

Suprapubic Closure of VESICOVAGINAL FISTULA

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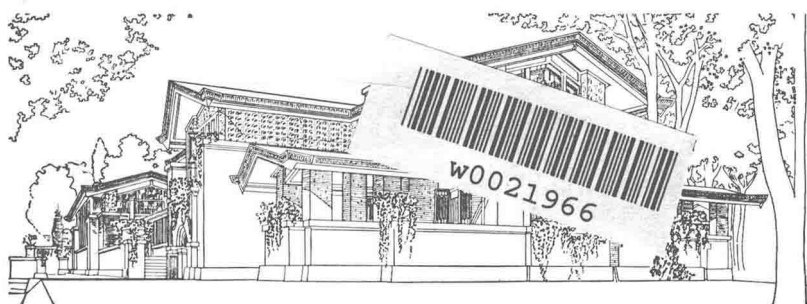
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FOREWORD

IT WOULD be of no value, in this monograph, to review the extensive literature pertaining to the surgical repair of vesicovaginal fistula. In American annals, J. Marion Sims has often been given credit for the first successful operative closure of a vesicovaginal fistula. The patient, a negro slave, was successfully operated upon in May, 1849. It was the thirtieth operative attempt and its success was largely attributed to the fact that silver wire sutures were used in the closure. Sims apparently believed that he was the first to use this method. Further investigation of this subject definitely establishes the fact that Montague Gosset, a surgeon of London, achieved complete success in the closure of a vesicovaginal fistula in 1834. This case report was outlined in a letter to the Editor of the *Lancet* under the title "Calculus in the Bladder: Vesicovaginal Fistula: Advantages of the Gilt-Wire Suture." George Hayward of Boston had reported a successful operation in 1839 and two others in 1851. The fact that Sims was not the first to close a vesicovaginal fistula, nor the originator of the silver-wire suture for this purpose, should in no wise detract from the important contributions that this Montgomery, Alabama surgeon made in introducing the Sims' position, the Sims' speculum, special needles and sutures and most especially his original adaptation of the indwelling catheter.

Since the publications of Gosset, Sims and Hayward,

many technical procedures have been described by numerous authors. The majority of these patients have been operated upon by the vaginal route, although the transvesical and transperitoneal approaches have been used independently or in combination with vaginal procedures in many instances. In the main, none of these operations has been uniformly satisfactory in as high a percentage of procedures as one would desire.

It is well to mention a few of the excellent historical reviews of this subject: one by Howard Kelly in 1912, one by Norman Miller in 1935 and one by Phaneuf and Graves in 1949.

Irving J. Farsht in the *Journal of Urology*, September, 1940, has an excellent review. Trendelenburg is said to have first described the suprapubic transvesical approach for closure of vesicovaginal fistula in 1890.

Accurate figures as to *cure* are often difficult to sum up in the appraisal of the value of various procedures in the more difficult cases. Here, as elsewhere in surgery, the author may often be carried away with the certainty of near-perfection in the application of his own technical approach.

In a report from the Mayo Clinic, Counseller obtained 85 per cent successful closure in 181 patients. In this group, 98 patients had had one to ten attempts elsewhere, and 61 patients had previously been operated upon from two to six times unsuccessfully at the Mayo Clinic. Norman Miller at the University of Michigan Hospital at Ann Arbor has enjoyed an extensive experience in the vaginal closure technique. He reports 82 per cent cures in a group of patients similar to Counseller's.

It is well known that with the commonly applied procedures, a vesicovaginal fistula may require more than one operation before a successful closure is obtained. It

is this author's opinion that fewer failures would result if the operating surgeon was more meticulous in his selection of patients, both as to time of operation and the type of procedure to be employed.

INTRODUCTION

IN 1927, I watched Professor Felix Legueu at the l'opital Necker in Paris attempting the closure of a large vesicovaginal fistula by a transperitoneal approach, but working from behind the bladder. I was impressed with two aspects of this situation; the ready mobilization of the free portion of the bladder and the inaccessibility of the fistulous area for closure. It seemed to me that a better procedure could be worked out from above. Later, I had both successes and failures with the various modifications of intravesical closure techniques. It was not until I saw Roger Barnes' technique for marsupialization of adherent vesical diverticula that the rationale of bisection of the bladder extraperitoneally seemed to offer a much better method of closing high-lying vesicovaginal fistulae. Later, I found that a somewhat similar procedure, using the intraperitoneal approach, had been described by Swift-Joly of London.

I am presenting this method, with detailed case reports, in order to emphasize a procedure which I believe will help other surgeons cure a most disagreeable and annoying anatomical abnormality. The procedure is somewhat more extensive than many of the transvesical suprapubic operations previously described. If properly performed with viable tissue, it seems to insure a successful conclusion.

Since my colleague, Dr. J. Kenneth Sokol, and I first re-

ported this technique at the annual meeting of the North Central Section of the American Urological Association in Milwaukee, Wisconsin on October 12, 1950, two similar contributions have been presented: one by George J. Streat of Montreal, Quebec in December of 1952 and another by the late James Sargent of Milwaukee, Wisconsin at the annual meeting of the American Association of Genitourinary Surgeons in 1954.

I wish to acknowledge the help of my associates, past and present. They have not only assisted me at various times with this procedure, but have themselves applied the technique successfully in difficult cases of their own: J. Kenneth Sokol and George J. Bulkley, who are my present associates; and my prior associates, Robert W. McAllister of Macon, Georgia and Edmund Crowley of Los Angeles, California.

The most grateful patient you will ever have is the woman for whom you have stopped the uncontrollable flow of urine.

VINCENT J. O'CONOR

CONTENTS

| | |
|--|----|
| Foreword | v |
| Introduction | ix |
| An Operation for the Suprapubic Closure of Vesicovaginal Fistula | 3 |
| Etiology | 3 |
| Diagnosis | 5 |
| Possible Procedures to be used in the Correction of Vesicovaginal Fistula | 7 |
| Spontaneous Closure | 7 |
| Non-surgical Closure | 9 |
| Vaginal Closure | 10 |
| Suprapubic Closure | 11 |
| Illustrative Case Reports | 25 |
| Unsuccessful Procedures | 51 |
| Bibliography | 53 |

Suprapubic Closure of
VESICOVAGINAL FISTULA

AN OPERATION FOR THE SUPRAPUBIC CLOSURE OF VESICOVAGINAL FISTULA

ETIOLOGY

MOST OF THE fistulae described in the early part of this century were obstetrical aftermaths. The trauma of labor, mainly when unduly prolonged, may result in pressure necrosis with subsequent sloughing of the bladder wall. Forceps, or instrumental delivery with laceration of the bladder floor has frequently been cited as the cause of injury. It is quite possible, however, that the pressure necrosis had occurred before the application of the forceps, and, actually, it was the withholding of the forceps instead of their employment that was responsible for the injury.

Vesicovaginal fistulae have been found in the bodies of Egyptian mummies and in some of the better preserved remains found at Pompeii and Herculaneum in Italy. We can presume that all of these followed an obstetrical experience. Modern improvements in obstetrical practice have largely eliminated this cause of fistula in most sections of America.

Today the greatest number of fistulae between the bladder and the vagina follow operations on the female pelvic organs. The more widespread use of vaginal hysterectomy, total adominal hysterectomy and the Wertheim procedures have, undoubtedly, resulted in a greater incidence of fistulae, both vesicovaginal and

ureterovaginal. That the incidence of this disaster is not infinitely greater than it is stands as a tribute to the present-day near-perfection in surgical technique which has resulted from improved fundamental training of the younger generations of surgeons, gynecologists and urologists. Some of these fistulae result from sloughs following tissue destruction through the open bladder from the actual cautery or the high frequency current. Coagulation, or electrical resection of papillary or infiltrating tumors of the bladder, either by transurethral or transvesical procedures account for too many of these injuries. Resection of the vesical neck for polypi, fibrous contractures, or congenital stenosis may be followed by fistula. In the hands of the inexperienced operator, such procedures in infants or young girls should not be employed. Irradiation therapy has been responsible for many vesicovaginal fistulae. High voltage x-ray, radium element or radon seeds have all been responsible for delayed sloughing. A fistula may develop months or even years after such treatment. We have seen three patients in whom syphilis appeared to be the underlying cause of fistula after an obstetrical injury. Two of these closed after specific antiluetic therapy. We have never seen a fistula due to tuberculosis of the bladder, although these have been recorded.

In two early teen-age girls, an opening between the vagina and bladder occurred after sitting upon the mallet of a croquet stick while awaiting a turn to play. The mallet, being dried out and weakened, fractured in such a manner that the handle split into a bayonet-like shaft which readily penetrated the perineum, vagina and bladder. Parents should recognize the danger of this practice and forbid it.

Irritating lesions from continuous pressure of a foreign body, such as a pessary, have been reported as causing sloughs and subsequent vesicovaginal fistula formation. We have observed none of these.

In the present-day fistulae that are seen after gynecological and urological procedures, the opening is usually located much higher in the bladder wall than when the injury was primarily obstetrical. The surgical closure in this group of patients, rather than the low-lying ones, is the subject of this report.

Closure of a vesicovaginal fistula should not be considered the special prerogative of any surgical specialty. Combined urologic and gynecologic judgment is frequently necessary in selecting the proper method of treatment.

At Chicago Wesley Memorial Hospital, we are fortunate in our present practice to have in operation a most satisfactory team-work between the urological and gynecological departments. Even the older surgeons have gradually recognized the special problem involved, and, as a rule, defer to the advice of the urologist as to the proper procedures in the diagnosis and treatment of vesicovaginal fistulas.

DIAGNOSIS

Careful and complete preoperative urological investigation should precede the operative attack in each instance. This study includes cystoscopic examination, ureteral catheterization, excretory, and, if necessary, retrograde urography. Multiplicity of fistulae may be demonstrated by vesical or ureteral injections of colored solutions. Intravenous injections of indigo carmine or methylene blue solutions may be helpful in locating the

vaginal position of the fistulous orifice. *It is not unusual for a patient to have more than one opening between the bladder and vagina.* The presence of a large obvious fistula should not mislead the cystoscopist in his attempt to discover another smaller opening if one exists. Vesicovaginal and ureterovaginal fistulae occasionally co-exist and this fact should always be recognized before the operative attack is planned.

The urologist should conduct a careful examination even when the fistula is a low-lying one resulting from an obstetrical injury. The condition may seem simple and readily amenable to the type of vaginal repair usually performed by the experienced gynecologist. Unless the gynecologist is also an experienced cystoscopist, he will frequently need the help and advice of a urologist. Stress incontinence, due to weakness or injury of the pubococcygeus group of muscles, may exist in the presence of a vesicovaginal fistula. This condition should be recognized, if possible, before operation, and the reparative surgery planned so as to correct both conditions at the same time. It should be emphasized that in studying the upper urinary tract, a dilated tortuous ureter is much more vulnerable to surgical injury during gynecological operations than is the normal ureter. A certain number of ureterovaginal fistulae result because a true picture of the upper urinary trees has not been obtained before surgery. Urinary infection must be recognized and the organisms isolated so that specific antibiotic therapy can be applied. The healing potential of the vaginal mucosa is said to be enhanced by estrogenic hormones. These should be administered in proper dosage during the pre- and postoperative period. The vaginal area should be examined for possible trichomonas or yeast infection, and, if present, specific local treatment advised.