naturally resulted in contraction of the ligaments.

I will say one word on the treatment of chronic constipation, although it does not, strictly speaking, belong to pelvic massage. It is perhaps one of the most valuable presents we have received from the hands of Thure Brandt. I have seen cases of habitual constipation where three cathartic pills, together with 3 ss. ol. ric. and an enema were the daily order of things, and such cases have been cured in a few days only by kinetic therapeutics.

The reason of these remarkable results is easily understood. Once more the sympathetic nervous system has to be brought into the foreground. We all know that the physiologic activity of the alimentary canal depends on the proper innervation and circulation. Virchow has shown that in innervation disturbances, in consequence of which the muscular fibers of blood vessels lose their energy and the elastic fibers become relaxed, thus interfering with the physiologic function of the intestine, kinetic treatment is eminently satisfactory in strengthening the muscles of the abdomen, producing peristalsis and in the mechanical removal of skybala from the colon. Another most favorable result is the beneficial effect by reflex action upon the stomach.

Subinvolution of the uterus is cured by this method in so short a time that one can but wonder at it. It is not rare to see cases of enormously enlarged uteri reduced to their normal size in a few days.

Cases of metritis and endometritis respond to treatment in a relatively short time; but should the latter be due to fungosities, curetting would be the more rational treatment.

It is remarkable how quickly all the subjective symptoms disappear even in the most severe cases, while the objective symptoms remain behind, to serve as a guide for the continuation of the treatment, long after the patients consider themselves cured. Kinetic therapeutics is no longer considered a novelty, but holds a high place in the estimation of the leading gynecologists. The most prominent specialists abroad have given it a fair trial and acknowledge that not only did the treatment fully come up to their expectation, but that it rendered unnecessary in many instances surgical interference, particularly such operations as Battey's. If kinetic therapeutics had done nothing more than to give the death blow to Battey's operation this fact alone would suffice to give this method a foremost rank in gynecology.

Alexander's operation for shortening the round ligaments, with its modifications by Adams and Alquié has a dangerous rival in kinetic therapeutics. Most of the disciples of Thure Brandt are of the opinion that ventro-fixation has had its day and will be substituted by the more rational kinetic therapeutics. Ventro-fixation as recommended by Koeberlé, Olshausen, Lawson Tait, Kelley, Sänger and Leopold is at its best a dangerous operation and by no means justified by its results. Laparotomy, the forcible breaking loose of adhesions and stitching of the uterus to the abdominal parietes is a serious undertaking, especially if we think that after all it is only the substitution of an anterior for a posterior fixation and oftentimes a double fixation. The dusting of aristol, dermatol or iodoform over the loosened adhesions, or the application of sterilized gauze, or even gold leaf, has proved inadequate.

The cure of prolapsus uteri is, although wonderful in the hands of Brandt, not universally successful if undertaken by his followers, and Winckel made the statement that colporrhaphy will, together with Brandt's system, be in the future the treatment for such indications. It will easily be seen that where the pelvic floor gives no support whatever, Brandt's treatment alone can not hold the uterus up. In these cases the levator muscle is found to be severed and operations such as devised by Freund, Martin and Winckel will be found beneficial, as they bring about a union of the muscular fibers of the levator and the vaginal wall. Brandt's per cent. of cure of prolapsus is between 70 to 80 per cent. and it is doubtful whether surgical operators have the same good result. There are cases on record where five and more operations did not prevent the descent of the organ and Le Fort's operation for complete closure of the vagina had to be resorted to.

After having taken up so much time in trying to bring out the advantages of kinetic therapeutics, I have to point out its disadvantages. All that can be said against it, even by Brandt's adversaries, is its troublesomeness, the difficulty of becoming familiar with it—a trip to Sweden or Germany to study with one of Brandt's disciples being indispensable—and last, not least, the long duration of the treatment extending in chronic cases over several months.

Brandt teaches no longer, having arrived at the venerable age of 77 years. Gynecologists from all parts of the civilized world are constantly applying for the privilege of studying under his direction; but within the last year or two he has felt it to be incumbent upon him to transfer the duties of teaching his method to his disciples. After many years of bitter disappointment, harsh criticism and antagonism he now has the satisfaction of seeing his labors appreciated, his method adopted by the scientific world and of having his name handed down to history as one of the great philanthropists of his day.

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SUPRA-PUBIC CYSTOTOMY FOR CALCULUS IN THE BLADDER.

TRENDELENBURG'S TRANSVERSE INCISION—TRANSVERSE DIVISION OF THE RECTI AND PYRAMIDALIS MUSCLES—INCISION OF THE BLADDER WITHOUT INFLATION OF THE RECTUM OR INJECTION OF THE BLADDER.

Read before the St. Louis Medical Society, Dec. 22, 1894.

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The object of this short paper is to bring to your notice an operation, which though described in several works on surgery in the German¹ is not mentioned (so far as I have been able to investigate) in any English or American text-book on surgery, with the exception of the English translation of Kocher's "Operative Surgery" recently published. I do not believe that the technique of this operation as practiced by Trendelenburg, Tillman, Kocher and other

Continental surgeons is generally known or practiced in this country. The operation I have reference to is the operation of supra-pubic cystotomy, by a transverse incision through the skin and abdominal muscles, without previous inflation of the rectum or injection of the bladder. This operation is known as Trendelenburg's method of supra-pubic cystotomy (*sectio alta*) by means of the transverse incision.

This method was first suggested by Günther and carried out afterward by Bruns-Lotzbeck. To Trendelenburg, is due the credit of bringing the operation to general notice in Germany, and perfecting the technique, such as is now practiced by himself, Tillman, Kocher and others. The technique of this operation renders it unnecessary that the rectum and bladder be previously distended, which in the *sectio alta* by means of the median vertical incision is of importance, especially the injection with fluids or air of the bladder. The majority of surgeons have now discarded the inflation of the rectum, but still use some method of distending the bladder, either by fluids or air.

As you are all aware, the object in inflating the rectum or distending the bladder, is to bring the viscus out from behind the pubes, thus rendering it more accessible especially in the adult; also to increase the dimensions of the pre-vesical space by pushing up the peritoneum. It is well known through experience, that inflation of the rectum is at the best unsatisfactory, and has therefore been practically discarded. That distension of the bladder is not always without danger, is also well known; especially in persons of advanced years in whom the bladder walls are friable.

It is true that the Trendelenburg position (elevation of the pelvis), increases the dimensions of the pre-vesical space, but the median vertical incision in this position (with distension of the bladder) does not give as free access to the organ as the transverse incision. This is due to the form of the wound as produced by the median vertical incision. This wound is elliptical when pulled asunder by retractors, with the points of the ellipse at the pubes, and toward the umbilicus, so that the narrowest point of the wound is at the pubes just where the greatest amount of space is wanted for free manipulation of the deeper parts. In the transverse incision the wound is triangular or lozenge shaped, with the base or widest part right at the pubes.

TECHNIQUE.

The patient is carefully prepared; pubes shaved, bowels emptied thoroughly. He is then placed in the Trendelenburg position, the pelvis as high as necessary, so as to allow the abdominal organs to gravitate toward the diaphragm. The incision through the skin is transverse over the upper margin of the pubes, in a slightly curved form, convexity of cut over the pubic bone; it is best to carry the convexity of the incision about one and one-half centimeters onto the pubes; by doing this the insertion of the recti can be more easily severed, very close to the bone. The length of the incision extends from over the region of one inguinal canal to the other on the opposite side. The cut is carried through skin and superficial fascia, exposing the pubes and the insertion of the recti muscles. Two Volkmann hooks or retractors are now placed in the skin wound, one

¹ Koenig, Kocher, Tillman.

pulling upward toward the penis, and the other downward toward the umbilicus. A few veins may need ligation. A catheter or sound of full curve is now introduced into the bladder and controlled by an assistant, or it may have been introduced before the skin incision is made. The skin wound being held asunder by the retractors or hooks, the insertions of the recti muscles are fully exposed. Their insertions are cut transversely across, keeping the edge of the knife well against the upper border of the pubes. This can be facilitated by pressure of the index fingers of the left hand on the muscles, thereby putting the tendons on the stretch; in this manner both recti may be partially or wholly severed from their insertion as well as the pyramidalis muscles, as the operator may see fit.

FIG 1.—The heavy line over the pubes shows the transverse incision; dotted lines the form of the wound when held apart by retractors.

The division of the muscles brings into view the pre-vesical space. A hook or retractor is now hooked into the umbilical end of the wound (the instrument must be blunt so as to run no danger of wounding the peritoneum) and traction made downward. Two more hooks are inserted into the pubic angles of the wounds and traction made to the respective sides. This gives us a large triangular wound with the base in the most favorable position for manipulation at the pubes. At the bottom of this wound we find the pre-vesical fat, veins, the peritoneum and bladder. In the adult the lower fold of the peritoneum may dip down behind the pubes, depending on the size and disposition of the fundus of the bladder. By means of rat tooth forceps or a blunt dissector or knife-handle the fat is separated; by a little care the

veins need not be injured, and no bleeding need occur by this manner of blunt dissection. The anterior wall of the bladder is exposed and is recognized by its pinkish color. The anterior wall of the bladder should be well exposed upward and downward. If the operator works skillfully, the peritoneum may not become visible during the operation. It is well at the beginning of the separation of the fat to work well down behind the pubes, for then there is no danger of encountering the peritoneum, and we can, after the bladder wall has been exposed, readily work it upward, along with the veins and pre-vesical fat. At this stage of the work the catheter comes in for its part in the technique; the assistant who has it in charge firmly depresses the ends, thus carrying the point against the anterior wall of the bladder. It can be carried higher into the fundus, or lower, as the operator may desire, and by this means he can clearly outline the extent of the bladder.

The anterior surface of the bladder having been sufficiently exposed, the catheter lifts the wall well up into the wound at any point the operator may determine. By means of a sharp hook, or better, by means of a loop of silk passed through the muscularis, the bladder is fixed; we may, if we choose, put in two loops of silk; the one near the fundus, the other lower down.

The organ is well drawn upward and the tip of the catheter is used as a guide to cut down upon; with a sharp narrow pointed knife we cut down beside the tip of the catheter into the bladder. It is well to begin the incision into the bladder near the fundus and extend the cut downward, so that one or two fingers can be introduced into the interior of the bladder. A gush of urine usually follows the opening of the organ. The interior can now be examined by the fingers, or inspected by means of an electric light introduced into the cavity. If the operation be done for calculus, it is now extracted, or any other procedure that the particular case may require. After the operation is finished, the bladder is irrigated with a 3 per cent. boracic solution. A soft rubber T-drainage tube is now inserted into the cavity of the bladder and the other end passes out of the skin wound. Into the wound and around the tube iodoform gauze is packed. Each outer angle of the wound may be brought together by one or two sutures so as to lessen the size. A suture is passed through the skin and drainage tube, so as to retain it in its place; over this gauze and cotton.

The patient is put to bed and as soon as narcosis passes off is instructed to lie on either side, right or left, so as to admit of free drainage. The tube is left in the bladder one to two weeks. The gauze packing is removed as often as is necessary. The patient is allowed to sit in an upright position as soon as possible after three to four days.

Case.—On December 16, Mr. K. S., aged 70, residence Lebanon, Ill., was referred to me by Mr. H., a medical student of the Marion-Sims College. The patient for a year past had suffered from frequent urination. He had been treated by three or four physicians without relief. He was sent to me under the supposition that he was suffering from an enlarged prostate. Patient stated that his appetite was fairly good, he slept well, and did not have to get up very often to urinate, but during the daytime had to micturate very often, and that there was considerable pain immediately after urination. This pain he located over the pubes. Examination of the rectum revealed that the prostate was not enlarged, and could hardly be responsible for his symp-

toms. I introduced a sound into the bladder and it was hardly in the bladder when I came into contact with a stone located on the right side. The introduction of the sound caused him much pain, and he was attacked by a trembling spell, so that I had to desist from further investigation.

I saw him again the next day; he had a slight rise in temperature 100 degrees, and felt unwell. While holding the thermometer in his mouth he had a slight syncope. I advised an operation, and that he should go to a hospital. He agreed to operation and entered the Rebekah Hospital the following day. Urine showed slight trace of albumen.

Operation.—Wednesday morning, December 19, the operation of supra-pubic cystotomy was done. The patient had received two good doses of whisky; the one an hour before, the second a half hour before the operation. A hypodermic of 1-6 gr. of morphin was given along with the second dose of whisky. The whisky and morphin were given so as to avoid the necessity of giving much chloroform. The patient was placed in the Trendelenburg position on Edebohls table. A silver catheter was introduced into the bladder and held by an assistant. I had taken the precaution to arrange a stop cock on my catheter, in such a manner that the nozzle of a syringe could be attached, so that I could inject the bladder should I find any difficulty in reaching the same, it not being injected. I made a transverse incision from one inguinal canal to the other; the line of incision was slightly curved, with convexity over the pubes, and carried about one and one-half centimeters onto the pubes. The cut was curved down through skin, fat and fascia onto the recti muscles. There was no bleeding. The recti and pyramidalis were now cut through, keeping the edge of the knife on the pubes. A retractor was placed in the umbilical end of the wound, drawing downward, one also into the pubic angle of the wound, drawing to the respective sides. The pre-vesical (cavum Retzii) space was now freely exposed, especially well the parts behind the pubes; with a mouse tooth forceps and a blunt dissector I cleared away the pre-vesical fat and veins over the anterior wall of the bladder.

I had my assistant press the catheter well up against the pubes as low down as possible, with the point of the catheter as a guide. I was quite safe in my manipulation, and sure that I was below the lower fold of the peritoneum. As soon as I reached the bladder, which could be easily noted by its pink color, I cleared the fat well off from the anterior wall as far as the fundus. The peritoneum did not come into sight, was covered by fat and pushed along with it out of the way. Into the anterior wall of the bladder near the fundus, I inserted a loop of silk, passing it through the muscular coats. This loop I used to fix the bladder previous to the incision. I now had my assistant crowd the point of the catheter well against the anterior wall of the bladder near the fundus. I found that it was an easy matter in this case to penetrate the bladder wall with the catheter tip. I did this, and then used the catheter as a guide, alongside of which I inserted a narrow pointed bistoury and enlarged the wound downward so that I could introduce two fingers into the bladder. The catheter was now withdrawn. I could readily feel a large, oval, flattened calculus in the right segment of the bladder. Passing a stone forceps in alongside of my fingers, I readily seized it. I found that the bladder wound was quite small for the stone to pass through; by means of a rotary motion I pushed it out of the bladder through the wound without enlarging the same.²

The bladder was thoroughly washed out with a 3 per cent. boric acid solution. A soft rubber T-drainage tube was inserted in the bladder, the other end passing through the skin wound. I fastened the tube into the skin wound by a single suture through skin and tube. The depth of the wound around tube was packed with iodoform gauze, the ends left in the upper part. The outer angles were closed, each by two sutures. Into the top of the protruding drainage tube, I inserted a T-tube of tin ore, over each arm of which a rubber tube was passed. The rubber tube extended over the abdomen of the patient, well over each side. The dressings were applied so as to have the ends of these tubes protrude. The patient by this arrangement can lie on either side and the urine is carried by means of these tubes into a urinal or dressing, and thus the wound is protected, in a measure at least, from the effect of the escaping urine.

The operation occupied about half an hour. I could have done it in about twenty minutes, but a

² Mulberry calculus, 1¾ inches long, 1½ inches wide; weight 1 oz., 2 drachms.

little time was lost on account of a hitch on the part of the assistants. It can easily be accomplished in a careful manner in fifteen to twenty minutes time. The patient reacted well from the operation. Not a tablespoonful of blood was lost. Twenty-four hours after the operation the temperature was 100, which, however, in the next twenty-four hours fell to normal.

On the third day the dressings were changed and the packing removed. Tube left undisturbed. Patient is doing well; rests and has no pain; urine escapes through tubes as above described.³

Remarks.—The experience gained by an operation by a new method in a single case can not usually be taken as a criterion of the value of a method, unless its merit has been established by other operators. Its decided advantage over the median vertical incision was, however, clearly demonstrated and especially the ease with which the pre-vesical space is laid open, and the lessened danger of wounding the peritoneum. This is easily understood when we bear in mind that in the transverse incision, we cut parallel with the lowest fold of the peritoneum, as it is reflected over the fundus of the bladder and in a direction that is oblique to it, or in other words away from it.

In the median vertical incision the opposite obtains, as here we cut directly at right angles to the peritoneum, and directly over it in the umbilical end of the wound.

Based on the experience of others, and my own in the case reported, I would offer the following conclusions:

1. That the transverse incision is more easily executed from a technical standpoint.
2. That it affords more space in which to work in the depths of the wound than the median incision, and hence superior for any exploration of the bladder, for whatever condition.
3. That there is less liability to injury of the peritoneum, because the knife is used parallel with and on a level below its lowest fold.
4. That it is unnecessary to inflate the rectum.
5. That it is unnecessary to inject the bladder, and consequently, the risk of injury to the organ is avoided, which in the aged is an element that should always be considered.
6. That the catheter in the bladder is a safe guide to the location of the fundus and anterior wall.
7. That with the catheter as a guide, the bladder can be incised with ease and facility.

A PUNCTURE WITH A BONE OF A LIVING FISH IN THE WEST INDIES, FOLLOWED BY LEPROSY IN A CAUCASIAN SUBJECT.¹

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I have had an opportunity of examining a case of leprosy in this city, which has been first seen by a medical friend of mine, who knowing that this dis-

ease was a subject in which I had always been deeply interested since my sojourn in Japan and that I had published a number of articles about it in the medical papers, has been kind enough to let me study the case.

C. G., aged 35, but looking 50, of more than average intelligence, of intemperate habit, born in Germany, of German ancestors, came when $2\frac{1}{2}$ years old from Germany to the port of New York; has been married twenty years; has five living children all healthy, one a married daughter, who has a child of 7 months. He says he was healthy until six years ago. The following is his history: He lived in New York until he was 18, when he went to Brazil, as an engineer's storekeeper; the trip occupied two months. He left there and went to Aspinwall as waiter and chief cook on a ship belonging to the Pacific Mail. He remained in this service two and one-half years when he changed to the Savannah line, as cook, and remained in that service four years. Then he was employed by the Ward line running between New York and Havana, Matanzas, Tampa, Tuxpani and Vera Cruz. He was with that line one year. He then worked six months on a steamer running to Santiago, Cuba, Nassau, Cienfuegos. He went then to the Clyde line, running between New York, Charleston and Jacksonville, where he remained one and a half years. After that he entered the service of the Red "D" line, running between New York and Curacao, Puerto Cabello and La Guayra. During all this service his family lived in New York, and his employment on his trips was always that of cook, storekeeper or waiter.

Six years ago he was on board a steamer running between Tampa, Key West and Havana, on which he had been employed during the preceding four months. Just as he was leaving Havana, from which the run to Key West is only a night's trip, while cleaning a red snapper, a fish which among sailors has the reputation of possessing a poisonous fin just behind the gills, he punctured with the bone of that fin the tip of the thumb of his right hand, through to the bone. The next morning he felt no pain in his hand, but the arm was beginning to swell; it continued to swell for some days, then the swelling subsided, the whole process lasted a week. At the climax it was about three times its natural size, the swelling extending to the shoulder. The man was under the treatment of the U. S. Marine-Hospital surgeon at Key West, and gradually recovered. Immediately afterward an eruption appeared on the front of the chest, the head and face. Watery vesicles appeared, which broke and formed huge scabs.²

Dr. Daniel M. Burgess, U. S. Marine-Hospital Inspector at Havana, treated him for this, but he did not define the case as having any relation to leprosy. When these eruptions were cured, after some months, there remained red blotches which crossed his nose and cheeks, and appeared symmetrical on his forehead over the eyebrows. Nothing appeared on the chest, where the eruption had been localized. These red blotches gradually thickened, hardened and became nodulated. He first noticed this on the sides of the nose. None of the blotches had at that time shown on his ears. This condition continued increasing; his ears became tuberculated, and six months ago Dr. Burgess of Havana, first declared the case to be one of leprosy. Soon after the first outbreak of blotches,

³ February 20. Wound closed. Urine passing per viam naturalem.
¹ This case has not been reported before. It has been in charge of the physician who now attends it, for two years. His diagnosis of leprosy was not made until three months ago, when another physician at the Presbyterian Hospital, N. Y., discovered the *lepræ bacilli*. The first diagnosis of leprosy, as was afterward learned, was made in Havana six months ago, by Dr. Burgess. My own diagnosis of leprosy is the third in the case.

² A vesicular or porrigonous eruption is, in China and Japan, frequently the initial lesion of leprosy.