

Marion Sims, and a proper mode of exploration furnished by his speculum, any attempt for the relief of the injuries under consideration was uncertain in result, and the operation regarded as an opprobrium by the profession." To appreciate fully the significance of these words of Dr. Emmet, and the credit due to Sims, it may be interesting and profitable in this connection to look into the history of the treatment of the lesion under consideration.

History of the Different Operations for Vesico-Vaginal Fistula.—With Henri de Roonhuysen—a Dutch obstetrician of Amsterdam (1663)—rests the honor of being the first to devise, employ, and describe an operation for the relief of vesico-vaginal fistula. The description which he gives is so unique and interesting, and so rarely to be found, that I give it in full. This is from a French translation of the original by Herrgott, of Strasburg. The operation is done in the following manner: The patient is placed upon her back on a table, in a good light; the upper part of the body is covered, the lower part fixed with bands as in the operation for cystotomy. This done, the vagina is dilated by a speculum as large as the circumstances will permit. The vaginal mucous membrane along the border of the tear, where it is in contact with the vesical membrane, must be denuded, but the bladder itself must be touched as little as possible, for by the kindly act of nature the vagina is united by inflammation to the borders of the tear in the bladder in such a way that, when only as little a portion as necessary has been denuded, it is wont to heal perfectly. This freshening (of the edges) can be done by means of a little sharp pinch of the scissors or bistoury, or any other instrument the surgeon is in the habit of using. I find that it is accomplished quite well by a slight, sharp pinch of the scissors, but they ought to be as sharp as possible in order that they may not produce contusion, but freshen a little the edges of the tear to make them red or bleeding, so that they may unite immediately and contract adhesions to each other. The retention need not always be accomplished with gold or silver pins, as is done in harelip, but with pins made from the strong quills of the swan, sharpened and pointed. These are preferable, not only by reason of their flexibility, but on account of the fact that they do not cause contusion of the surrounding parts if one takes the precaution to guard them with waxed silk. For when the pins are applied they adapt themselves by virtue of their elasticity. The parts must then be anointed with a cicatricial salve (of which he gives the formula), and upon the wound should be placed two or three flat pledgets saturated with oil or warm balsam, and the vagina filled with pieces of sponge saturated with oil, for the purpose of making a little pressure upon the wound and of sustaining the dressing. All this should be steadied with some compresses and supported by a T-bandage, which should remain in place three or four days. The bandage and compresses are removed when the patient wants to urinate, but she ought to do it with caution. The patient should remain constantly in bed, lying upon her back, the hips slightly elevated, until healing is accomplished.

Roonhuysen does not describe cases operated upon by himself, nor does he state how many times he practised the operation; but a Swiss surgeon, J. Fatio (1752), records two successes by Roonhuysen's method. Naegle claimed that this procedure of Roonhuysen was simply impossible, basing his objections upon the quill pin, but he nowhere claims to have tried it. Kilian made similar objection to the operation. But Herrgott has experimented with quill sutures in tissue similar to that of the vagina, and finds them entirely practicable. Moreover, the minute and careful description of all the details of the procedure bears evidence in itself of being a genuine account of what had actually been done.

In this simple description of Roonhuysen's we find all the principles and methods of treatment necessary for dealing successfully with fistula. He used the speculum thoroughly to expose the parts, vivified the edges of the fistula with knife or scissors, avoided the bladder mem-

brane in denuding, and fastened the edges with a suture. What have we added to this more than to modify the suture and adjust a self-retaining catheter?

The method, however, was not established, either by him or by any of his immediate followers, as a recognized procedure in surgical practice, and was forgotten. Aside from the use of the catheter by Vorlten (1720) and the introduction of silk interrupted sutures, no progress in dealing with fistula was made during the eighteenth century. Cauterization of the edges with the hot iron and with nitrate of silver was used, but with only limited success. In the beginning of the last century Naegle (1809) renewed interest in this lesion and its repair. He devised and employed four methods of operation, but failed to obtain any success. Professor Ehrman (1826) operated in two cases by simple suture after freshening the edges, and obtained complete success in one of them after repeated cauterizations.

Gosset, of London (1834), reported a successful case operated upon by him, in which he used uninterrupted sutures of silver gilt, or gilded silver wire, fastened by twisting. Jobert de Lamballe, the same year, in France, introduced the method of transplanting tissue from the labia, the buttocks, or the thigh, and fastening it to the denuded edges of the fistula. This did not prove satisfactory in its results, and he adopted the interrupted suture with the additional procedure of incising the tissues at certain points in the vagina—cystoplastie par glissement—to relieve tension upon the sutures and allow the edges to rest in contact.

Then Dieffenbach (1845) gave his experience to the profession. He says: "I have operated upon one woman eighteen times without success. I have closed the entire cavities of these unfortunate women gathered from all countries. I have lived in the midst of them, and I have realized only a small number of successes." He claimed to have cured by the suture only one fistula of any considerable size, but a great number of small ones by the actual cautery.

Wurtzen, of Bonn, who after Dieffenbach was for a long time the only one who operated upon fistula, failed to cure in one case after thirty-three operations. According to the statistics of Simon, Wurtzen, up to 1842, cured only 4 women out of 18. From 1842 to 1852 he cured 7 out of 17, or 11 successes in 35 cases.

Gustave Simon (1854), published a critical review of the operation of Jobert in which he presented his own method of operating, and reported six cases in which he had obtained perfect success in four, and partial success in the other two.

In our own country, Hayward, of Boston, was the first to report a cure, May 10th, 1839, achieved by him in a case of fistula of fifteen years' standing, which had resisted treatment by cauterization and the use of the catheter. He operated with the patient in the lithotomy position, the vagina being opened by means of retractors, and the anterior vaginal wall being pressed down by a bougie in the bladder. The edges were denuded, the surfaces coaptated by interrupted silk sutures, a catheter was fastened into the bladder, and the patient put to bed upon her right side. Upon the sixth day firm adhesion had taken place and the stitches were removed. He says: "I had never seen the operation done till I did it myself, nor could I find any description of the mode which others had adopted that was sufficiently clear and explicit to be of much service." In 1851 he reported a series of 20 operations on 9 different patients, with 3 perfect successes, 4 great relief, 2 no benefit. Of these, 5 had 1 operation, 2 had 2, 1 had 5, and 1 had 6.

In 1847 Pancoast, of Philadelphia, reported two cures by a method called his "plastic suture." The peculiar feature of this consisted in splitting one edge of the fistula and paring the other to a wedge shape. The latter was then slipped into the former and held by sutures. The same year, 1847, Mettauer, of Virginia, reported a successful case of fistula treated by him with leaden sutures after freshening the edges. He also used the catheter. So simple seemed the process of cure, and so pro-

nounced his success, that he did not hesitate to declare that all fistulae are susceptible of relief.

From this brief historical sketch it becomes apparent how perfectly at sea the profession was, even as late as the middle of the last century, regarding any well-established procedure, and how little faith it had in the successful application of any of the devices used. Here and there, occasionally, an operator met with success, and the achievement was heralded as a great triumph. But no two adopted exactly the same method, and the success was ascribed more to good luck than to the proper application of any particular surgical method. It was left for the genius, the careful observation, the untiring energy and enthusiasm of one of our own countrymen, J. Marion Sims, to grasp all the essential principles, to work out to complete success, and give to the profession, what is recognized the world over as a thoroughly reliable method of dealing with urinary fistulae in women. The more credit is due him as he worked independently of others, and without any adequate knowledge of what had been accomplished by them. Yet, as Dr. Emmet says, "were we assured that Dr. Sims was as familiar as we are at the present time with what had been accomplished before his day, it should not lessen the credit due to him. What had been done fell on barren soil, bore no fruit, was not appreciated, and was destined to be forgotten. From Dr. Sims' hands the operation was accepted by the profession; it was immediately put into successful practice, and to the present day it has not been materially modified for the better, either in its principles or in its mode of execution." His first article was published in the *American Journal of the Medical Sciences*, 1852. The essential features of the procedure, as there set forth by him, were, first, suitable means by which the vagina could be thoroughly explored and the fistula brought into view—viz., the knee-chest posture and the duck-bill speculum; second, a suture which could be left in place long enough to secure healing without exciting inflammation or ulceration—viz., silver wire secured by perforated shot; third, a method of draining the bladder during convalescence—Sims' self-retaining catheter. During the next five years he modified somewhat the details of these proceedings, and set them forth in an address before the New York Academy of Medicine, in 1857, on "Silver Sutures in Surgery." In the operation as then described, one which he regarded as perfect in all its details, he substituted the simple interrupted silver suture, secured by twisting, for the clamp suture, and, instead of the knee-chest position, employed what is known universally as the Sims posture.

While Sims was thus perfecting the details of his operation, Gustave Simon, of Darmstadt, Germany, was also employing his mechanical skill and ingenuity in endeavors to relieve the same distressing affliction. The results of his labors, and the details of his operation, were given to the profession in 1862, although he had previously published an article on the subject in 1854. He placed the patient in an exaggerated lithotomy position; exposed the fistula by a duck-bill speculum of his own device; and, by means of lateral retractors, vivified the edges with a knife, regardless of encroachments upon the bladder membrane, and used silk sutures in uniting the edges. When much strain was expected, he employed a row of deep sutures far from the edge to hold the parts, and a row of superficial sutures to obtain nice approximation of the edges. He allowed his patients to sit up and pass urine naturally, when possible. Simon also devised and practised what he called kolpokleisis, in cases in which the fistula itself could not be closed. This consisted in completely occluding the vagina by denuding a surface on the anterior wall of the vagina below the fistula, and a similar one on the posterior wall,

and uniting them by suture. This made a common receptacle for the urine and menstrual blood, all of which was passed through the urethra.

Intimately associated with the operation for repair of fistula, both in this country and abroad, is the name of Bozeman. He is a strong advocate of long and complete preparatory treatment and of the use of the button suture. The latter consists of a strip of sheet lead nicely cut and moulded to fit the tissues in each individual case. This is perforated, along the median line, with a row of holes (Fig. 4946, *a*) through which the silver sutures are drawn and made fast by perforated shot (Fig. 4946, *b*). This, it is claimed, acts like a splint, and so favors healing by preventing motion. It has the disadvantage, however, of concealing the wounds, preventing the nice adjustment of the edges, and of tightening or loosening each individual stitch, opportunities for doing all of which things are afforded by twisting the wire. He employs a peculiar speculum invented by himself (Fig. 4947), and a contrivance for sustaining the patient in the knee-chest posture when under ether.

His method yields most favorable results in his own hands, but is too complicated for the general practitioner. Dr. Bozeman is a vigorous opponent of the operation of kolpokleisis as practised by Simon. He claims that in many cases in which this was resorted to by Simon, a sufficiently long and persistent course of preparatory treatment would have enabled the patients to be relieved, with entire restoration of bladder and marital functions. Kolpokleisis, even in cases that resist all other efforts at relief, is only a delusion. It may keep the patient dry, and thus afford relief for a short time; but unfortunate consequences always attend the retention of urine in a pouch thus formed when complete drainage is not secured. The urine decomposes, calculi form, and a cystitis may be established that, sooner or later, leads to disease of the kidneys, uræmia, and death. Dr. Emmet insists that kolpokleisis should never be resorted to under any circumstances.

The man who, while claiming no originality in the matter, has done the most to popularize the operation for fistula in this country, is Dr. T. Addis Emmet.

Treatment.—Methods of Cure. Spontaneous Cure. Small fistulae will frequently close without any interference, through the processes of granulation and healing. The smaller the fistula the greater the probability of such an occurrence. This process of nature can be encouraged and hastened by proper attention to cleanliness. The constant drainage of the bladder, too, by a self-retaining catheter, assists greatly this spontaneous cure. Any procedure that maintains a constant healthy, granulating process along the edge of the fistula tends to the accomplishment of a cure. Corradi cites a case of his, recorded by Jenks, which for a year had resisted all methods of treatment, even Sims' operation. He thereupon had a gold button with double facets made to fit

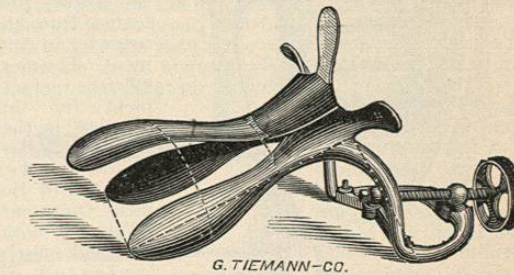


Fig. 4947.—The Bozeman Speculum.

the fistula. The button was inserted so that one facet was in the bladder, the other in the vagina. Micturition was immediately established, and not a single drop of urine passed any longer by way of the vagina. For five years the woman wore this button without experiencing any inconvenience. Then by accident the button dropped

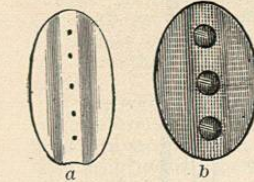


Fig. 4946.—The Lead Button.

out, and the urine continued to pass entirely by the urethra. A few days afterward Corradi examined the patient, but found no fistula. In this case the stimulus of the button had encouraged granulation till it had reached up over the head of the facet that was in the bladder, while the button was sloughing out below.

Caustics.—For many years caustics were the chief reliance in the cure of fistulae. As late as 1839, Dupuytren declared that sutures were of no avail against the injurious influence of the urine on the wound, and nothing but the actual cautery was sufficient to excite the necessary degree of granulating activity in the edges of the fistula. All the caustic acids, caustic potash, nitrate of silver, and the actual cautery were employed. In cases of extremely small fistulae the actual cautery will frequently effect a cure. Among the caustics of a chemical nature nitrate of silver is the best. It is used not only as an independent means of causing a fistula to heal, but also for the purpose of completing the cure after suture, when an opening has been left in the angle, or when points along the line of union have failed to unite. In such cases the silver should be applied frequently and its use should be continued until strong, healthy granulations have been produced. After that, cauterize less frequently; allow the granulations to accomplish what they can before burning them again.

DETAILS OF THE OPERATIONS.

Preparatory Measures.—It is important that the general health of the patient should be in as good condition as may be. But one need not wait too long for this. The local condition of the parts is still more important. Before operating, the edges of the fistula and surrounding parts must be put into as healthy a condition as possible. Sitz-baths, hot-water douches, and the most scrupulous methods of personal cleanliness should be employed. All incrustations of urinary salts, whenever found, are to be gently removed by streams of warm water or by a cotton swab, or they may be picked off

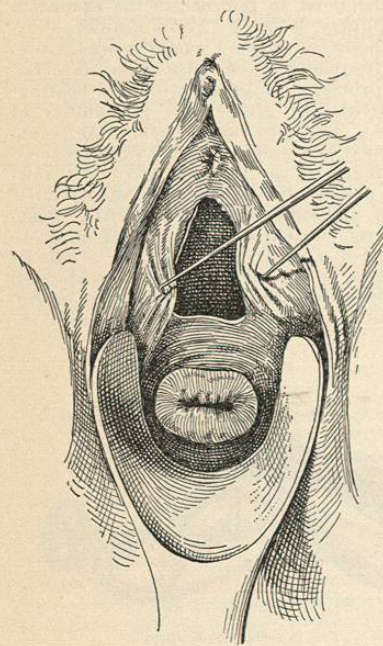


FIG. 4948.—Fistula as shown by Sims' Speculum.

with the dressing forceps. The excoriated surface beneath is then brushed over with a solution of nitrate of silver. This preliminary treatment must be repeated two or three times a week, and in the mean time the parts should be kept thoroughly protected from the urine by an ointment. The most efficient ointment for this purpose is that given by Bartholow, under the head of Boracic Ointment. "Take of boracic acid, finely levigated, 1 part; white wax, 1 part; paraffin, 2 parts; almond oil, 2 parts. Melt the wax and paraffin by heating with the oil, and stir the mixture briskly, along with the boracic acid powder, in a warm mortar, until the mixture thickens." When it is required for use, a certain amount

of it should be rubbed up with a little vaseline or glycerin. It should be used quite stiff, so that it may form a coating over the inflamed and delicate surfaces.

With careful attention to cleanliness and the constant use of this ointment, I have kept patients with artificial fistulae entirely free from abrasions, excoriations, or irritation.

All cicatricial bands that stretch across the vagina, obstructing the view and narrowing the canal, or distorting the relations of the parts, must be thoroughly obliterated. This is accomplished by nicking or cutting them here and there along their course and causing their absorption by pressure. When these constricting bands exist across the posterior wall, reaching up on to the sides of the vagina,

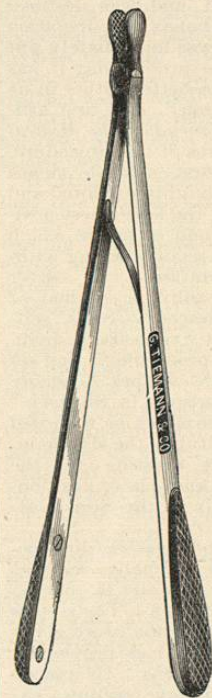


FIG. 4950.—Emmet's Needle-holder.

they can be put upon the stretch by placing one or two fingers in the rectum and the thumb in the vagina. Then, with a pair of blunt scissors in the right hand, each band is snipped or cut superficially at several places, and the pressure of the thumb increased to tear the tissue still deeper. By adopting this plan one may avoid the hemorrhage that would be produced by the deep incisions of a knife. When the bands cannot be reached in this way, a speculum must be inserted and pressure made here and there with a depressor to bring the bands into view. When once they have been revealed, they may be snipped by the scissors in the manner already described. To keep these bands on the stretch and stimulate absorption by pressure, a "Sims glass plug," or a "Bozeman dilator," should be inserted immediately after they have been snipped, and these contrivances should be held in place by a layer of cotton and a T-bandage. This plug or the dilator can be procured of any size, and must be adapted to each individual case. It should be large enough to distend well the parts. Its presence occasions some distress, which may be relieved by anodynes. During the

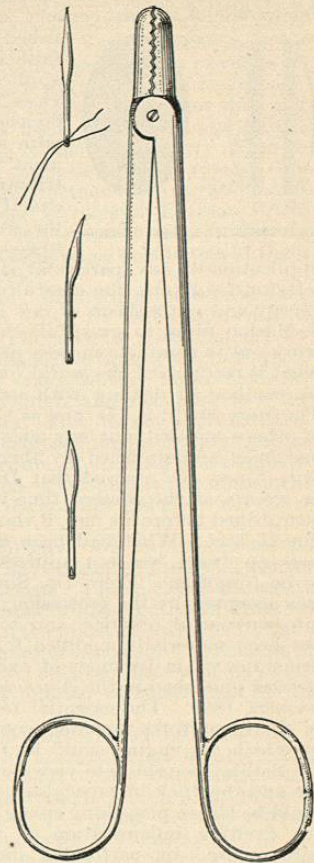


FIG. 4949.—Needle-holder and Different Patterns of Needles.

healing process the patient is kept in bed, and the plug kept as constantly in place as the circumstances will permit. It should be removed at stated intervals to permit the use of carbolized douches, and it should be well smeared with carbolized vaseline before being reintroduced. At the expiration of ten days or two weeks, if the parts are not sufficiently pliable and the vagina is not roomy enough to permit the easy performance of the operation, the process just described is to be repeated.

If cicatricial bands do not exist, but the canal is narrowed through loss of tissue, and if the edges of the fistula are so drawn apart that they cannot be brought into apposition, longitudinal incisions, three or four in number, parallel to the long diameter of the fistula, should be made through the mucous membrane of the vagina with a knife, and the dilator or plug then inserted as described above.

Sometimes this becomes a very painful and tedious process. A much more satisfactory method consists in splitting the edge of the fistula throughout its entire extent and dissecting the bladder wall free from underlying tissue widely in every direction until the edges of the fistula in the bladder wall can be readily approximated. Then the vagina should be incised longitudinally on each side, to remove undue tension, and afterward the edges of the fistulous opening should be stitched together—the edges of the bladder wall first and those of the vaginal mucous membrane afterward. The wounds left by the lateral incisions may be allowed to heal by granulation.

Sims' Operation.—The patient, properly dressed and protected by covering, is placed in Sims' posture. It is well to have two nurses and two assistants. One nurse holds the speculum and elevates the buttock; the other attends to the sponges. One assistant administers ether; one assists in the operation and does the sponging. The instruments required are:

Twisting-tongs, Sims' Fork, Shield, and Tampon Extractor.

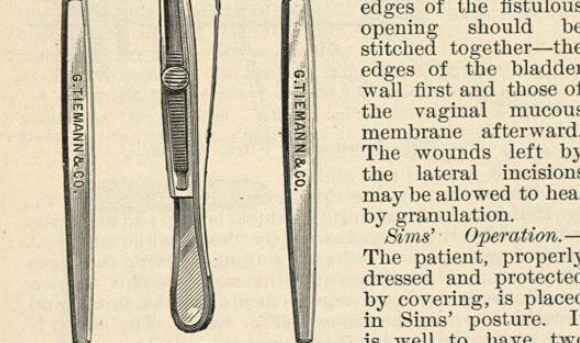


FIG. 4951.—Sims' Fork. FIG. 4952.—Twisting-tongs. FIG. 4953.—Shield.

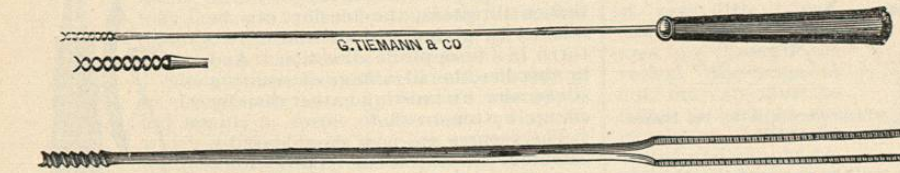


FIG. 4954.—Sims' Tampon Extractor, with closed and open screws. (After Mundé.)

Sims' speculum, long-handled left and right curved scissors (Emmet's cervix scissors are usually sufficient), a long-handled knife with narrow blade, two or three tenacula, needles and needle-holder, counter-pressure hook and fork, twisted silk for carrying No. 27 or 28

silver wire, twisting tongs, wire shield, sponge-holders, and sponges (see accompanying cuts).

The steps in the operation can be comprised under three heads: First, denuding or vivifying the edges of the fistula; second, introducing the sutures; third, adjusting the edges and fastening the sutures.

Denuding.—The line of union should be, as nearly as possible, in the long axis of the vagina; but more important still is it that the margins be drawn together in the line of least traction or resistance. The margin of the fistula is caught with a tenaculum at any selected point, and a strip of tissue is removed with the scissors or knife.

It is a good plan to make this



FIG. 4955.—Denuding with Scissors.

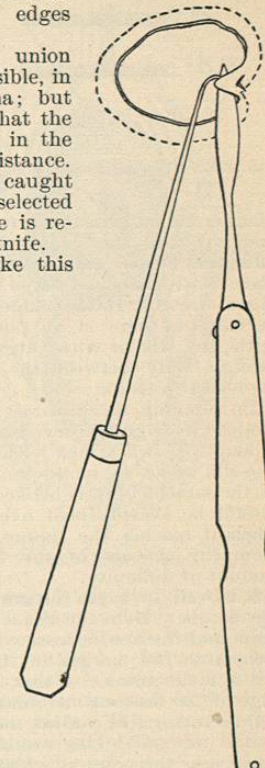


FIG. 4956.—Denuding with Knife.

strip of tissue encircle the entire fistula without cutting or breaking it. Then you are sure of obtaining a perfectly clean surface. When the vesical mucous membrane is included in this denudation there is apt to be troublesome hemorrhage. Sims therefore advised that this be carefully avoided; the incision taking the direction of the dotted lines, as in Fig. 4957, *a* being the vesical mucous membrane and *b* the vaginal. If the removal of one strip gives a surface wide enough to afford firm union, the wound is ready for the sutures. Ordinarily, however, it is necessary to take off a second or third strip outside this, on the mucous membrane of the vagina, in order to get as broad a surface of union as may be. At each end of the fistula the denudation must be made to terminate in an acute angle by extending the denudation out to a point on the vaginal membrane. This prevents all puckering of tissues when the sutures are tightened; it also diminishes the likelihood that any little orifices will be left at either end of the line of union. Should any troublesome hemorrhage occur, it can usually be controlled by adrenalin or by hot sponges, torsion,

pressure, or ligature. To exert pressure, Dr. Emmet recommends pushing the centre of a handkerchief of gauze or cloth through the fistula, then packing cotton into the sac thus formed in the bladder till the mass is too large to be drawn through the opening. After this

has been done, it will be found that, by pulling on the corners of the handkerchief, any degree of pressure can be made. Another of Dr. Emmet's devices is to pass a suture from the vagina through the septum into the

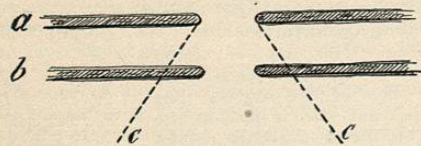


FIG. 4957.—Showing Direction of Incision (viz., that of dotted lines ending at c).

bladder, at some distance from the margin of the fistula, and out into the vagina again, thus surrounding the offending vessel, and ligating it temporarily in the tissues. Care must be taken in doing this to avoid ligating a ureter. If the mouth of the bleeding vessel can be caught, there is no positive objection to ligating with fine silk or with catgut; but the leaving of any foreign body between the lips of the wound is to be avoided if possible.

Introducing the Sutures.—The needle may be either straight or slightly curved, and from one-half to one inch in length. It is armed with a double carrying thread of fine silk about six inches long, into which the silver wire of the same length is hooked and made fast. The wire should be sharply bent over the thread in order that, when it reaches the tissues, it may be forced through them (by the aid of the forceps) with the minimum amount of difficulty.

It is well to begin suturing at the proximal angle of the fistula. Here the tissue is caught up with a tenaculum and the needle inserted at about one-fourth of an inch from the margin of the denudation, and directed through the tissues so that it will come out just at the edge of the mucous membrane of the bladder.

Puncturing the vesical membrane causes hemorrhage at the time, and may result in a permanent leak hole. As soon as the point at which the needle is to emerge is determined, counter pressure is made just beyond with the blunt or counter-pressure hook. This facilitates the passage of the needle and prevents straining of the tissues. The needle is thus pushed through as far as the grip of the needle-holder will allow. Then it is caught at the point and drawn through while the counter pressure is still applied. The needle is then inserted at the point corresponding to its exit on the edge of the mucous membrane of the bladder, on the opposite side of the fistula, and directed through the tissues till it makes its appearance through the vaginal mucous membrane one-fourth of an inch from the margin of the fistula. The counter pressure is applied as before. The needle, with carrying thread and silver wire, is now drawn through till the ends of the wire can be grasped on both sides. If the tissues are delicate and there is

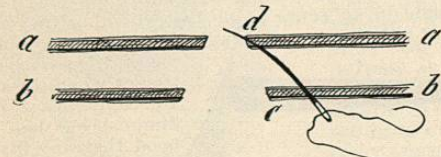


FIG. 4958.—Showing Direction in which Needle is to be Passed. a d, Bladder membrane; c b, vagina.

danger of tearing them, it is well to support the thread, as it is drawn through, with a Sims fork. But the wire must not be drawn into the tissues till the needle has been passed through both sides, and then it is to be slid through both sides at the same time; otherwise it is likely to get badly kinked. The ends of the wire are twisted together one or two turns and held out of the way by the assistant. In this way the stitches are passed

one after the other from one-fourth to three-eighths of an inch apart, and as evenly in all respects as it is possible to get them.

Securing the Stitches.—Commencing now at the remoter angle of the fistula, the surgeon should grasp firmly both ends of the first wire, two or three inches from the tissues, with the twisting-tongs, and he should make the tension sufficient to draw the suture taut. With slight pressure of the tenaculum the wire of either side is now bent, near the tissues, at a sharp angle, till it meets

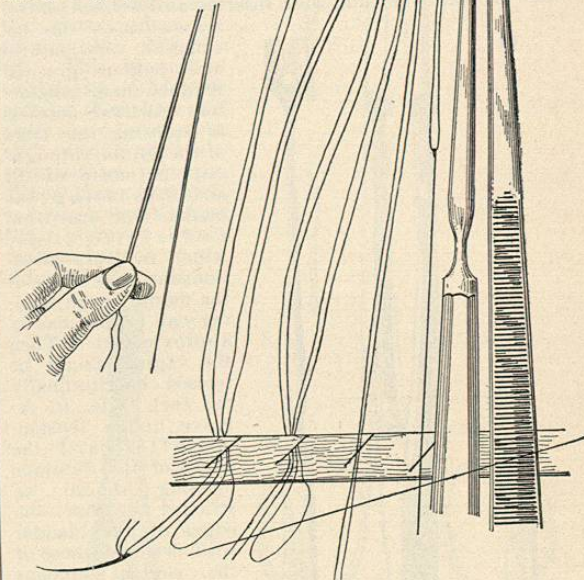


FIG. 4959.—Twisting the Wires. (Savage.)

the wire of the opposite side directly over the line of union that is to be formed. The shield is then slid down the wire and firmly pressed against the tissue, while sufficient strain is put upon the wire, by pulling, to bring the edges of the wound into firm apposition. While this tension is still maintained, the wire is bent over the shield and twisted down to the tissue. (Fig. 4959.) The shield is now removed in order that the operator may see whether this suture holds the edges in close and exact apposition. If it does not so hold them, the shield is reapplied and one or two more twists are given to the wire. Or, if the twisting has been carried too far and strangulation or cutting of the tissues threatens, the tension can be relaxed by giving the wire one or two turns in the opposite direction. And in this lies the advantage of securing silver wire by twisting rather than by clamp, button, or shot.

The sutures are now shouldered by catching the loop of the stitch with a tenaculum at the point of exit from the tissue, and pulling at a right angle to the line of the fistula, first on one side and then on the other, so that the wire shall be bent at a right angle where it comes out of the tissue, and shall lie flat across the face of the wound.

The twisted end is next bent at a right angle over a



FIG. 4960.—Adjusting the Wire.

tenaculum, flat upon the vaginal membrane, and cut off so that it shall have a length of about half an inch. It is customary to turn the twisted ends alternately to one side and to the other.

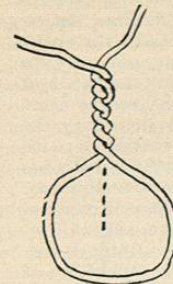


FIG. 4961.—Stitch before Shouldering. (Mundé.)

controlled by applications of either hot water or ice-water or by injections of adrenalin.

The self-retaining catheter is now placed in position, and the patient put to bed with a narrow dish between her thighs to catch the urine.

The catheter should be removed and thoroughly cleansed every night and morning, and a vaginal douche administered at least once a day. The bowels may be kept constipated till after the fifth day, or an evacuation may be obtained daily by Hunyadi water or by some other laxative. It was Dr. Sims' custom to keep the bowels quiet. The patient is kept upon her back, and pain is relieved by opium or by morphine. The sutures may be removed upon the eighth, tenth, or twelfth day, according to the relative vitality of the patient and the healing qualities of the tissues.

Care must be exercised not to pull the wound apart in removing the sutures. Catch the twisted end with the twisting-tongs, and straighten it up gently to a right angle with the surface.

While this is being done, the loop of the suture will rotate in the tissues and bring a bright point of it into view, when it can be easily snipped with wire scissors. The view is facilitated by making slight pressure on the tissues with the points of the scissors at the point of exit of the suture. In drawing the suture out, the surgeon should direct his force in such a way that the tissues shall not be constantly pressed toward the line of union, nor dragged away from it.

Some cases require several operations before a cure can be effected, but slight points of non-union, either at the angles or along the line, may be made to heal by touching them frequently with the stick of nitrate of silver and by keeping the catheter in the bladder.

Simon's Operation.—It will not be necessary to describe so minutely Simon's operation, but simply to speak of the main points in which it differs from the Sims operation, and to illustrate them by the accompanying cuts. Simon worked along the same lines of procedure that Roonhuysen described, and not only attained great success in his operations, but caused it to be adopted among his German confrères as the standard operation. The characteristic features of Simon's operation are these: First, he employs an exaggerated lithotomy position, patient on back, hips

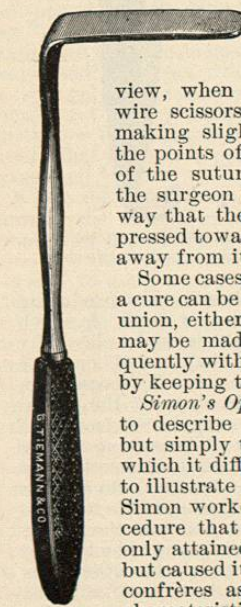


FIG. 4963.—Simon's Retractor.

elevated. Second, instead of avoiding the vesical mucous membrane, he intentionally incises it if the edges contain much cicatricial tissue. Third, he repudiates the superiority of silver wire and uses silk. Fourth, he employs no stationary catheter, and allows the patient to void her urine if possible. Fifth, the bowels are kept in a relaxed state to avoid straining, the diet is not restricted and the patient is not necessarily confined to bed.

Position of the Patient.—The breech-back (Steiss-Rückenlage) position is attained by elevating the hips and flexing the legs over the belly, so that the breech becomes the most projecting part. If the fistula is situated high up in the vagina, the hips must be well elevated, and the thighs flexed as much as possible. The lower the fistula is situated in the vagina, the less the degree of elevation and flexure necessary. Whenever it is possible to expose the fistula well by traction upon the cervix, either by forceps or by threads passed through, the speculum is dispensed with, and only side retractors are used, with a staff introduced into the urethra to steady the parts. When this is not practicable Simon uses specula devised by himself. These consist of an anterior and a posterior speculum, and two side retractors (Fig. 4963).

Vivifying the Edges.—The Simon method carries the incision deep enough to extirpate all cicatricial tissue, making a funnel-shaped excavation, and includes all the tissues down through the vesical mucous membrane. Simon prefers the knife.

Sutures.—When the fistula is small a single line of silk sutures is used. In the larger fistulae every second or third stitch is made a sustaining suture, and is passed at a considerable distance from the edge, thus including enough tissue to support the line of union and take the strain off the more superficial (uniting) sutures. This Simon called his double line of sutures. It is of very little importance whether the sutures go through the vesical membrane or not, but care must be taken to prevent the membrane being inverted and caught between the edges of the wound.

After-treatment.—The patient takes any position in bed that she desires. She passes urine normally whenever she feels the desire, either lying upon a bedpan, sitting up, or getting on the hands

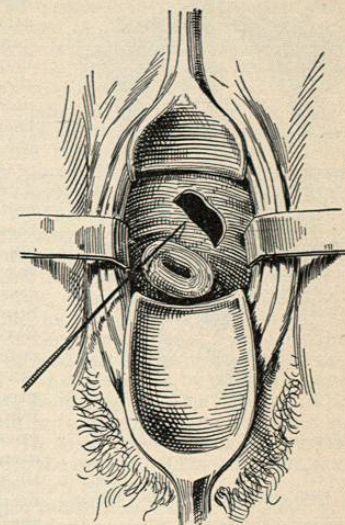


FIG. 4964.—Fistula as shown by the Goffe or by Simon's Speculum.

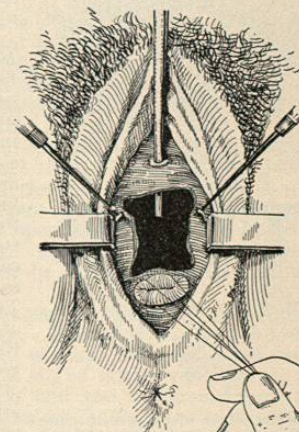


FIG. 4965.—Fistula shown with Retractors and Staff. (Simon.)