

VESICO-VAGINAL FISTULA†

by

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Vesico-vaginal fistula is by no means an uncommon condition in India. Fortunately, gone are the days of Simpson when the condition was described as "beyond all relief and hope", and to-day cure is rather the rule and not an exception. Patients with fistula are treated as social and marital outcasts and no stone should be left unturned in restoring these people to normal life, who otherwise are useful members of the society.

Material and Methods

Present study comprises of forty-three cases of vesico-vaginal fistula treated at K. E. M. Hospital, Bombay, from 1st January 1962 to 31st December 1966. The cases were studied from the point of view of aetiology, operative management and post-operative follow up.

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Age Incidence

Seventy per cent of the patients were less than 30 years old.

Aetiology

Table 1 shows the various aetiological factors. Out of forty-three cases, thirty-five, i.e. 81.4%, were of obstetrical origin. Fifteen patients gave a history of prolonged labour without any instrumentation. In these the leaking of urine started 7-10 days after delivery. These cases are classified as due to pressure necrosis. Seventeen patients gave a history of obstetric vaginal interference. Table II shows the nature of interference. Six patients were unable to describe the exact nature of interference. Three patients developed a fistula following caesarean section; one of these was a classical section done at a district place.

In only eight patients was fistula due to gynaecological causes. Four of these were cases of cancer cervix. The first patient had a stage IV cancer cervix with bladder involvement, the other three had fistulae following Wertheim's hysterectomy, abdominoperineal resection and radium treatment for cancer cervix. There was

TABLE I
Aetiology

Obstetrical cases	Nos.	Gynaecological cases	Nos.
Pressure necrosis	.. 15	Cancer cervix	.. 4
Vaginal interference during labour	.. 17	Accidental injury to urethra	.. 1
Caesarean section	.. 3	Vaginal hysterectomy	.. 1
		Unknown	.. 2
Total	.. 35	Total	.. 8

TABLE II
Nature of Obstetrical Vaginal Interference

Obstetrical Interference	Nos.
Forceps	.. 5
Craniotomy	.. 2
Internal podalic version	.. 1
Shoulder dystocia	.. 2
Breech extraction	.. 1
Unknown	.. 6
Total	.. 17

one fistula following vaginal hysterectomy and another after accidental injury to urethra. In two cases aetiology of the fistula was not known.

Type of lesion

Vesico-vaginal fistula was the commonest type. There were five vesico-cervical fistulae out of which two had developed after a caesarean section. There were seven bladder neck fistulae involving both the urethra and the bladder.

Size of the fistula

Ten fistulae were more than 2 cms. in size. In these cases the bladder mucosa was found to be prolapsing through the deficient anterior vaginal wall. The repair was difficult due to extensive loss of tissue and supplementary procedures, such as Martius graft, were found necessary. Moreover the ureteric openings were ex-

posed and there was a danger of accidental ligature of the ureters during repair. Two patients had two fistulae each and one patient had three fistulae.

Duration of fistula

Twenty-eight i.e. 60 per cent of the patients came for treatment within a year of onset of the symptoms. The longest duration was 20 years in an obstetric case. The longer the duration the more the fibrosis; the edges become almost cartilagenous in long-standing cases due to constant irritation of the tissues by the urine.

Amount of fibrosis

Eleven patients had extensive fibrosis. Three patients had vaginal stenosis making an approach to the fistula very difficult. Two patients had contraction of bladder, one of these was suspected to be a thimble bladder resulting from tuberculous cystitis, but this could not be proved.

Previous attempts at repair

Only four patients had previous attempts at repair, three of them being vaginal and one abdominal, prior to coming to our hospital.

Associated complications

Table III shows that three patients with fistula of long-standing had

TABLE III
Associated Complications

Complication	Nos.
Vesical calculi	3
Recto-vaginal fistula	3
Diabetes	2
Perineal tear	1
Haematometra	1
Hydronephrosis and hydroureter	1
Total	11

vesical calculi. These were phosphatic stones. Two of these were operated per vaginam and one per abdomen. Three patients had associated recto-vaginal fistulae. In one patient there were two big rectal fistulae. Diabetes was detected on routine urine examination in two patients. Both the patients were multiparous and had given birth to big babies. Perineal tear, haematometra and hydronephrosis were present in one case each.

Preoperative investigations and treatment

A plain rubber catheter or a bladder sound was passed into the urethra to test its patency. Sound also helped to detect calculi. A methylene blue test was done whenever necessary to establish the diagnosis, exact situation and number of fistulae.

Routine examination of blood and urine was done in all cases. Urine was also sent for culture and antibiotic sensitivity. Eight patients with urinary sepsis were treated vigorously with sulphonamide drugs or antibiotics.

Biopsy from the edge of the fistula in four patients, suspected of having cancer of cervix, showed that three

of them had an active cancerous lesion, two being recurrences following Werthiem's operation and abdomino-perineal resection. The remaining patient had radiation necrosis. The fistula had resulted one year after radium treatment.

A plain x-ray of abdomen was taken in each case and intravenous pyelography was done in selected cases. One patient had hydronephrosis and hydroureter and three patients had vesical calculi.

Whenever the fistula was inaccessible, either due to vaginal stenosis or due to its peculiar situation, an examination under anaesthesia was carried out coupled with methylene blue test. Cystoscopy was done in only one case when a tuberculous cystitis was suspected.

Local skin sepsis was treated with an indwelling catheter and zinc paste was applied to the skin to protect it from urine.

One patient who developed a fistula thirteen days after a caesarean section done elsewhere was put immediately on urinary antiseptic and an indwelling catheter was kept in for two weeks. Fistula healed spontaneously.

Details of operative treatment

Spinal was the anaesthesia of choice, because of less bleeding and complete relaxation.

Out of forty-three patients, two with cancer of cervix refused operation and one with post-caesarean fistula was cured by conservative treatment.

Thus 40 patients underwent operation. In all fifty-one operations were

done, some patients being operated on more than once.

Table IV shows the nature of operation. Collis's flap-splitting opera-

TABLE IV
Nature of Operation

Nature of Operation	Nos.
Flap-splitting	35
Sim's edge paring	3
Transvesical	2
Transabdominal	1
Latzko colpocleisis	2
Urethral reconstruction	2
Transplantation of ureters	4
Lousley Johnson's operation	1
Combined vaginal and abdominal	1
Total	51

tion was the commonest. Chromic catgut was used for suturing the bladder as well as vagina. Sim's saucerisation operation was done in three cases where fistulae were small. Three patients were operated on per abdomen. Two of these had transvesical repair and one had a transabdominal repair. The last patient had a vesico-cervical fistula following caesarean section.

Latzko's partial colpocleisis was done in two cases; one of these was after a hysterectomy and another was due to radiation necrosis.

Urethral reconstruction alone was done in two cases of urethro-vaginal fistulae. Reconstruction of urethra was also done in four cases of bladder neck fistulae along with the flap-splitting operation. One case of idiopathic fistula, where tuberculous cystitis was strongly suspected, underwent Lousley Johnson's operation. The rectum was separated from sigmoid, closed, and ureters were trans-

planted into it. Thus rectum acted like a receptacle for urine. The mobilised sigmoid was brought down through the perineum between the vulva and original anus.

Transplantation of ureters was resorted to in four patients. In one patient with stage IV cancer of cervix it was done as a palliative procedure. In the other three cases it was done after failure of one or more attempts to repair the fistula.

Three patients had repair of recto-vaginal fistula in addition to repair of vesico-vaginal fistula.

Post-operative management

At the end of the operation an indwelling Mallecot's catheter was introduced into the bladder and kept in for three weeks. Five patients had additional suprapubic drainage. Urinary antiseptics were prescribed. Post-operative course was uneventful except for three patients developing pyrexia. One of these had definite pyelitis.

Results

All the patients were followed up for about 1-2 months after operation. Only ten patients were followed up for 6 months to five years after operation.

Results of treatment. Out of forty-one patients who subjected themselves to treatment, thirty were cured. One was cured after conservative treatment and twenty-nine after operation, giving an overall cure rate of 73.17 per cent.

Twenty-six patients were cured at first attempt. Two were cured at second attempt and one patient required five attempts for cure.

Out of four patients in whom transplantation of ureters was done, three could be followed up. One patient died of cancer cachexia one month after operation, a second one is doing well, while the third is complaining of chronic ill-health. The last patient was not examined and the information was obtained through a letter.

Four patients developed stress incontinence following successful repair of vesico-vaginal fistulae. Kelly's repair was done in one patient and Aldridge sling operation in another. Two patients did not return for operation.

The patient, who had undergone a Lousley Johnson's operation, developed a sigmoido-vaginal fistula. She was advised repair of the same but she refused on the grounds that she had complete continence of faeces.

Seven patients were not relieved of their symptoms after one or two attempts at repair.

Discussion

One of the striking things about our data is that a large number of fistulae, 81.4 per cent, resulted from obstetric trauma. The experience of other Indian gynaecologists is similar. Lazarus gives an incidence of 95 per cent for obstetric fistulae in a total of 242. Chaudhari treated 31 obstetric fistulae within a short space of 3½ years. Experience of western authors is to the contrary. Moir had only 79 obstetric fistulae in a total of 324, giving an incidence of 24.4 per cent. Falk *et al* had only 20 obstetric cases in 20 years though they had 120 gynaecologic cases. This is probably due to improved obstetric care in western

countries. But it is difficult to understand how such a large number of fistulae developed after hysterectomy for benign conditions e.g. Moir had 101 cases following hysterectomy, while Falk *et al* had 87 such cases. This is not possible unless they get plenty of referred cases. We had about 600 hysterectomies during 1959-1965, 4 patients had bladder injury but none of them required a repair later on. The only patient with a post-operative fistula was operated on elsewhere. Same is the case with colporrhaphy fistulae of which Moir had 57.

A proper pre-operative examination and investigation are necessary. Particularly important are the patency of distal urethra, presence of calculi in bladder, accessibility of fistula, size, number, amount of fibrosis, adhesion to bones and so forth.

In this connection an examination under anaesthesia coupled with a methylene blue test is of inestimable value.

Almost all fistulae can be dealt with per vaginam. Falk *et al* prefer Collis's flap-splitting operation for obstetric fistulae and Latzko's partial colpocleisis for fistulae after hysterectomy. Neither the number nor duration or amount of fibrosis contraindicate vaginal approach. When the tissue loss is extensive ischio-cavernosus muscle graft of Martius can be used. Ingleman and Sundberg have advocated the use of pubococcygeus or rectus abdominis flap, or interposition of gracilis muscle for irradiation fistulae but we do not have any experience with these.

Best prospect for repair of a fistula is the first operation. Lazarus cured

80 per cent after first attempt. In our series out of 29 successfully operated cases, 26 were operated on only once. This does not mean that after one failure, there is no hope. Moir has cured a fistula after 19 repairs, done elsewhere, had failed.

The best time for operation is 3 months after delivery or trauma. During this time conservative treatment may be given a trial. Collins *et al* advocate the use of cortisone to shorten this waiting period. We do not have much experience with it.

Diversion of urine is an admission of failure on the part of the surgeon. We had a cure rate of 73.17 per cent. Though our results are not the best they are far from discouraging. Moir, Mahfouz and Chaudhari have given a cure rate of 100, 95 and 95 per cent respectively.

Summary

A study of forty-three cases of vesico-vaginal fistulae treated in K.E.M. Hospital, Bombay, is presented; 81.4 per cent of fistulae were of obstetric origin. Cure rate was 73.17 per cent.

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