VESICOVAGINAL FISTULA

Report of a Case

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The following case is presented not only because it rather typifies the cases of vesicovaginal fistula encountered, but also to report the successful repair of an unusually large vesicovaginal fistula and to call attention to certain measures adopted in the postoperative treatment which we felt were of definite value in the successful outcome of the problem.

The patient was a married housewife, 50 years of age, whose chief complaint was leakage of urine from the vagina. Three years previous to admission, amputation of the cervix had been performed, following which urine did not pass normally but dropped into the vagina. The presence of a vesicovaginal fistula was recognized and during the following year three attempts had been made to close it; two, according to the history, were done by the vaginal route and the third was a suprapubic cystotomy. However, all these operations had been unsuccessful and for two years, urine had been leaking constantly through the vagina, all the urine being passed in that way as the patient was unable to retain any urine in the bladder. The patient had been married for ten years, had had no children, and there had been no pregnancies. The past history was essentially negative and there had been no serious illnesses.

On physical examination, the patient was found to be a well-developed, rather obese woman who weighed 163½ pounds. Her blood pressure was 130 systolic, 80 diastolic. Examination of the head and neck yielded no positive findings and the heart and lungs showed no abnormalities.

On vaginal examination, a considerable quantity of urine was found in the vagina. Examination with a speculum disclosed the presence of a large fistulous opening on the anterior wall of the vagina. This measured about 2 cm. in diameter and through it the mucosa of the bladder could be seen. The fistula easily admitted the gloved index finger and was surrounded by considerable, rather inelastic, scar tissue. The urethra was catheterized and found to be intact.

The essential laboratory data showed 4,100,000 red blood cells, 6,650 white blood cells, and 72 per cent hemoglobin. The blood urea was 39 and blood sugar 152 mg. per 100 cc. Both the Wassermann and Kahn tests of the blood gave negative reactions.

Operation was advised and, because of the large size of the fistula, repair through a suprapubic cystotomy incision was deemed advisable.

Operation was carried out under spinal anesthesia with the patient in the Trendelenberg position. A midline suprapubic incision was

made along the old scar and carried down to the prevesical space. The bladder was identified and opened and, on retracting it, the fistula was exposed. It was found to lie immediately above the interureteric ridge and extend very close to the left ureteral orifice and across almost to the right ureter. Both ureters were catheterized to avoid injury, following which the mucosa of the bladder was carefully dissected away from the fistula, thus separating the vaginal mucous membrane from the mucous membrane of the bladder. The vaginal mucosa was brought together with a single row of interrupted sutures, following which the mucosa of the bladder was brought together with an interrupted layer of mattress sutures, causing the bladder mucosa to be inverted. The catheters were then removed from the ureters and the wound was closed, suturing the bladder snugly around a suprapubic mushroom catheter. The incision was then closed in layers as usual.

Immediately after operation, the patient was placed face down on a Bradford frame which was elevated about six inches above the bed, thus affording absolutely dependent drainage of urine from the bladder. The purpose of this was to prevent urine from bathing the operative area and by this means promote better healing of the wound. The patient remained in this position for five days, during which time absolutely no urine drained into the vagina. She was then removed from the Bradford frame and allowed to lie normally in bed. On the ninth postoperative day, the suprapubic tube was removed and an inlying urethral catheter was placed for continued drainage of the bladder. The suprapubic wound healed promptly and five days later the urethral catheter was removed. Normal voiding did not follow immediately and intermittent catheterization was required for two days; then urine was passed normally, quantities as large as 200 cc. being passed at a single voiding.

The convalescence was uneventful throughout and the patient was dismissed from the Hospital on the eighteenth postoperative day. At this time, she was able to void normally and there was no leakage of urine into the vagina. Recent word from the patient, three months after operation, informs us that she remains well, voids normally, and the capacity of the bladder has increased.

Comment

The suprapubic operation was elected because of the large size of the fistulous opening and the fact that the patient had had three operations previously. It has been our experience that the vaginal approach is more suitable in the cases where primary operation is carried out on small fistulae. It seemed to us that the dependent drainage afforded by the face-down position contributed a great deal to the success of the repair in this case. We claim no originality for this method of treatment

as it doubtlessly has been used many times by others, nor do we feel that it was necessarily indispensable to the cure which was obtained as the same favorable outcome might have occurred had it not been used. We had not previously employed it in any case of vesicovaginal fistula but, on theoretical grounds, it seems sound and we believe that we shall employ it more often in the future.

Incidence: The exact incidence of vesicovaginal fistula cannot be determined accurately but that it is not an uncommon lesion is indicated by the fact that 86 cases are found in the records of the Cleveland Clinic. Doctor Lower[1] reported 71 of these in 1935, since which time 15 cases have been added.

Etiology: The causative factors are shown in table 1, which shows that almost 50 per cent of all cases follow hysterectomy or other types of pelvic operations. Childbirth is another cause but improvements in obstetrical methods are decreasing the incidence of fistula due to this factor. A third common cause is malignancy, either of the cervix or the bladder, and in some cases the use of large doses of radium has contributed to the development of a fistula.

TABLE 1

Causative Factors in Vesicovaginal Fistula

Pelvic operations	42
Hysterectomy 36	
Other pelvic operations 6	
Childbirth	13
Resection of bladder (for carcinoma)	5
Carcinoma (untreated)	6
Radium	14
Not stated	6
Total	86

Diagnosis: The diagnosis ordinarily offers little difficulty, although occasionally the symptoms are erroneously interpreted as being due to urinary incontinence. In most instances, the fistulous opening can be demonstrated by careful speculum examination of the vagina, and the diagnosis may be finally established by injection of some dye, such as mercurochrome or indigocarmine, into the bladder and recovering the color on a vaginal pack. In most instances, cystoscopic examination should be carried out to determine the location of the fistulous opening in the bladder and also to rule out the possibility of a ureterovaginal fistula.

Treatment: The treatment is always surgical but no standardized operation is applicable. Many different technics have been described and advocated but the mutiplicity of methods serves only to emphasize the inadequacy of any one. The treatment must therefore be individualized and operation selected according to the lesion with which one has to deal. In the group of cases which we have seen, approximately 75 per cent have been repaired by the vaginal approach, whereas 25 per cent have been done through a suprapubic cystotomy. The decision as to which approach to select depends largely upon the size of the fistulous opening and its location. In general, the larger fistulae and those high up in an inaccessible portion of the vagina are best repaired by opening the bladder suprapubically. Successful repair of these fistulae is not a simple task and commonly operations are carried out repeatedly, one of our patients having had eleven operations before successful closure was achieved.

In a certain small group of cases, repeated attempts to repair these fistulae will fail and in certain others the fistulous opening is so large that repair is impossible. In such cases the ureters should be transplanted into the rectosigmoid, this having been necessary in nine patients in our series.

The high incidence of vesicovaginal fistula following hysterectomy and other pelvic operations emphasizes the importance of exerting great care to prevent the occurrence of this distressing complication. Although perhaps not absolutely preventable, its occurrence will be reduced if extreme care is taken in separating the bladder from the cervix when hysterectomies are performed and the avoidance of mass ligatures. The history of many of these cases indicates that the bladder is not actually opened at the time of the hysterectomy but the fistula developed later as the result of devitalization of tissue with subsequent sloughing. Thus, in most cases which follow hysterectomy, the history is that the leakage of urine into the vagina did not occur until a week or ten days following the operation.

Vesicovaginal fistula constitutes a most distressing lesion so that it is important to attempt to prevent its occurrence, but having occurred, it challenges the best efforts of the surgeon to secure its relief.

Reference

1. Lower, W. E.: Treatment of vesicovaginal and ureterovaginal fistula, Am. J. Surg., 28:234-241, (June) 1935.