in restoring the shape, firmness, and function of the part, and how satisfactory a mode of treatment it is. I quite admit that in the case of delicate feeble women, who recover badly from any accident, and who have suffered, probably seriously, from the shock of the fall, and who do nothing to help themselves or carry out your instructions, the results are not always so rapid or so satisfactory as I have shown you in the patients with whom we have had to do lately; but these bad cases are the exception, and will, I think, if you strenuously carry out the early and effective setting and passive motion, become very rare in practice. The loss of their patient's confidence, which surgeons frequently sustain in dealing with Colles's fracture, is due chiefly to hesitation in recognising its true nature, the failure to reduce the fragments properly, and the too long fixture and consequent rigidity of fingers and wrist, which result from the commonly followed mode of treatment.

I do not find that starch, paraffin, or plaster bandages are desirable in managing this fracture, seeing that they require both time and trouble to remove them. As the poroplastic moulds itself very accurately to the part, no undue pressure is caused, and so no pain.

Many surgeons would object to the application of such manipulation as that which I employ when there is any impaction of the fragments, fearing the evil effects of the disjunction of the fragments. I have never found any harm to result, and I cannot recall at present any case in which replacement was impossible. I am aware that such cases have, however, been recorded. I have heard of instances in which, even after the soft parts were removed, the lower fragment could not be got into place; and in one specimen to be seen in the Royal Infirmary Museum, a detached fragment is said to have occasioned this. If I found a tendon so placed and so tense as to appear the cause of the difficulty, I would consider the propriety of dividing it subcutaneously. Without complete replacement of the fragments, deformity cannot be removed, and function quickly and satisfactorily restored.

But, to draw these remarks to a close, I may say that the three injuries with which Colles's fracture may be confounded are sprain and dislocation of the carpus, and transverse fracture low down of the bones of the forearm, with displacement backwards of the carpus and lower fragments.

As to the confusion with sprain, it is when neither deformity, crepitation, nor unnatural mobility are apparent, and a certain amount of power remains, that fracture is supposed not to have occurred. As, too, in such cases, the head of the radius may rotate when the hand is acted on, it is concluded that the continuity of that bone remains intact. If the pain be concentrated near the lower end of the radius, and below the styloid process of the ulna, and be not diffused over the articulation; and if on making decided extension of the hand, we find unnatural mobility—a hollow and a motion—a little way above the lower end of the radius, then it is fracture, and not sprain. It is, however, to be remembered that indirect violence does not readily break the bone of a strong adult; and that in such persons the ligament of the joint may be thus seriously stretched or ruptured. Still, the test by extension will clear up the question of fracture. In no case can we depend on detecting crepitation—in fact, it is the rare exception to find it, unless much and unjustifiable force is used.

As regards dislocation, you may dismiss it altogether from your minds. If such an accident ever occur (and it is extremely doubtful if it does without a wound, and, in fact, without complete disorganisation of the articulation), it is so seldom, that many of the most experienced hospital surgeons have never met with it. Men of limited experience see it, as they suppose, frequently; and most practitioners in the early part of their career constantly come across it. I have myself seen three cases within the last month which were said by medical men of considerable experience to have been dislocations. They were all well-marked examples of Colles's fracture, with great displacement. It is mainly to Dupuytren that we owe the recognition of this important clinical fact. Up to a certain period of his career, he believed in dislocation of the carpus like others; and, at the end of his unique experience, he denied its occurrence altogether. Malgaigne, an authority hardly, if at all, less weighty, almost goes the same length. What Dupuytren never saw, you are not likely to meet with; so do not suppose that, because there are projections and hollows before and behind, and fixture and distortion, therefore it is a dislocation. I cannot describe to you the appearances of dislocation of the carpus from personal observation, as I never saw it; but I would imagine that the shape and size and relative position of the projections (the articular surfaces) behind and in front would be very different, and occasion a very much more marked deformity in dislocation than we ever have it in Colles's fracture, and the styloid process of the radius would continue to project lower than that of the ulna, in place of being shortened so as to become of the same length, or even lie higher up the arm than the styloid process of the ulna, as it is in fracture. In fracture, moreover, the margins of the arm

are deformed as well as the anterior and posterior surfaces, as they cannot be in dislocation, and the radius can be shown by measurement to be shortened along its posterior surface. The twist of the hand, the unnatural mobility at a point of the radius when the hand is much extended and the chief seat of pain, will all conjoin to show you what is the real nature of the injury. In dislocation, there must be considerable shortening of the whole forearm (both bones), if we measure from the knuckle of the middle finger to the olecranon.

Transverse fracture of both bones low down, with displacement of the carpus and lower fragments, might have (and I believe has) been mistaken for dislocation; but it could hardly be taken for Colles's fracture or Colles for it. The lost relationship of the styloid processes to the carpus, the measurement from the knuckle to the upper part of the posterior projection and to the olecranon, the ease of reduction and redispacement, the crepitation, and also in most cases the kind of violence applied, will readily distinguish them.

Finally, it may be put thus for practical purposes: that if a person—especially an elderly individual—fall with violence on the hilt of the hand, and pain low down in the radius come on and continue—if the function be embarrassed, and if, on extending the hand and placing the finger over the radius about an inch from its lower end, we find the bone notably sink and the pain augmented—we may conclude it is a Colles's fracture we have to deal with, even though there should be no marked deformity and no crepitation. In any case of insuperable doubt between fracture and sprain, treat it as a fracture.

SUCCESSFUL CASE OF BATTEY'S OPERATION, OR OÖPHORECTOMY.

By HEYWOOD SMITH, M.A., M.D.,

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IN the case of a young operation such as Battey's, it is due to him whose enterprise initiated its performance, as well as to the profession, and to those whose suffering we hope to relieve, that each case should be fully and accurately reported, in order that we may arrive at a right conclusion as to its indications, its safety, and its justifiability.

In the following case I will give, as briefly as possible, a sketch of the former history and treatment; then, more fully, an account of the operation, with a description of the ovaries themselves; and afterwards will conclude with such remarks as the case and the operation suggest.

A. B., aged 40, was admitted into the Hospital for Women, February 10th, 1879. She first became an in-patient on March 20th, 1874. The catamenia began at the age of thirteen, and were regular till three years before her admission; they were scanty and painful. For one year, she had suffered from constant retching, with a dull aching pain in the right groin; there had been profuse leucorrhœa for the past three months. On vaginal examination, the uterus was found to be natural in direction; the uterine sound passed two and a half inches, with pain at the fundus. There was hyperæmia of the cervical canal. A seton was inserted above the pubes; the general treatment consisted of tonics, morphia, Indian hemp, iodine externally, and as a vaginal plug. She left the hospital on June 6th, slightly relieved, but the dysmenorrhœa still persistent.

In Dec. 1874, she became an out-patient, and had a galvanic stem introduced with some temporary relief.

In 1875, A. B. was again admitted to the Hospital on March 4th, and remained in till May 1st. She suffered from severe pain in the right inguinal region, which was much increased at the periods, and especially for one week before each appearance; there was also severe pain during defæcation. There was tenderness on deep pressure over the ovary, and the pain was increased on the least exertion. During her stay in the hospital, a fissure of the rectum was operated upon by Mr. Reeves. The chief treatment was liniment of belladonna and chloroform, which gave some relief, tonics, pulsatilla, belladonna, and arsenic. The cervix uteri was scarified and leeches, and Graily Hewitt's cradle pessary was worn for a time with benefit.

In 1877, she was admitted on Oct. 22nd, under the care of Mr. Reeves, for a fissure of the right anterior aspect of the anus, which he divided. A vaginal examination was made on Nov. 13th. The os uteri was directed towards the perineum. The uterine sound passed two inches and three quarters. The right ovary could be got between the fingers in the conjoined examination; pressure on it produced pain, which was referred to the upper part of the sacro-iliac synchondrosis.

Nov. 27th. The cervix was incised high up with the hysterotome, and Dr. Wynn Williams' stem and shield were inserted. She was discharged Nov. 28th.

In 1878, I had her re-admitted under the care of Dr. Protheroe Smith, April 11th; there were pain and vomiting after food and exercise. Abdominal palpation gave no indication. On vaginal examination, the uterus was normal in size and position. To the left and behind the cervix, there was a hard irregular nodulated body (ovary), tender to the touch; there was sacral pain.

April 22nd. The indurated nodule in the left *cul-de-sac* was less.

April 25th. The pain on the right side was worse than on the left, especially on walking. On vaginal examination, the swelling on the left was smaller, with two cherry-like tumours, movable, hard, and tender.

May 15th. She was bled to sixteen ounces, with some relief. The blood contained five ounces of serum; no buff nor cupping.

May 17th. The venesection was repeated; nevertheless the catamenia were painful.

June 6th. The ovary was not felt.

June 13th. She was not free from old pain. The general treatment consisted of antimony and morphia.

She was again admitted under my care Feb. 10th, 1879. Her countenance was pale, easily flushed. There was general emaciation. Her face was pinched. Tongue nearly clean. Pulse 84, steady. The abdomen was flat and soft. There was slight elevation of the percussion note in the right inguinal region. On vaginal examination, the uterus was found in the natural position. There was slight fulness in the neighbourhood of the right broad ligament, just behind which a small body (the ovary), was felt.

Feb. 18th. By vaginal and rectal examination, the right ovary was scarcely felt at all; it was not enlarged, nor hard, easily slipping from the finger; it was tender; the pain was chiefly referred to the right groin.

Feb. 20th. The catamenia were present, with much pain. Indian hemp was given with some relief; afterwards mercury to slight salivation, and valerian.

March 10th. A small phantom tumour made its appearance to the right of the umbilicus; it seemed continuous with the rectus muscle. Under chloroform, this tumour disappeared temporarily: only on very deep pressure could the right ovary be reached.

March 19th. A blister was applied over the right ovary.

March 24th. The galvanic current was applied: the positive pole was placed in the posterior *cul-de-sac* and the negative over the painful spot on the abdomen near the umbilicus; but it caused so much pain that it was stopped. The poles were reversed with the same result. After all this varied treatment, the patient's condition was in no way improved, except that the ovaries were less large, and she became very desirous that something should be done to relieve her, if possible. As I was quite convinced that her suffering was due to some diseased condition of the ovaries, I proposed to her that they should be removed: and, after putting before her the very serious nature of the operation, and its great risk to life, but at the same time telling her that, if successful, I fully believed it would hold out to her the best prospect of a cure, she urgently requested that I should perform the operation.

And here I would remark that some difference of opinion should guide us in dealing with the rich and the poor. Where a patient is able to afford to lie up and have every appliance for the relief of pain, when, at the same time, her general health is not suffering much, she might be advised to wait and tide over the time till the menopause. But when a patient is poor and dependent upon others who are equally poor, when her sufferings extend over at least three weeks out of every four, when she is quite unable to earn her living, and when she prefers running a certain amount of risk to continuing in her wretched and useless state, then we are bound to listen to her pleading, and do what improved science places in our power to do to relieve pain. I, therefore, trusting to my diagnosis, determined to operate and so give her the best chance I could.

I think it right to state that some of my colleagues opposed the operation, and the rest, while unwilling to advise it, left it to my own responsibility, which I willingly incurred.

The operation was performed under carbolic spray on Thursday, April 24th, at 2 P.M., Mr. T. Bird administered the bichloride of methylene, and Dr. Richard T. Smith assisted me. Most of my colleagues and some visitors were present.

An incision about four inches in length was made through the abdominal parietes in the median line, to within about one inch of the pubes. The abdominal walls were thin and bled rather freely. The recti were separated with the handle of the scalpel, and, after some little difficulty, owing to the intestines lying so closely to the peritoneum, the latter was divided on a director. The incision was then slightly extended, as the recti were very rigid, and the fingers of the left hand were passed into the pelvis until the fundus uteri was felt; the oviduct

was traced out and the right ovary found; it was then drawn up, but could not be lifted higher than the lower angle of the wound. The mesovarium was then transfixed with a curved needle, with a handle carrying a fine double carbolised silk ligature. The pedicle was tied in halves, and one ligature brought round the whole: the ligature, however, broke as the last knot was being tied, so a stouter one was passed round the pedicle and the ovary cut away with curved scissors. The ligatures were cut short, and the pedicle dropped in. The left ovary was then searched for, but was not so easily found; it was lying low down, and quite to the left boundary of the pelvis. This was treated in the same way; the ligature, however, being of the stouter silk. Neither oviduct was included in the ligature. A small cyst on its surface containing bloody fluid ruptured as it was being held during the tying of the ligature, the pelvis was therefore sponged out carefully and the wound brought together with nine silkworm sutures passed through the peritoneum, but not through the muscles. The wound was dressed with three small bags of lint filled with carbolised disinfecting powder, over them four folds of thymol gauze, then eight folds of carbolic gauze with waterproof, cotton-wool, a dry cloth, and strapping; a flannel binder was then applied, a morphia suppository (half a grain) was introduced, and the patient put to bed. The operation lasted forty minutes.

For the following valuable description of the ovaries and their microscopical appearances, together with the drawings, I am indebted to Dr. Gabbett, the Pathologist and Curator of the Museum to the Hospital.

The right ovary was small, irregularly oval in shape, length, three quarters of an inch. The surface was corrugated, and furrowed by deep sulci, presenting an appearance much resembling the cerebral convolutions. Its weight was fifty-seven grains (Fig. 1).

Fig. 1.—Right ovary (×2).

External examination showed no trace of cyst-formation, and the consistence of the organ was firm; but a section through it showed a great part of the interior to be hollowed out into numerous spaces (easily visible to the naked eye), filled with a transparent viscid fluid which coagulated in the process of preparation (Fig. 2). Under the

Fig. 2.—Transverse Section of Right Ovary, showing Alveolar Degeneration.

microscope, these spaces presented the following appearances. They were most numerous in the neighbourhood of the large blood-vessels near the hilus, but occupied nearly the whole of some transverse sections of the ovary; their shape was irregular, generally somewhat oval in outline. None of them had any distinct cyst-wall. They were bounded by the ovarian stroma, which was not in any appreciable degree condensed in their vicinity, but seemed on the contrary loose and retiform in many cases. Branching processes of the stroma, fine fibres, and blood-vessels of various sizes, passed into the interior of the spaces, and oval nucleated cells were imbedded in the contained homogeneous substance. In several instances there were masses of extravasated blood, either among the fibres traversing the cysts, or free in the cavities. In no case did a cyst present any appearance of being produced by the dilatation of a Graafian follicle: all were evidently new "alveolar" formations in the stroma of connective tissue (Figs 3 and 4). From an observation of a number of sections, it was easy to trace the successive steps in this process of alveolar degeneration. The smallest (latest formed) of the cysts—many of them of microscopic size—were entirely composed of a loose fibro-cellular network having all the characters of the normal ovarian stroma with its elements widely separated. In other cases, the interstices had become much larger and

the interstitial fluid greatly increased. Lastly, in the oldest cysts the fibres and cells scarcely existed at all, except in the form of isolated prolongations from the walls, and extensive hæmorrhages had occurred

Fig. 3.—Early stage of Alveolar Degeneration, with neighbouring Stroma containing Graafian Follicle (x60).

from the unsupported vessels. With the exception of these alveolar structures, the stroma of the ovary appeared to be normal. There were but few distinct Graafian follicles recognised, and in but two or three

Fig. 4.—Larger Cyst, with Hæmorrhage in Interior (x60).

instances was one found of fair size containing liquor folliculi and ovum (Fig. 3). The blood-vessels were very large and numerous, giving an absolutely spongy appearance to the central parts of the ovary (Fig. 5). There were some structures near the surface which appeared to be corpora lutea of menstruation in various stages of degeneration.

The left ovary was larger than the right; length rather more than an inch; weight eighty-five grains. The surface was corrugated, but wanting the deep sulci of the right organ. This ovary was considerably flattened, so as to present almost plane instead of convex surfaces between its free and attached borders. A cyst projected near the free border: it had been accidentally ruptured before examination, and contained blood-stained fluid; its wall was moderately thick, and its cavity capable of containing a large pea. Another cyst of nearly equal

size, situated at the attached margin, had apparently been opened in the course of removal of the organ, and a longitudinal section through the ovary showed two more similar blood-cysts in the interior (Figs. 6 and

Fig. 5.—Blood-Vessels of Central Part; from Right Ovary.

7). In other respects, the left ovary appeared to the naked eye identical in structure with the right. The microscope, however, showed certain differences. (1) The blood-vessels were rather more numerous. Some sections indeed presented an appearance exactly like that of a vascular tumour:—innumerable arteries and veins, coiled and tortuous, were

Fig. 6.—Left Ovary (x2).

found cut across in every direction, and where no large vessels could be distinguished, the tissue was channelled by dilated capillaries. This condition was not confined to the central parts of the organ, but networks of vessels approached almost to the surface. That the vascularity was not dependent on functional activity, is rendered probable

Fig. 7.—Section of Left Ovary, showing flattened condition, and Large Cysts containing Clots.

by the fact that not a single Graafian follicle approaching maturity was found in this ovary. (2) The structure was somewhat more fibrous and less cellular; the normal richly nucleated stroma being in many parts replaced by tracts of dense fibrous tissue. (3) In this ovary the cysts were more numerous and (with the exception of the large ones already mentioned) smaller than those in the right, and several spots where the tissue was only just beginning to degenerate, afforded still better opportunities for tracing the stages of the process. Where the stroma was thus as it were teased out by the accumulation of fluid in its meshes, it was easy to see small blood-vessels running unsupported in the interior of the embryo-cysts; thus accounting for the occurrence of the large hæmorrhages seen with the naked eye.

Progress of the Case.—The subsequent history may be summed up in a few words. The temperature after the operation was 100° Fahr.; at 7.30 P.M. it was 101.6°; the next day it fell to 98.8°, and did not at

any time again rise higher than 99.6°. She suffered occasionally for a few days from some pain, the first day in the right inguinal region, and afterwards with a sharp pain across the abdomen; this, however, soon passed away. Two days after the operation, a coloured discharge came from the vagina, which continued for five days; this was followed by leucorrhœa for three days more. As the patient had menstruated nine days before the operation, this discharge may be counted analogous to that which is not unfrequently observed in patients a few days after ovariectomy. In Professor Simpson's case, it is noted that the patient "menstruated" from the second to the sixth day after the operation. The wound was dressed for the first time and the sutures removed on the ninth day, when it was found to have united perfectly. The patient was allowed to get up for an hour on May 16th, and in a day or two was able to walk about the ward without pain. She left the hospital cured on May 23rd.

On May 30th, she went out to visit some friends in London, entailing a drive in three omnibuses, and a walk of over a mile, without experiencing any pain or inconvenience; whereas, for one or two years previously, she could take no exertion without violent retching. When seen on May 31st, she was well and free from pain. Vaginal examination showed the uterus to be somewhat to the right of the median line, and movable. There was no tenderness. There was some slight feeling of thickening in the region of the right broad ligament.

REMARKS.—Pathology. The chief interest of this and similar cases lies in their pathology, and in the question as to how far the manifested symptoms depend upon organic changes in the ovaries, and if so, whether, other remedies having failed, there is any contraindication to their removal. In the present case, the ovaries were never very large, and their tenderness varied from time to time, though the subjective pain was nearly constant. The chief changes seem to have taken place in the ovaries themselves, unaccompanied by any periovarian inflammation, which might have resulted in adhesion. I think we may dismiss the left ovary with but few remarks, as, although it was slightly the larger and contained two small cysts containing bloody fluid, yet it seemed to produce but little ill effect on the patient. It was felt and its cystic enlargement was recognised during the patient's stay in the hospital in 1878. Though its disease, differing slightly in kind from that of the right ovary, was, we might say, nearly as grave, it is remarkable that so little pain and discomfort were referable to its locality.

The right ovary, which was all along apparently the seat of the disease and the cause of the dysmenorrhœa (I take this expression in its widest sense, as including all the suffering both before and after the period), seems to have become subject to periodic congestion, *i.e.*, prior to each catamenial nixus, and under this intermittent distensive congestion to have become somewhat enlarged and tender. Treatment or rest gave from time to time temporary relief, but did not prevent the recurrent attacks of pain.

After a time, another change came on: the vascular area, probably in consequence of the vascular distension, encroached on the tissue of the ovary, that tissue about the same time undergoing such a change as rendered distension difficult and painful. For the ovary, as will be seen by the description above, was even smaller than the healthy organ, and was so much the subject of disease analogous to that of cirrhosis in other organs, that its surface was puckered in, and it presented the appearance as of cerebral convolutions. This ovary also exhibits, as a point of great interest, that the cystic degeneration was in the stroma, and apparently unconnected with any morbid degeneration of Graafian follicles.

The dysmenorrhœa appears to me to admit of the following explanation. First stage, congestive, but we know not from what cause, physical or mental; second stage, vascular, the vessels becoming almost varicose, their walls thickened by some slight inflammation; the periodic hyperæmia producing pressure on the stroma of the ovary and its nerves, this stage accompanied by degeneration of and cyst formation in the stroma; and lastly, third stage, that of "cirrhosis", when the fibrous nature of the degeneration produced irregular contraction, drawing in the stroma (especially marked on the surface of the ovary), and so maintaining, if not increasing, the periodic pain by the hyperæmia acting on the contracted organ not having free scope for that enlargement that would have lessened the eccentric pressure.

In confirmation of my remarks as to the diseased condition of the stroma of the right ovary, together with its vascular distension being the cause of the severe pain, I quote a sentence from Marion Sims's pamphlet on *Batley's Operation*, 1877. "The peculiar pain of these cases must depend upon some radical organic change in the nerves and stroma of the ovaries, and not upon the mere development of cysts." Also, specially with regard to the condition of the ovaries in my case, and their "cirrhotic" appearance, the following, from Emmet's *Prin-*

ciples and Practice of Gynecology, 1879, is noteworthy. "We are unable to explain the fact that the extent of disease may be limited to what may be termed a congestive enlargement due to obstruction in the venous circulation. The enlargement is evidently not from arterial congestion, for that would tend to inflammation, which, if continued, leads to the breaking down of tissue and the formation of abscess. This venous congestion may last for years, and, from some unknown cause, the ovary may be prolapsed, but only as an exception to the rule; for an ovary equally large and as free from adhesions will more frequently remain in place. Under this congestive influence, the organ undergoes cystic degeneration, and remains stationary at nearly the same degree of enlargement for years. *A rarer change is an early atrophy, which presents the appearance of cirrhosis*; but this has been already referred to. Ovulation in an ovary, in either of these conditions, is generally imperfect, and is attended with dysmenorrhœa and other menstrual disorders."

Indications for the Operation.—The reasons which led me to operate in this case were (1) the duration and severity of the ovarian dysmenorrhœa. The pain lasted for three weeks out of every four, the fourth not even bringing entire freedom from pain; *i.e.*, for a week preceding the period, for a week during the flow, and for the subsequent week. The severity was such that, from the testimony of her sister, for nine months previously, the patient used often to roll on the floor with pain. (2) Her condition, in consequence, was extreme prostration, emaciation, with severe retching on any exertion; and so (3) she was unable to do any work or in any way get her living. (4) The case had been carefully watched for several years, and treatment of various kinds had failed to bring relief. (5) I had ascertained that there were probably no adhesions; that otherwise, though weak, the patient's general health was good; and my diagnosis was that the disease, specially of the right ovary, was the cause of all the suffering.

A few weeks before the operation, Professor Simpson was in town, and kindly saw the patient with me at the hospital, when he said that the case appeared to him one of those in which the operation seemed justifiable.

Marion Sims, in the pamphlet already quoted from, says (page 27): "Batley's operation may be resorted to under the following conditions: ...2. In cases of prolonged physical and mental suffering attended with great nervous and vascular excitement produced by perturbed menstrual molimen, whether menstruation be absent, scanty, or otherwise, this operation is justifiable after all the usual remedies fail to relieve."

Engelmann, of St. Louis, in a pamphlet on *Batley's Operation: Three Fatal Cases, with Remarks*, says, page 22, "the operation is indicated... (1) To remove the offending organs when they are the seat of constant pain, independent of the monthly flow, although generally increased by it; these are cases of chronic ovaritis, ovaralgia with pelvic pain, which are marked by the most fearful and continued suffering, which is only intensified during the catamenia; the ovary itself is always diseased, generally in a state of cystic degeneration; and the object of the operation is not mainly to establish the menopause, but to remove those organs which, by their affection, are causing local suffering, and are involving in disturbance the entire nervous system".

Operation.—With regard to the operation itself, I entirely agree with the remarks of Dr. Engelmann put forward in a pamphlet on *The Difficulties and Dangers of Batley's Operation*, 1878. It is more difficult than ordinary ovariectomy; for (1), the abdominal walls not having been stretched, the recti, by their rigidity, greatly hinder the introduction of the hand to feel for the ovaries; (2) the ovaries themselves are small, and not at once always easily discoverable; (3) even if there be no adhesions, it is very difficult to draw them higher up than just into the lower angle of the wound. Though the greatest success does not seem hitherto to have attended the operation by abdominal section, yet, with care, I think it is to be preferred to that by the vagina; for, in the case of the pedicle slipping, or otherwise hæmorrhage occurring, the difficulty of restraining it becomes infinitely greater in the confined space of the vagina. The danger is greater in Batley's operation, as the peritoneum is unaltered by the presence of a tumour, and therefore more likely to take on inflammation. The argument that animals are spayed with impunity is fallacious, as the young of animals and children bear operations, as a rule, better than adults.

I will not add to the length of this paper further than to remark, with regard to a favourite objection brought forward against this operation by non-professional persons as well as by some medical men—*viz.*, that it unsexes a woman—that we have still to learn that woman is unsexed by the menopause; and that we have yet to learn what part, if any, the ovaries play in the maintenance of sexual sensations.

I venture to express the hope that this account of what is, I believe, the first Batley's operation performed in England for dysmenorrhœa will lead gynæcologists seriously to weigh the matter; and, undeterred

by some disheartening results which not unfrequently accompany a new operation, consider well whether we have not in it, even though it be as a last resource, a final and permanent relief from much misery and suffering.

ON OVARIAN MENORRHAGIA.

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IT may be well, perhaps, before I speak on the subject of my paper, that I should explain briefly what I mean by the term "ovarian menorrhagia", because, so far as I know, it is not one which is in common use, nor indeed is it, I believe, to be met with in works devoted to the subject of diseases of women; and yet, as I hope to be able to show you, it is a term peculiarly applicable to the class of cases we shall have to consider—a term, also, of much practical value, inasmuch as it not only indicates distinct physiological teaching, but also defines a particular pathological condition; and, moreover, it serves to point out the special line of treatment which ought in the main to be pursued in the cases to which it refers.

Let us pause for a moment to look at the conditions and circumstances of ordinary natural menstruation; for without this we shall not understand or realise the fitness of the term here employed as the title of my paper. First, then, on the one hand, we see certain changes going on in the ovary *precedent* to certain other changes which take place in the uterus. The former are characterised by great vascular excitement; the vessels are turgid and swollen, and the organ itself is much increased in size, especially at the point of chief functional activity. All these changes are preliminary to, or coincident with, the maturation and escape of an ovum from a given point on the surface of the ovary; and they all precede in the order of occurrence the changes which take place in the Fallopian tube and uterus. These latter changes are also characterised by great vascular activity. Here, also, the vessels increase in size; the mucous membrane, both of the Fallopian tubes and uterus, becomes greatly swollen, and a kind of erection takes place, to which, if I may venture to hazard the opinion, is due the application of the fimbriated extremity of the Fallopian tube to the surface of the ovary, in order that it may receive and conduct to the uterine cavity the ovum which is to escape from the ovary, for the purpose either of impregnation, or that it may be cast off as "the untimely fruit of the woman". Now, the prominent feature characteristic of, and resulting from, the changes which take place in the Fallopian tube and uterus, which changes are evidently due to the fact that these latter are lined by a highly vascular mucous membrane, with all that that fact implies, is the escape and discharge of a variable quantity of mucus and blood, accompanying which there are also the minute disintegration, death, and shedding of the mucous membrane itself.

Such, in very brief terms, are the leading phenomena attendant upon ordinary menstruation; and it will be admitted, I think, upon a review of them, that the ovary is, as it were, "master of the situation"—that it is, in fact, as I have often insisted, highest in physiological dignity and importance, and that the uterus, so far as menstruation is concerned, merely obeys the physiological behests of the ovary. How, or in what way exactly, that is done; what the minutely intimate process by which the special functional activity of the ovary, which we call ovulation, produces or eventuates in menstruation, is a problem which yet remains to be solved. The fact, however, is indisputable; for without ovulation there is no menstruation. We may, I think, go one step further, and say that, whatever be the exact nature of the process, it is, in all probability, wrought through the instrumentality of the local nervous system; and that this is so, another fact, to which I shall call your attention presently, testifies; namely, that the medicines which possess most therapeutical value in the treatment of the special class of cases which we have to consider to-night are known to exercise their influence chiefly, if not entirely, through the nervous system.

In the practice of medicine, as in some other concerns of life, we are very apt unconsciously to be influenced by the terms we use to denote ideas; and hence the employment of the term "uterus and its appendages" has led us to regard the former as the most important part of the female generative system, both as regards physiology and pathology; whereas in reality the ovary, which is one of these so-called appendages, is from both points of view superior in importance and interest, as dominating, if I may so say, the functions, as well as influencing the diseases of the uterus.

Admitting all this, then, if it be true that the ovary is so important a factor—nay, is *the* factor, in the physiological occurrence of menstruation—does it not follow that, at least in some cases, and probably in

many, the ovary is *the* factor, also, in the various derangements to which that function is liable? We know that it is so in regard to one derangement—namely, pain; for we speak constantly of ovarian dysmenorrhœa, meaning thereby menstruation made painful by reason of ovarian disease of one kind or another. But if the periodical discharge of mucus and of blood from the uterus, which we call menstruation, be the direct result of ovarian action, is it not reasonable also to suppose that the *amount* of that discharge may in like manner be governed entirely by the character of that ovarian action; in other words, that just as scanty menstruation, amounting in some cases to a mere show, lasting only for a few minutes, and being sufficient merely to stain a small piece of linen, is the direct consequence of feeble ovarian activity, due possibly to an almost infantile, and certainly to a very undeveloped, form of ovary; so, on the other hand, excessive menstrual discharge—menorrhagia, in fact, and amounting, it may be, to a positive hæmorrhage—may in like manner result simply from ovarian activity of quite another kind, and be the direct consequence of morbid and, may I not add, excessive ovarian action? Nay, further, does not the physiology of menstruation seem to show, also, that cases of menorrhagia in regard, not to the amount of menstrual discharge in any given "period", but to its frequent periodicity, its too frequent occurrence, in fact, are also the direct results of too frequent ovarian action—in other words, of too frequent ovulation? All this, I submit, is fair reasoning; and, moreover, it is borne out by careful study of clinically observed facts; for the cases are many and of frequent occurrence in which the most careful examination of the uterus fails entirely to demonstrate any morbid condition of that organ, while minute inquiry equally fails to bring out any tendency to the so-called hæmorrhagic diathesis; and yet menorrhagia, either in time or in quantity, is the prominent feature in the menstrual act of these persons.

Furthermore, be it observed that, if attention be directed away from the uterus, and towards that other organ which we are specially considering to-night—namely, the ovary—we shall find, on inquiry, that symptoms clearly referable to that part exist to a marked degree. For instance, as a general rule, pain, to a greater or less extent, is a constant feature in these cases, and it presents the following characteristics. It is situated in one or other ovarian region, much more frequently in the left than in the right side; why this is so, I cannot tell; but, in my experience, morbid conditions of the ovary in which the blood-vessels are chiefly involved are far more common in the left than the right side. It is the same, I believe, in the male subject; varicocele is more frequent in the left than the right testis. I am not sure whether the same rule obtains in regard to orchitis. You will remember the difference which exists in the anatomical arrangement of the blood-vessels—the spermatic artery and vein—of the two sides. Whether this is related to the fact just referred to I am unable to state, though it seems not unlikely. Again, this ovarian pain extends upwards to the renal region, and, above that, under the ribs of the corresponding side, to the mamma of that side, which often becomes very painful, and even tender to touch. In these respects, it differs from the pain which originates in one or other broad ligament; for this goes through the sciatic notch, and down the thigh, both back and front of the affected side; it does not extend upwards at all. In the case of the ovary, the pain is referred upwards along the spermatic plexus, which, as you know, is formed from branches of the renal and aortic plexuses; and it is by reference to these anatomical facts, of the relation of the spermatic to the renal plexuses, that I would venture to explain another symptom, common not only to the cases we are considering, but met with frequently also in other ovarian affections—I refer to the existence of the so-called hysterical urine. I believe there is a very close analogy in the mode of production of the so-called hysterical urine, which is an excessive secretion of the kidney, and these cases of ovarian menorrhagia, which is an excessive secretion of the uterus. At all events, the coincidence is often very remarkable.

Again: women who suffer from ovarian menorrhagia are frequently subject to loss of voice, to difficult deglutition, and other throat-affections. I need not mention the *globus hystericus* with which you are all familiar. It would be an interesting subject for discussion, if I had time to consider it, which I have not—namely, the relation of the parts about the throat, the larynx, etc., and the generative apparatus, but especially the ovaries, in women. Not that the human animal is the only one, or the female the only sex, in which this relation exists; for at this period of the year, when the birds are coming into song, we are audibly and pleasantly reminded of this relationship.

Lastly, and this is the climax in the clinical study of these cases, when we institute a vaginal examination for the purpose of discovering the cause of the menorrhagia, which is frequently very excessive, amounting, as I have said, in some cases to a positive hæmorrhage, while in others the amount discharged at any given time is perhaps not very, or not at