

Prof. Virchow, whose pathological researches and labors have gained for him the foremost position as an exact and reliable authority, has examined more searchingly into the pathology of this disease than any one else. But we have not set out with the intention of producing a paper upon the subject, and therefore shall not bring together all that could be said upon it. The microscopical anatomy and appearances of the blood in this affection, to be brief, we shall be obliged to pass over. Our object is merely to call attention to this novel affection, while describing some of the more striking pathological changes and symptoms as observed in the cases described above. Following the course or march of the symptoms in the two varieties of leucocythemia already described, Virchow considers them under two heads—1st, the febrile; 2d, the hæmorrhagic. The patient in the first instance becomes more and more weakened, finally sinking under increased dyspnœa and hectic fever, &c. In the second form, the patient sometimes sinks, from external hæmorrhage or from repeated epistaxis, and sometimes by hæmorrhage from the intestinal organs. These cachectic phenomena supervene, occasioned by general failure in the vital forces, chlorotic symptoms, “bruit de soufflé” of the arteries, hæmorrhage from the mucous membranes, dyspnœa more or less grave, and finally death.

With regard to the treatment, as we have stated, nothing appears to be of the slightest service in well-marked cases, with distinct glandular enlargement. Iron, quinine, hydriodate of potass. and a variety of medicines administered internally, with tincture of iodine applied externally, have effected absolutely nothing. The principal indications in advanced cases will be to restrain or check the diarrhœa and epistaxis, and to support the vital powers.

Paris, France, April 10, 1859.

J. F. NOYES.

IMPROVEMENTS INTRODUCED INTO THE OPERATION FOR VESICO-VAGINAL FISTULA BY AMERICAN SURGERY.

[Translated from the *Gazette Hebdomadaire de Médecine et de Chirurgie* of January 7th, 1859, for the Boston Medical and Surgical Journal.]

[THE following translation has been in our possession for several weeks; and circumstances beyond our control have alone prevented its publication, hitherto. Just as we were about putting it to press, we observed a translation of the same article in the *Peninsular and Independent Medical Journal* for April, 1859. We print the version, however, which we have received, thus long since, for two reasons: first, because the Western journal circulates less freely on the Eastern sea-board at least, than our own; and also because the operation to which the article relates, is essentially a Boston operation, having been devised and first performed by a Boston surgeon—Dr. GEORGE HAYWARD, Sen.—and is

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therefore peculiarly worthy of permanent record in this JOURNAL. And in this light, we call the especial attention of our readers to the paper in question.—EDITORS.]

In the course of the month of November last, a young American surgeon, Dr. Bozeman, came to Paris, and visited our hospitals. He there explained theoretically and practically the methods he employed in the treatment of vesico-vaginal fistula, which have given him a just degree of celebrity both in the United States and in Europe. Dr. Robert having at the time under his care, at the Hotel Dieu, a patient who had already been operated on twice without success, both by himself and by us, begged Dr. Bozeman to make another attempt; the method was submitted to a severe test, for the case was far from favorable—the result, however, was satisfactory.

Being present at this operation, we were able to follow its different stages. Two things struck us; first, the extreme skill of Dr. Bozeman, and then the perfection of the operation itself.

The foreign press, moreover, informing us every day of numerous successes obtained by this method, we thought it would be useful to show the progress of a surgical operation which does the greatest honor to American practice. But while collecting information upon this subject, and while consulting published works, we soon saw that Dr. Bozeman had been preceded in this branch by several of his countrymen, and during our investigations we encountered questions of priority which had been, unfortunately, discussed with a bitterness to be regretted. On seeing this, our plan changed.

Our personal inclinations, and the customs of this Journal, lead us not to recoil before the demands of impartial criticism, supported by history. To render to each one that which belongs to him, seems to us an imperative duty, and, moreover, much more useful to science than is generally thought. We resolved, then, to cast a glance upon all American surgery, so far as it touches upon vesico-vaginal fistula.

It was in 1839, by common agreement, that the first success was, if not obtained, at least made public in the United States, by Dr. Hayward, of Boston. We shall commence, therefore, with the works of this surgeon. We shall follow our inquiry up to the present time, attaching less importance to dates than to the search for new ideas; historical criticism having, above all, for its object the exposition of principles. This review is not, perhaps, entirely inopportune; we, in France, are, in fact, rather disposed to believe that no one equals us in surgery. It would be dangerous, as well as unjust, to perpetuate this vain illusion, for one makes the greatest struggle to preserve the front rank as he sees himself on the point of being outstripped; and it concerns our dignity, as well as the interests of humanity, to recognize, at least, the progress which we have failed to realize.

Dr. Hayward (of Boston) has published two memoirs on vesico-vaginal fistulæ—one in 1839, the other in 1851. Each of these contains important ideas. I shall consider them separately.

The first publication, as I have said, bears the date of 1839. During the preceding year, the *American Journal* (1838, Vol. XXIII., p. 224) had published a translation of two articles of Dieffenbach, inserted in the *Berlin Med. Zeitung* of June and July, 1836. Dr. Hayward had read these articles, for he quotes their author, and introduces into the methods of the Berlin surgeon some happy modifications. After some generalities, he reports the following case.

[For the account of this case, and a description of the operation, by which the fistula was entirely closed, see "Surgical Reports," &c., by George Hayward, M.D., p. 200.—TRANS.]

We have reported this case because it contains the essential points of Dr. Hayward's method; we have seen that, not only was the operation crowned with success, but further that the symptoms following it were extremely mild. The author attributes the absence of serious symptoms, first to the want of all traction exerted upon the edges of the fistula, and then to the fact that the bladder was not at all involved in the introduction of the needles.

But there are in this method principles too important to be passed by with a mere mention, particularly if we consider the time (1839) when this statement was published. The manner of operating upon vesico-vaginal fistula had been then much less studied than at present; the important works which we possess had not yet been published, or at all events were not generally known. Therefore, Dr. Hayward ought to be considered a real innovator, and a successful innovator.

Let me be permitted to examine separately the prominent points of his operation. 1st. Approximation by *broad* freshly cut surfaces. This idea belongs to Dieffenbach. After having pared, perpendicularly, the edges of the fistula for about a line in width, he proposed and executed the detachment of the mucous membranes of the vagina and bladder, and their separation to the extent of two lines. He succeeded by this means in closing, in two operations, a wide fistula for a woman 28 years old. He says, very explicitly, that this detachment has for its object to obtain a *broad* surface for re-union. Dr. Hayward has been one of the first to fully understand all the importance of this precept, and, although the method of detachment all around the fistula (*décollement périphérique*) has been now nearly abandoned, the idea of increasing, by some means or other, the too narrow extent of the raw surfaces which perpendicular paring gives, this idea, I say, is found not only in all the American methods, but in several works of French surgeons. In our country, but not till 1841, Gerdy recommended approximation by broad surfaces; he dissected up the

vaginal mucous membrane, turned back the flaps obtained from the side of the vagina, and held them back to back by the raw surfaces, by means of the quilled suture.

A year later, Dr. Leroy (of Etiolles), in a paper filled with ingenious ideas, also insists on the advantages of the same principle; only, instead of dissecting up and doubling back the lining of the vesico-vaginal septum, he proposed to unite, by the aid of instruments, prepared for the purpose, the walls of the vagina made raw around the opening.

I think it useless to dwell longer either upon the history or the advantages of this first precept. I believe it fundamental in the operation for vesico-vaginal fistula; as in our day, however, it is not rigorously enough observed, for in our authorities it passes, so to speak, unperceived in the immense crowd of proposed modifications, I have thought that I would make it particularly prominent. To the promulgation of this important principle will be attached the names of Dieffenbach, Gerdy, Hayward, and Leroy (d'Etiolles).

2dly. Passing the thread exclusively in the thickness of the vesico-vaginal wall, without injuring the mucous membrane of the bladder.

This important rule has been clearly laid down by Dr. Hayward, who attributes to the observance of it much of the absence of severe symptoms in his operations. It is incontestable, in fact, that in the ordinary methods each thread, twice perforating the mucous membrane of the bladder, creates by this means two ducts for the slow infiltration of the urine into the submucous cellular tissue of the bladder; a tissue which, as we know, is very loose. Still more; small fistulæ have frequently been observed to have been created by the threads themselves. In short, these same threads, being, in themselves, a cause of inflammation, and inflammation being the principal cause of the failure of the sutures to bring about union, everything unites to show the value of a method which does not involve the mucous membrane of the bladder in the paring, and which removes it from the permanent and injurious contact of the uniting substances. As to this, Dr. Hayward does not conceal the source from which he derived his idea; it is a passage in Dieffenbach which has put him upon the track of this important improvement. The Berlin surgeon, in fact, finished his paper with the following passage: "The operation for vesico-vaginal fistula is always dangerous; principally, on account of the damage done to the bladder, the suture producing always more or less inflammation in the edges of the fistulous opening, or in the surrounding parts." Dieffenbach saw there a real danger, which we seek now too much to conceal; but he did not do what was necessary to avoid it. In one case, indeed, he had used a suture in which the needle passed between the two membranes without penetrating that of the bladder; but, in ordinary cases, after having effected the detachment above described, he passed the thread both through the bladder

and the vagina; or, in other words, he pierced through both mucous surfaces.

Since we are historians, we ought to examine further the just fear inspired by piercing the mucous membrane of the bladder, and some of the plans offered to remedy this. In the very important paper published by Lallemand (de Montpellier), in 1825, this surgeon expressed several times his fear of fixing hooks in the bladder. In 1829, M. Laugier, having considered these various inconveniences, invented an instrument with which to perform this operation. * * * * * [His object was to unite the sides of the vesico-vaginal fistula by drawing upon the firm tissue of the vagina, without involving the bladder.]

Without being acquainted with the operation of M. Laugier, as usually only the instrument with which it is performed is spoken of, without stating the principle upon which its employment rests, Dr. Hayward arrived at altogether analogous conclusions concerning the suture: "It seems to me," said he, "that, in almost every case in which the ligature would be the proper mode of operating, the edges of the bladder can be brought in contact without wounding that organ. The chance of adhesion would be much greater, and the danger of inflammation incomparably less. By dissecting up the membrane of the vagina to a considerable extent around the orifice, and carrying the needles through this at some distance from the edge of the wound, I cannot doubt that the edges of the bladder, which, of course, should be previously pared, may in almost every case be brought into close contact."

Inspired by Lallemand, M. Laugier laid down the principle; warned by Dieffenbach, Dr. Hayward applied it with success. This is, in my opinion, the paternity of a rule of practice of undeniable importance, which we have not preserved in France, but which American surgery has very generally adopted.

3d. The bringing down of the vesico-vaginal wall, in order to render the fistula accessible to sight, and to instruments.

One of the circumstances which has most retarded the progress of the operation which occupies us, is the difficulty of handling instruments at the bottom of a narrow cavity, and of paring down, and sewing, an opening scarcely visible. This objection discouraged J. L. Petit; it is found under different forms, in most works upon this subject. Lallemand himself, although a skilful surgeon, recoiled before it; and it is on account of these obstacles, that caustic is constantly praised and made use of. We must confess that the difficulty is great; Dr. Hayward triumphed over it by a very simple method, and in his very first attempt in 1839. "The patient was placed upon the edge of a table, in the same position as in the operation for lithotomy. The parts being well dilated, I introduced a large bougie into the urethra, and carried it back as far as the fistula. In this way I was able to bring the bladder downward and forward, so that the opening was brought fairly into view."

If we recollect that the fistula in the case referred to was situated fifteen or sixteen lines from the meatus urinarius, it is easy to understand the mechanism of the operation. The instrument introduced by the urethra acts as a lever; by raising the exterior part toward the abdomen, the upper wall of the vagina, with the vesical portion, is depressed. The bougie ought only to be unyielding; Dr. Hayward afterward used one of whalebone.

This necessity of bringing down the fistulous opening to facilitate the paring of the edges, and the passage of the sutures, has exercised, from the first, the minds of surgeons. In 1828, M. Malagodi hooked the fistulous opening with his finger, bent and introduced into the vagina. A defective method; since the action of the cutting instrument is retarded by the finger, and the surgeon, of course, has only his right hand to pare with. Sanson thought to depress the fistula, by acting through the bladder; so he introduced the fore-finger of the left hand into the urethra, and thus pressed it directly upon the lower wall of the bladder. But the urethra is not always sufficiently dilatable to admit, without violence, the large fingers of many operators. Sanson, to remedy this, had the audacious plan of cutting open the urethra with the double lithotome, in order to facilitate the introduction of the finger. A grave operation to commence with, and which has received too much praise, and which, it seems to me, ought to be absolutely proscribed.

On the whole, bringing down the fistula by Dr. Hayward's method seems to me applicable in those cases where the abnormal orifice is not situated too far from the vulva, and where the operation is performed with the patient lying upon her back; this method, besides, is entirely harmless; further, it is efficacious; since, as we have seen, the sutures can be placed, and the threads knotted, with the hand, which amounts to almost the same thing as operating upon a superficial surface.

If the fistula was situated deep, near the neck of the uterus, I think that it would be very difficult to bring it down enough with the bougie in the bladder, and that it would be necessary then to try other expedients. As for the rest, the means intended to expose the fistula to sight, are closely allied to the question of the best position for the patient to take; a point much controverted, and which we must discuss later.

To resume; the first work of Dr. Hayward brought to light, in 1839, two important precepts.

- 1st. Bringing the edges together by broad, freshly-cut surfaces.
- 2d. Placing the threads outside the mucous membrane of the bladder.

In April, 1851, Dr. Hayward published a second paper on vesico-vaginal fistulas, in the Boston Medical and Surgical Journal. Before passing to the analysis of this interesting paper, we will devote some moments to two other celebrated American surgeons,

who have also studied the same subject. I mean Drs. Mettauer and Pancoast. Unfortunately I have been unable to consult their original works; only some extracts, very much shortened, have come to my knowledge, and I have long since learned to distrust simple quotations and even succinct analyses.

According to Dr. Bozeman, Dr. Mettauer, known for his many works on reparative surgery, has tried the operation for vesico-vaginal fistula since 1830. The method of Dr. Mettauer consists in paring the edges of the opening, then bringing them in contact by the interrupted suture made with leaden wire. These wires traverse the whole vesico-vaginal wall at the distance of an inch from the pared edges, then when enough have been placed, the ends of each are twisted together until the exact meeting of the lips of the wound is effected. They are then cut off, outside the vulva; on the third day, the wires are tightened by fresh torsion, and at length finally removed, about the tenth day. Dr. Mettauer has often since employed the same method, without much modification, and with much success.

The first publication of this surgeon was made in 1847, in the *Virginia Medical and Surgical Journal*, which it has been impossible for me to procure. The priority in printing, then, rests with Dr. Hayward, who, moreover, operated quite differently.

Neither have I been able to consult the account of the operations of Dr. Pancoast, published in the *Medical Examiner*, May, 1847; fortunately Dr. Sims gives a sufficiently long extract from it.

“Method of Dr. Pancoast, of Philadelphia.”—The special character of this operation consists in reuniting solidly the edges of the abnormal opening, on the principle of the tenon and mortise. Thus, four freshly-cut surfaces are brought in contact, which increases the chances of union by first intention. The edges should have considerable thickness; when they are not in this condition, they should be thickened by repeated applications of nitrate of silver, or better, by the hot iron. The parts being as much dilated as possible with Charrière’s speculum, the moveable valve of which has been taken out, at the same time that an assistant raises the outer part of the speculum toward the pubis, the first step of the operation is to split the posterior lip of the fistula, to the depth of half an inch. The opposite lip is then pared to the shape of a wedge; first, by turning it out, as far as possible, with a blunt hook, to pare the mucous membrane of the bladder with the curved scissors and scalpel, then by shaving off in its turn the mucous membrane of the vagina, upon the whole lip, to the extent of three quarters of an inch. Now comes a very difficult, but a very important part of this operation. The hæmorrhage being arrested, the bleeding, wedged-shaped tongue, into which the anterior lip has been converted, is to be inserted into the groove, or mortise, made in the posterior lip, and the two parts to be held in contact. This is done by means of a particular kind of suture, useful in

many plastic operations, and described by the inventor in the American Journal, for October, 1842. When the sutures are knotted, the tongue is enclosed in the mortise; the threads are left a fortnight, or more, until they become loose, an elastic catheter being left in the bladder to prevent distention. A bladder filled with cold water is applied to the vulva for thirty-six hours, in order to moderate the inflammation. On the second or third day, frequent vaginal injections of sulphate of zinc are made use of, to increase the vigor of the parts. On the fourth or fifth day, a brush dipped in a solution of nitrate of silver is passed over the line of re-union, the strength of the solution being gradually increased. Immediate union may be expected in a great part of the fistula; where it fails, secondary union is promoted by the solid nitrate of silver, which developes a layer of granulations upon the surfaces, which the plastic suture still holds in contact."

Dr. Pancoast has cured by his method two patients. In one, there was complete destruction of a segment of the urethra; the other had an opening at the lower part of the bladder, more than sufficient to admit the end of a finger.

We again find the principle of approximation by broad surfaces carried to its extreme limits by the method of Dr. Pancoast, a true suture by schindylesis. The efficiency of this operation is evident; unfortunately, it presents extreme difficulties of execution, and it cannot, therefore, be applied to all cases. I have known an operation very analogous to this, practised a short time since, by my excellent colleague M. Lenoir. The posterior border of this fistula was formed by the os tincæ. Two operations by the ordinary sutures had failed. M. Lenoir devised the plan of splitting transversely the anterior lip of the neck of the uterus, in such a manner as to form a deep groove, in which he enclosed the anterior lip of the fistula. A cure was effected. This is a case which deserves the honor of the publication of a detailed account.

I observe also, in the treatment after the operation established by Dr. Pancoast, the use of astringent injections, of cauterizations of the new cicatrix with nitrate of silver, and, lastly, the very long time the sutures are kept in.

This method will, I doubt not, be again found useful in certain cases.

AR. VERNEUIL.

The agency of fatty bodies in the absorption of metallic oxides has been lately investigated by Dr. Jeannel. He finds that fatty oil is an extremely sensitive re-agent, which allows us readily to recognise and to separate 1·400,000 part of oxide of copper in a watery solution, provided that the water contains, at the same time, equivalent portions of carbonate of lime.—*Am. Drug. Circ.*