up by means of chloroform, with the usual comfort and success.

The abdomen was exposed, the surface washed with a solution of carbolic acid, and the opening made under a cloud of carbolic acid spray. An incision, two-and-a-half inches in length, was made in the linea alba, the lower angle of it being half an inch above the upper margin of the pubic bone. There was considerable difficulty experienced in recognising the surface of the peritoneum, because the omentum stretched down behind it into the pelvis, and was partially adherent at the point of perforation. Two small bleeding points were secured with Péan's forceps. After separating the omentum, and extending the incision through the peritoneum to the length of the skin-aperture by means of a probe-pointed bistoury, I passed two fingers of the right hand down into the pelvis to the back of the uterus, ran them along the right Fallopian tube, and, as I had expected, readily found the right ovary and pulled it up to the opening in the abdominal wall. I passed an aneurism-needle, threaded with strong silk soaked in carbolic acid, through the pedicle, so as to be able to tie it with a double ligature. After tying it at both sides, I had the ends of one of the ligatures cut short; and then, for security, I tied the ends of the remaining ligature round the entire pedicle. I ought then to have cut the ends short. As it was, however, the first time I had trusted an ovarian pedicle to a ligature, and there was no great length of pedicle to deal with in this particular case, I left the ends long, with the view of being able to pull up the structure before closing the wound, to make sure that no oozing of blood was taking place. I then tried to reach the left ovary. I had left it last, because I knew it was most adherent, and that it was placed lowest in the pelvis, and thus was not likely to be so easily accessible. By introducing the first two fingers of the left hand, I could barely touch it, and the relation of the omentum caused additional difficulty. I therefore enlarged the opening to the extent of three and a half inches, so that it was just of sufficient length to admit the four fingers and palm of the left hand. One felt that the experience the fingers had gained through frequent introduction into the uterus for the detachment of adherent portions of placenta in cases of miscarriage was now immensely helpful in enabling one to distinguish the softer texture of the omentum, and in detaching it from the firmer surfaces of the uterus, Fallopian tube, and ovary, to which it had acquired pretty extensive adhesions on this side. After it had been separated, the ovary was caught between the fore and middle fingers, and pulled up toward the wound along with the extremity of the Fallopian tube, which was inseparably glued to it by old adhesions. The ovary was irregular on its surface, from the

* Communicated to the Edinburgh Medico-Chirurgical Society, March 4th, 1879.

† *Edinburgh Monthly Medical Journal* for September 1878, p. 265; and *Transactions of the Obstetrical Society of Edinburgh*, vol. v, p. 138.

varying size of some of the ovisacs, which were dropsical; and when it appeared within the wound, surrounded by a crowd of small cysts springing up in the tissues at its base, it gave an impression as if one were looking at an incarnate effervescence. The aneurism-needle, threaded as before, was passed through the broad ligament from behind forward; and, the thread having been divided, one half was tied outside the fringed extremity of the Fallopian tube, where it was adherent to the ovary, and the other half over the Fallopian tube, about an inch from its uterine end. The ends of the inner thread were cut short; and the outermost thread was made to encircle the whole pedicle, and tied tightly around it. The ovary, with the outer third of the Fallopian tube, were cut off with a bistoury, the remaining ends of the thread were cut short, and the pedicle was allowed to fall back into the pelvis. The long ends of the thread attached to the right ovary, which had been left hanging out of the wound, were now used to pull the pedicle again into view. Whether it was at this moment that it slipped off the pedicle, I cannot tell; but the loop that had been tied round the whole pedicle was found to have got loose; and, as there was a slight oozing of blood from the surface, a new thread was thrown round the pedicle, and firmly tied. The ends of both the threads having been cut off, this pedicle was also let fall into the pelvis.

Very little blood had escaped during the operation. The peritoneal cavity was, however, carefully sponged, and, no further escape of blood being visible from the pedicles as they were looked at *in situ*, the abdominal wound was closed. It was secured by means of three deep silk sutures, each threaded on two needles, which were passed from within outwards, close to the peritoneal edge of the wound, and half an inch from the skin-margin. The edges of skin were further adapted by means of four superficial horsehair sutures. A piece of cotton-wadding soaked in carbolic oil was laid upon the wound and covered with a thick sheet of the same wadding, and kept on with a flannel roller wound round the abdomen.

The clinical history I give from the notes kept by Mr. Barbour.

"June 10th. Operation performed to-day antiseptically, lasting from 12.20 to 1.40 P.M.; 3 P.M., pulse 106, weak; 10 P.M., pulse 100; temperature 100.4; urine was drawn off by catheter.

"June 11th. Seven A.M., pulse 100; temperature 100.4; 10 P.M., pulse 98; temperature 100.4. She felt great pain in the abdomen last night till injection of morphia at 2 A.M. No sleep. She passed urine herself, a few drops of blood after it. Catheter not used again. She was complaining of pain in the abdomen and back. She began to-night to take bromide of potassium; twenty grains taken by bed-time.

"June 12th. Seven A.M., pulse 97; temperature 99.8; 10.30 P.M., pulse 97; temperature 99.8. After a morphia injection at 10.30 P.M. last night, she slept off and on for half-hours till 3 A.M., and after that till 6 A.M. At 10 A.M., the abdominal wound was dressed; it looked well; no tension or redness; no tenderness on pressure. The pain in the abdomen and back was less to-day than yesterday. Menstrual flow began.

"June 13th. 10.30 P.M., pulse 104; temperature 100.3. She complained of heat and great thirst since 6 P.M. yesterday, continuing all night. Two-thirds of a grain of morphia was given. The menstrual flow continued.

"June 14th. Eight A.M., pulse 104; temperature 100.3; 10 P.M., pulse 96; temperature 99.6. She still complained in the morning of heat and flatulency; cooler to-night. Two-thirds of a grain of morphia was given. Menstruation continued.

"June 15th. Ten A.M., pulse 96; temperature 98.6; 10 P.M., pulse 96; temperature 99.8. No one watched by her last night. She slept for two hours; awoke between 3 and 4 feeling very sick; dosed till 7, when she awoke sick again, and vomited. The bromide was stopped this morning. The wound was dressed at 11.30 A.M. All the horsehair and one silk sutures were taken out; the other silk sutures were removed at 4 P.M. The wound looked well, healing by first intention. Three long strips of plaster were applied. There was no inflammation or suppuration around the stitches, which were quite sweet when removed. There was slight friction to touch on the right side of the abdomen this morning, but diminished by night. A tube was passed *per rectum*, but only a few bubbles of gas escaped. The menstrual flow was diminished. No hypodermic injection was given.

"June 16th. Ten A.M., pulse 96; temperature 99.6; 10 P.M., pulse 96; temperature 99.6. The menstrual flow ceased.

"June 17th. Ten A.M., pulse 84; temperature 99.2; 10 P.M., pulse 96; temperature 99.2. No injection was given last night. She did not sleep till the morning. She drank some milk now.

"June 18th. Ten A.M., temperature 99.2; pulse 96; 10 P.M., temperature 99; pulse 84. The oiled cotton was removed.

"June 21st. Pain in the lumbar region came on last night and slight discharge.

"June 23rd. The discharge ceased. She got up for a little last night, and sat on a chair."

From this time, the convalescence of the patient progressed very steadily. At the usual period in July, a menstrual discharge came on. It was, however, of shorter duration and attended with far less suffering than she had ever experienced. In the month of August, the first time for twenty six years, she passed the dreaded week without having any catamenial flow and without being obliged to keep her bed. There was a slight appearance in the month of September attended with some suffering; but it lasted only for a day, and did not necessitate confinement to bed. In October and November, she was well. In December, a slight and almost painless discharge at the regular time. In January and February 1879, she remained well, only having some degree of headache and general uneasiness at the periods. Yesterday (March 3rd), a few days after the proper day, some uterine hæmorrhage began, and with something of the old suffering. It is already lessening, however, to-day.*

On examination, I find that the uterus is becoming distinctly reduced in size when grasped between the fingers. There is no tenderness or fulness to be felt in the situation of the pedicles. The uterus is freely movable. There is no indication of any inflammatory process in the pelvis. The vaginal roof, even, begins to contract and its surface to become roughened from the same kind of colpitis which is frequent in elderly women, and which I have been in the habit of describing to my students as colpitis senilis.†

COMMENTARY.

I. HISTORY.—The operation which I had thus the privilege of performing for the first time in Scotland has but a brief history. Dr. Aveling has shown‡ that the late Dr. Blundell, in 1823, suggested the extirpation of the healthy ovaries in "the worst cases of dysmenorrhœa and in bleeding from monthly determination on the inverted womb, where the extirpation of that organ was rejected". The proposal, however, was still-born—perhaps I should rather say it was prematurely born—and no one carried it into effect for nearly half a century.§ The first in point of time to extirpate the undeveloped ovaries was Professor Hegar|| of Freiburg, on July 27th, 1872. It was a case of intolerable ovarian neuralgia. The patient died four days later; and Hegar did not repeat the operation till 1876. On August 17th, 1872, three weeks after Hegar had operated on his patient, Dr. Robert Battey of Rome, Georgia, U.S.A., without knowing that it had previously been suggested or attempted, performed the operation on a patient who had been for long a sufferer from menstrual distress which nothing had ever effectually relieved. The operation was a success. It was recorded in the *Atlanta Medical and Surgical Journal* for September 1872. Battey repeated the operation in other patients, and continued to publish the results of them.¶ To him, therefore, belongs the credit, not only of having independently conceived and carried out the operation with success, but of having impressed the profession with a due sense of its value in a certain group of otherwise intractable cases. It has been repeated by various operators, such as Marion Sims,** Trenholme,†† Gopdell,‡‡ Peaslee,§§ Thomas,||| Gilmore,¶¶ Pallen,*** and Engelmann††† on the other side of the Atlantic; and in Germany by Freund, Kaltenbach,‡‡‡ A. Martin§§§, and Tauffer.|||| In Britain, the only case that I know of is that to which Mr. Spencer Wells¶¶¶ refers as having been carried out by himself, but of which he has never, so far as I am aware, published the details. Hegar**** and Engelmann††† have re-

* Continued in less than the usual quantity off and on for a fortnight. The periods for April and May, however, have come and gone without any threatening of discharge (May 12th).

† "Colpitis vetularum" of Dr. Carl Ruge (see *Zeitschrift für Geburtshülfe und Gynäkologie*, vol. iv, p. 144).

‡ *The Obstetrical Journal* for January 1879, p. 617.

§ The ingenious operations which Keberlé performed in 1863 and in 1869 (see his article "Ovaries" in the *Nouveau Dictionnaire de Médecine et de Chirurgie pratiques*, xxv, 600-603), are not cases of double oophorectomy.

|| "Die Castration der Frauen", Volkmann's *Sammlung klinischer Vorträge*, Nos. 136-138, p. 82.

¶ *Transactions of the American Gynecological Society*, vols. i and ii.

** Remarks on Battey's Operation in *BRITISH MEDICAL JOURNAL*, 1877.

†† *American Journal of Obstetrics*, October 1876.

‡‡ *Ibid.*, July 1878; and *Transactions of American Gynecological Society*, vol. ii.

§§ *Transactions of American Gynecological Society*, vol. i.

||| *Ibid.*

¶¶ *Atlanta Medical and Surgical Journal*, September 1874.

*** Referred to by Engelmann.

††† *American Journal of Obstetrics*, July 1878.

‡‡‡ See Hegar, *Die Castration der Frauen*, p. 126.

§§§ *Berliner Klinische Wochenschrift*, 1878, No. 15.

|||| *Die Castration der Frauen*, Buda-Pest, 1878. For a copy of the reprint from the *Pester Mediz.-Chirurg. Presse* I am indebted to the kindness of Mr. Joseph Bell.

¶¶¶ In his interesting lectures on "The Diagnosis and Surgical Treatment of Abdominal Tumours", *BRITISH MEDICAL JOURNAL*, 1878, p. 85.

**** *Op. cit.*, p. 126.

†††† *American Journal of Obstetrics*, July 1878, p. 472.

spectively given tables of the operations hitherto performed. In these tables, however, they both register a series of cases which ought not to be included in the same category. They include, namely, cases where only one ovary was removed.

Now, although various operators, and amongst them Battey himself and Dr. Marion Sims, stopped short with the removal of a single ovary, their operation could not have the value and effect of the extirpation of both the ovaries. Whatever idea may have guided the operator in removing one ovary alone, and whatever results may have followed from the operation, all such cases ought decidedly to be eliminated from any table that will serve to guide us to a due appreciation of the value of the operation which Battey first successfully carried out—the double oophorectomy. I exclude even from the table such cases as the historical one of Pott or the more recent ones of Esmarch and others, where the dislocated ovaries of both sides were excised from hernial sacs. This table is thus purely a register of the genuine cases of double oophorectomy, thirty-five in number, to which I have had access or to which I find a reference. After considering

II. The Object of the Operation, we shall be able, from a study of the table, to see

III. The Indications for the Operation ;

IV. The Results ; and

V. The Methods of conducting the Operation.

II. OBJECT OF THE OPERATION.—The object of the operation is to arrest the cyclical changes to which women are subject, by removal of the organs in which the supreme phenomenon of the monthly period occurs. Whatever may yet be discovered as regards the nervous centres that dominate the menstrual flows and ebbs, it seems to me that we are clearly entitled to regard all the other phenomena as dependent on the ovarian changes. Despite the adverse or doubtful opinions of St. Hilaire, Klebs, Beigel,* and others, and the seemingly adverse observations of Slavjansky,† I believe I express not only the opinion of the best emmenologists, but the true position of the best emmenology, in stating‡ that the central spring of menstruation is to be found in the ovaries, and more especially in the successive development of individual ovisacs. Battey§ and Hegar|| in their respective essays, have both collected cases enough from the records of the ovariologists to show that removal of the ovaries is usually followed by cessation, more or less speedy and complete, of the menstrual discharge. Where patients have continued to be the subject of hæmorrhages from the genital fissure, after having been operated on for removal of both ovaries, the discharges may be truly catamenial. In that case, either (1) the operator has removed not an ovarian but some other tumour, and one or both ovaries may have been left ; or (2) one of the ovaries has been only partially removed ; or (3) the patient may have been the subject of three ovaries, such as are figured in Winckel's *Pathology of the Female Sexual Organs*,¶ and such as I saw in a preparation brought before the meeting of the German Naturalists and Physicians in 1878, by Kochs. Again, such hæmorrhages may not be catamenial at all, but dependent on the presence of polyp or other morbid changes in the uterus. And, again, when a woman who has thus been operated on alleges that she is menstruating regularly, Hegar** warns us that she may really have no discharge at all, but fears that the admission of the truth will bring a slur upon her womanhood.

III. INDICATIONS FOR THE OPERATION.—The indications cannot be grouped together according to the pathological condition of the ovaries, which, in most instances, have been the seat of inflammatory changes, and of which the one may be found fixed with inflammatory adhesions, while the other is healthy and free. Various forms of suffering have usually been conjoined in the same patient ; but when we analyse the conditions which have been the warrant for undertaking the operation, we may group them under three divisions.

1. *Dysmenorrhœa*.—In the first and most frequent group of cases, the patient has been the subject of intense suffering, intolerable, intractable, and lasting for years, at each monthly period. Usually, there has come to be associated with this dysmenorrhœa, whether the seat of the suffering be more distinctively uterine or ovarian, the dyspepsia, the hysteria, the general ill-health that are due partly to the suffering, partly to the remedies used for its relief. In eighteen out of the thirty-five cases, this was the leading indication.

TABLE of Thirty-five Cases of Double Oophorectomy.

No. & Operator's Name.	Indications for Operation.	Incision	Immediate consequences.	Remote consequences.
1. Battey....	Amenorrhœa ; severe menstrual molimina ; epileptic convulsions ; vicarious bleeding ; frequent pelvic cellulitis	Abd.	Prolonged convalescence	Great improvement
2. "	Continuous ovarialgia ; insanity threatened	Vaginal	Rapid recovery	Do. do.
3. "	Ovarialgia ; dysmenorrhœa ; insanity threatened	"	Death	—
4. "	Dysmenorrhœa & ovarialgia	"	—	Great improvement
5. "	Since first child, metritis, cellulitis, irritable uterus	"	Bleeding severe, stopped by ice ; cellulitis ; all ovarian tissue not removed	No improvement
6. "	Dysmenorrhœa ; ovarialgia ; beginning menstrual disturbance	"	—	—
7. "	Atresia (vaginal) following a forceps operation ; severe menstrual molimina	"	—	Great improvement
8. "	Dysmenorrhœa ; ovarian & pelvic pain	"	Ovarian tissue (right) not all removed	No improvement
9. Hegar	Fibroma uteri, with severe bleeding	Abd.	—	Good result
10. "	Ditto ditto	"	—	Ditto
11. "	Fibroid growing rapidly ..	"	Abscess & tedious convalescence	Fair result
12. "	Fibroid and dysmenorrhœa	(lateral) Abd.	—	Very good
13. "	Fibroid ; severe menorrhagia	(lateral)	Death from septic peritonitis	—
14. "	Severe neuralgia ; daily hypodermic injections of morphia	—	Death	—
15. "	Retroversio uteri fixed by adhesions ; perimetritis	—	—	Good
16. "	Dysmenorrhœa ; cystitis ; nervous disturbance	Abd.	—	Good
17. "	Dysmenorrhœa ; irregular menstruation	(lateral) Abd.	—	Good
18. Engelmann	Gastric and bronchial hysteroneuroses	"	Died	—
19. "	Ovarialgia increased by slightest exertion ; epileptiform attacks	"	Died	—
20. "	Ovarialgia, dysmenorrhœa, ovarian pain, & constant pelvic pain	"	Died	—
21. Goodell ..	Fibroid	Vaginal	—	Cure complete
22. " ..	" Pernicious" menstruation	—	—	Somewhat improved
23. " ..	Do. do. ..	"	Died	—
24. Thomas ..	Ovarialgia ; dysmenorrhœa ; <i>petit mal</i>	"	—	Somewhat improved
25. Trenholme	Uterine fibroids	—	—	Cure complete
26. Peaslee ..	Absence of uterus ; amenorrhœa ; pain <i>in coitu</i> ; hystero-epilepsy	—	Died	—
27. Gilmore ..	Atrophy of uterus ; amenorrhœa ; cerebral congestion	Abd.	—	Cured (?)
28. Pallen	Dysmenorrhœa ; ovarialgia	"	Died	—
29. Kaitenbach	Uterine tumour	"	Died	—
30. Freund	Fibromyoma	"	Died	—
31. Sims	Ovarian pain and retroversion	—	Died	—
32. A. Martin.	Fibroid	—	—	Good
33. " ..	Fibroid	—	—	Good
34. Tauffer ..	Dysmenorrhœa	Abd.	—	Cure
35. A. R. Simpson	Dysmenorrhœa, etc.	"	—	Good

2. *Menorrhagia*.—Professor Trenholme and Professor Hegar of Montreal came independently to the conclusion that, in cases of uterine fibroids, with profuse menstrual hæmorrhage, where the strength of the patient was becoming reduced and her life endangered, it would give her the best chance of cure to remove the ovaries. They both put their idea in practice, the former* in January 1876, the other† in July of the same year. They have been followed in their practice by Freund, Goodell, etc., and the results so far have been encouraging. Of the thirty-five patients, eleven were oophorectomised with the view of arresting excessive uterine hæmorrhages.

3. *Amenorrhœa*.—The remaining cases do not lend themselves so easily to a categorical group. They had only this in common, that the catamenial flow had never appeared, or had become lessened or alto-

* *Canada Lancet*, July 1876 ; abstract in *American Journal of Obstetrics*, October 1876.

† *Op. cit.*, p. 92.

* *Pathologische Anatomie der weiblichen Unfruchtbarkeit*, Braunschweig, 1878, p. 70.

† *Archives de Physiologie*, 1875.

‡ "Emmenologia," *Journal of Obstetrics for Great Britain and Ireland* for 1875-6, p. 682 ; and *Transactions of Edinburgh Obstetrical Society*, vol. iv, p. 186-187.

§ *Normal Ovariectomy*, Atlanta, Georgia, pp. 11-14.

|| *Op. cit.*, pp. 64-74.

¶ *Die Pathologie der weiblichen Sexual-Organen*, Leipzig, Erste Lieferung, Tafel xxxiv.

** *Op. cit.*, p. 92.

gether suppressed. This might be from congenital malformation of the uterus, as in Peaslee's or Gilmore's cases, or from acquired atresia vaginae, as in one of Battey's. But it was not the mere absence of the uterine flow in women in whom yet the menstrual nix and the ovular activity were sufficiently manifest, that formed the warrant for operative interference. To justify such a grave operation, there required to be added to this menstrual disturbance some grave constitutional disturbance, such as—

a. *Threatened Insanity*, as in cases recorded by Hegar, Battey, and Thomas.

b. *Hystero-Epilepsy*, and afterwards true *Epilepsy*, as in the interesting case of the late Dr. Peaslee; or

c. *Convulsions*, as in Gilmore's and one of Battey's patients.

In all the cases as yet recorded, the resources of medicine and surgery have been taxed to the uttermost in behalf of the sufferers, before it has been suggested to them to submit to the double oophorectomy as a *dernier ressort*. All that is claimed for it is, that it forms an addition to our resources in cases of otherwise intractable suffering, where the patient has as the only alternative the prospect of a life of pain; and in cases where her life is more immediately endangered by exhausting discharges, or her mind affected from nervous disorders dependent on the ovarian function.

IV. RESULTS OF THE OPERATION.—These have to be considered both in regard to the death-rate and to the effects upon the survivors.

1. *Mortality*.—The mortality attendant on the operation has as yet been high—startlingly high as compared with the recent successes of the ovariologists. Of the thirty-five patients operated on, thirteen died, giving a mortality of one in 2.7, or 37.1 per cent.

2. *Health of the Survivors*.—Of the twenty-four patients who recovered, two are reported as having received no benefit; eleven, or 30 per cent., are stated to have been greatly improved; nine only, or 27 per cent., were fairly cured. The results thus far may not seem very encouraging, but I have no doubt they will improve, as has been the case with ovariectomy, as operators acquire more experience in the performance.

V. THE OPERATION.—In carrying out the operation, different methods have been adopted as regards the modes of access and the modes of removal.

1. *The Modes of Access*.—There are obviously two directions along which the surgeon may proceed in trying to reach the ovaries. He may operate from below or from above.

a. *Elytrotomy*.—In America, the operators have, in a considerable proportion of cases, reached the ovaries *per vaginam*. The vaginal operation seemed preferable, because the ovaries were close to the roof of the vagina, and easily accessible through an incision there, whilst the position of the opening was favourable for the free drain of any fluids, hæmatic or inflammatory, that might escape into the peritoneal cavity. There are, however, some drawbacks to the vaginal operation. These are as follows. 1. The incision has to be made at the bottom of a canal which is sometimes too narrow to allow comfortable access to it. This difficulty is all the greater in the case of the vagina of those dysmenorrhæic females who have never borne children, and have not lived a married life. 2. The posterior fornix may not offer a surface extended enough to permit the length of incision that is necessary to let fingers and instruments pass up to the ovaries. This drawback becomes more impressive in cases where the ovaries are fixed up at the pelvic brim, and cannot be dragged easily down through the opening. 3. When hæmorrhage occurs during the operation, the bleeding point is not easily caught, and the bleeding itself controlled. 4. The patient cannot well have the advantage of anti-septic measures, which can only be imperfectly applied to a vaginal operation.

b. *Laparotomy*.—In the greater proportion of cases, the ovaries have been got at from above, by cutting through the abdominal walls.

aa. *By Single Incision*.—Usually, a single incision has been made in the middle line, as in the common ovariectomy.

bb. *By Double Incision*.—But in cases of large uterine tumours, where the ovaries are to be removed with the view of arresting their growth and checking their attendant hæmorrhage, it is sometimes better to make two smaller incisions, one over each ovary. Hegar was thus able to reach and remove both ovaries, in a case where they could not have been removed through a single larger aperture. I have myself lately seen a patient with such a tumour; and if she ever be subjected to this operation, I am satisfied that it will be easiest and safest to attack the ovaries through two separate small openings at different parts of the abdomen.

2. *The Modes of Removal*.—The experience gained in ordinary ovariectomy in securing and separating the pedicle is not necessarily applicable to this operation; for here, on the one hand, we have not to

do with blood-vessels of such large calibre, and on the other, the body to be removed cannot be brought so far through the abdominal wound. The clamp is thus at once unnecessary and inapplicable.

a. *The Actual Cautey*, the use of which has been attended with such good results in many ovariectomies, could here only be applied by means of the galvano-caustic wire; and the galvano-caustic apparatus, the value of which I brought before the notice of this Society sixteen years ago*, has the great drawback of being very difficult to keep in working order.

b. *The Écraseur*.—In some of his cases, Battey separated the ovary with an *écraseur*, with satisfactory results; but it might sometimes be difficult with it so to adjust the grasp of the chain that neither, on the one hand, should any of the vessels in the broad ligament be injured, nor, on the other, should any fragment of the ovary be left behind.

c. It is only worthy, in passing, of historical note that, in one case where Battey failed to get an adherent ovary otherwise removed, he tore and clawed it away piecemeal with his *finger-nail*.

d. *The Ligature and Knife*.—The best of all the means for securing the pedicle, before cutting it through with knife or scissors, seems to me to be the application of a carbolised silk ligature. I had been strongly impressed with its value from reading the results of the experience of my former pupil, Mr. Knowsley Thornton;† and I employed it in the case of Miss K. with the most gratifying result. A question here suggests itself to me, which I think worthy of a satisfactory solution. Is it necessary to cut off the ovaries after strangulating their pedicles? It would be a great comfort to be able to close the abdominal wound with the absolute certainty that no internal hæmorrhage could occur; and this certainty we should have if we could arrest the ovarian activity by simply cutting off the blood-supply with a ligature. Experiment alone can determine what the result of such a simple application of the ligature would be; whether, for instance, it might give rise to a gangrenous or inflammatory condition, such as we see occasionally in ovarian cystomata, where the pedicle has become twisted, and such as might introduce an element of danger; or whether, on the other hand, the capillary circulation might not so far keep up the vitality of the organ, that some of the ovisacs at least would continue to grow and pass through their cyclical changes. We know that structures of simple connective tissue can live on beyond the noose of a firm ligature; but it has yet to be determined whether a glandular structure like the ovary can live on in such circumstances, and retain any functional activity; or whether we could not thus safely bring to an end the life-history of the ovisacs, while the connective tissues of the stroma retained their innocent vitality. The question would not be difficult of solution. Indeed, it might by this time have been solved, if our legislators had not laid an arrest on scientific investigation by passing an Act worthy of the dark ages, and for no good reason that one can see.

FIRST SERIES OF TWENTY-FIVE CASES OF COMPLETED OVARIOTOMY.

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I HAVE now completed ovariectomy in seventy-six cases. For convenience sake I shall record them in successive series of twenty-five, with such remarks as each series may suggest. I propose, however, in this paper chiefly to take up the question of the treatment of the pedicle by ligature. It will be unnecessary for me to enter on the historical part of the subject, as it is fully treated in some of the standard works on ovariectomy. I desire to place on record the results of my own experience and observation, and the conclusions at which I have arrived.

I performed my first ovariectomy on the 13th August, 1867, in what was then known as the London Surgical Home. The patient was a married woman, aged thirty-four, who had borne four children, the youngest of which was then nineteen months old. During the last pregnancy, she carried her ovarian tumour, which was first noticed just after the birth of her third child, as a small lump in the left groin. Her fourth child was well grown and delivered at full time; and, according to her statement, she was "nearly as large after as before" its birth. The tumour went on increasing until, about seven months later, it became necessary to do something for her relief. She was tapped on July 14th, 1866, in one of the general hospitals, when eighteen pints of fluid were removed. In all she was tapped five times, at decreasing intervals, to the extent respectively of six pints, eighteen pints, eighteen pints, and one unknown quantity. On the last occasion, which was

* *Edinburgh Medical Journal*, 1863, vol. xiv, p. 872.

† *BRITISH MEDICAL JOURNAL*, January 26th, 1878, p. 125; October 19th, 1878 p. 594.