VESICO-VAGINAL FISTULA

(Critical study of 118 cases)

by

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Urinary fistula is perhaps the most distressing and depressing disease from which women are liable to suffer. It has a marked effect on the general health and the morals of the patient. The constant urinary smell emanating from the afflicted person makes her so offensive to herself and to others as to lead her to avoid society.

This is a critical analysis of 118 cases of urinary fistulae admitted in the Medical College Hospital, Nagpur, over a period of nine years, from 1952 to 1960.

Bad obstetric practice is the commonest cause of urinary fistulae in our country. Improper intranatal care where the patient is in labour for days together results in pressure necrosis and sloughing of the anterior vaginal wall and bladder tissue, resulting in fistula formation. Out of 118 cases, 112 or 94.9 per cent were due to inadequate obstetric care. This is similar to the figures reported by Krishnan (1949) 98 per cent, Shastrakar (1962) 92 per cent from this very institution, Subhadra Devi (1956) 95 per cent, Shastrakar (1968) 93.69 per cent. Prolonged labour, causing ischaemic necrosis, resulted in fistula formation in 72 cases, forceps application after prolonged labour in 17, craniotomy after prolonged labour in 11, decapitation after prolonged labour in 2 cases. Fistula occurring in these 30 cases after forceps application, craniotomy and decapitation were not because of the instrumental delivery, but were the result of devitalisation of the

TABLE 1

Aetiology

	Aetiology	No. of cases
	(a)—Obstetrical causes	
1	Pressure necrosis due to prolonged labour	72
2	Forceps application after prolonged labour	17
3	Craniotomy after prolonged labour	11
4	Decapitation after prolonged labour	2
5	Caesarean section after prolonged labour (one with vertical incision over lower segment)	8
6	Caesarean hysterectomy for rupture uterus	1
7	Internal podalic version	1
		112
	(b) Gynaecological causes	
1	Abdominal hysterectomy for functional uterine haemorrhage	1
2	Vaginal cystostomy for bladder stone	1
3	Chemical applied to the vagina	2
4	Cause unknown	2
		6

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tissue due to prolonged labour and separation of slough taking place earlier on account of the instrumental delivery. In 8 cases the fistula occurred after caesarean section, out of which one was a vertical incision over the lower segment; in one case the fistula occurred after caesarean hysterectomy for rupture uterus; six were after lower segment caesarean section and one after internal podalic version (Table I). How far these manoeuvres were responsible for the fistula formation is easy to understand as the patients were in labour for 2-3 days.

Only six, i.e. 5 per cent of the cases, were because of gynaecological trauma. One was after an abdominal hysterectomy for functional uterine haemorrhage, one was after cystostomy per vaginam for removal of a bladder stone, two cases were the result of some chemical substances applied in the vagina for the treatment of secondary amenorrhoea and in two cases no aetiological cause was found for the fistula. This is in marked contrast to the figures of Western authors. Moir (1961) reported 163 cases out of 225 i.e. 70 per cent as gynaecological in origin.

Ninety-five patients, or 80 per cent, were below the age of 30 years; 80.5 per cent of the cases reported by Shastrakar (1962), 70 per cent by Ingle *et al* (1968) and 83 per cent by Das and Sen Gupta (1969) were below the age of 30 years.

Table II shows the distribution of cases according to the parity. Fifty-six cases or 47.4 per cent were after a prolonged and difficult first labour denoting that cephalopelvic disproportion probably was the responsible factor; 41.5 per cent of Shastrakar (1968) and 53.8 per cent of Das and Gulati (1968) patients were primiparae. Nine out of 15 cases who were second gravida gave a history of difficult and prolonged labour in the first pregnancy resulting in stillbirth. They also belong to the contracted pelvis group resulting in fistula formation in the second pregnancy. Out of 45 multigravidae, 33 had previous normal deliveries and the babies were alive. In these cases the fistula occurred after abnormal presentation during delivery — transverse lie in 4 cases, large baby over 9 lbs. in 3 cases and hydrocephalus in one. In 12 multigravidae, there was a history of difficult labour resulting in stillbirth or babies dying in neonatal period. This again shows that contracted pelvis was responsible for fistula formation. In those cases where pelvis had been assessed, 3 showed generally contracted pelvis and one flat type of pelvis.

In 25 cases the delivery was conducted in the hospital, 49 delivered at home and in 38 cases no mention was made about the place of delivery.

Table III shows the duration of labour after which patients sought medical advice or delivered at home

TABLE II
Parity

	Parity													
	1	2	3	4	5	6	7	8	9	10	11	12	13	Nullipara
No. of cases	56	15	7	8	6	6	7	4	5	1	-	-	1	2

TABLE III

Showing duration of labour

	Duration of labour					
	1 day	2 days	3 days	4-5 days	6 days	7 days
No. of cases	3	21	36	13	2	1

with some manipulation by untrained dais. The maximum number of cases, i.e. 36, delivered after 72 hours in labour. Delay in obtaining obstetrical care is because of ignorance, lack of proper medical facilities in the small villages and no proper transport facilities available from these small villages to the cities.

Eighty-four cases, or 71 per cent, came for repair within a year of onset of the symptom. The longest duration was 10 years in 2 cases — both obstertic in origin; 60 per cent of cases in Ingle *et al* series and 77 cases out of 95 in Shastrakar's series came for treatment within one year.

Sixty-one cases started leaking 24 hours after delivery and 24 cases from 4th to 12th day. One case who had a lower segment caesarean section by vertical incision started dribbling urine one month after the delivery.

Associated complications were present in 20 cases. Nine patients had rectovaginal fistula in addition to urinary fistula. Two patients had complete perineal tear, two had a second degree perineal tear, 2 had bladder stones and 2 had large tubo-ovarian masses due to puerperal infection. One had incisional hernia through the previous caesarean scar, one had complete destruction of the labia minora due to injury during delivery and one patient had a non-functioning kidney on the right side. Subhadra Devi (1965) reported 17 cases out of 500, Ingle *et al* (1968), 11 cases out of 43, and Das and Sengupta (1969) 33 cases out of 135 having associated complications.

TABLE IV

Showing type of urinary fistula

Type of fistula	No. of cases
Juxta-urethral	53
Mid-vaginal	14
Juxta-cervical	21
Combined	29
Vaginal vault fistula ..	1

Table IV shows the situation of the fistula. Juxta-urethral fistula involving the bladder neck and the urethra was present in 53 cases, combined fistula in 29 cases where the bladder neck, trigone of the bladder and the urethra were destroyed. In these 82 cases complete destruction of the urethra was present in 4 cases and partial in 22 cases. When the impaction of the head occurs in the pelvic cavity or at the outlet the urethra, base of the bladder and trigone are the site of compression, resulting in juxta-urethral and combined type of fistula. Juxta-cervical fistula was present in 21 cases, out of which in 5 there were bad cervical tears and part of the anterior lip of the cervix was completely destroyed. When the impaction of the head occurs at the brim before the full dilatation of the cervix, the latter becomes the site of compression with the bladder result-

ing in vesico-cervico-vaginal fistula. Fourteen cases were of mid-vaginal fistula and one case of vaginal vault fistula after abdominal hysterectomy. Shastrakar (1968) reported 38 cases of juxta-urethral, combined 20 and juxta-cervical 24 out of 95 cases; Das and Gulati (1968) reported juxta-urethral in 20 cases and juxta-cervical in 20 out of 78 cases; and Naidu (1962) had juxta-urethral in 90, juxta-cervical in 7 and combined in 28 out of 208 cases.

TABLE V

Showing number of operations and result

No. of operation	No. of cases	No. of cases cured	Presence of stress-incontinance in cured cases
One	80	41	5
Two	16	3	1
Three	7	1	1
Four	4	2	2
Five	1	1	1
Six	2	Nil	Nil

Table V shows the number of attempts at repair of the vesico-vaginal fistula and the number of cases cured. Out of 80 cases who had only one operation, 41 cases were cured. The best chance of successful repair is at the first attempt and the surgeon should take the utmost care to do the repair carefully. Out of 48 cases where anatomical continuity was established and no fistula was seen, 10 cases had stress incontinance. These are the cases where the bladder neck was involved, destroying the internal vesical sphincter, and the normal relation of the bladder neck with the urethra was absent. In two cases where the urinary fistula was also associated with a recto-vaginal fistula only the latter was repaired and repair of the urinary fistula was not attempted. In Shastrakar's series (1968) 58 cases out of 92 were cured at first attempt and out of 70 cases cured 5 had stress incontinence. Das and Gulati (1968) had 23 cases cured at first attempt out of 43 operated; Ingle *et al* had 26 cures after first repair out of 43 cases; and Das and Sengupta (1969) had 83 cases out of 135 cured at the first attempt.

TABLE VI

Showing uretero-colic transplantation

Uretero-colic transplantation	No. of cases
Without any attempt at vesico-vaginal fistula repair	6
After 1st attempt at vesico-vaginal fistula repair	1
After 2nd attempt at vesico-vaginal fistula repair	4
After 3rd attempt at vesico-vaginal fistula repair	2
After 4th attempt at vesico-vaginal fistula repair	1

Fourteen cases had uretero-colic transplantation. In six cases where there was extensive destruction of the bladder and vaginal tissue with marked stenosis of the vagina, no attempt at repair of the fistula was done and the patients were taken up for uretero-colic transplantation. In 8 cases where the repair failed and there was not much hope for future successful repair, uretero-colic transplantation was done. In Das and Gulati (1968) series out of 78 cases, 10 cases had uretero-colic transplantation as a primary procedure and in 6 cases where the repair failed uretero-colic transplantation was done. In Das and Sen Gupta's (1969) series, 20 cases had uretero-colic transplantation.

Table VII shows the type of the operation done and the number of

TABLE VII
Showing type of operation and success rate

Type of operation	No. of cases	No. of cases cured
1 Saucerisation	4	2
2 Flap-splitting operation	86	39
3 Abdominal (extra-peritoneal) approach	2	Nil
4 Abdominal approach after symphysiotomy	6	1
5 Flap-splitting operation with Martius' graft	10	6

cases cured. Hundred cases were repaired through the vaginal route. Out of 86 cases operated by flap-splitting method, 39 cases were cured. In 10 cases where Martius' graft was put, 6 cases were cured. This type of repair is essential for the bladder neck fistula where the healthy fatty tissue graft separates the urethra and the bladder from the defective vaginal wall and gives a support and fills up the dead space. Eight cases had abdominal approach — 2 extra-peritoneal and 6 after symphysiotomy. When the fistula is situated in one of the less accessible areas of the bladder, where the location limits the surgeon's ability to obtain good exposure and adequate mobilisation of the tissue, the abdominal route is employed.

Out of 118 cases, two died — one died of pulmonary embolism after a flap-splitting operation and the other died of peritonitis after a uretero-colic transplantation.

Discussion

The incidence of vesico-vaginal fistula due to bad obstetric practice is still very high in our country. The incidence is 94.9 per cent in the present series which tallies with the incidence of other authors of our country. It affects the woman in the prime of her obstetric carrier ruining the rest of her life. Fifty-six cases were in primigravidae and ninety-five cases were below the age of thirty years. This is because of the prevalence of ignorance and illiteracy in our country which lead to mis-management of these primigravidae by untrained personnel. Forty-five cases were multiparae which shows that every labour must be, to some extent, a trial of labour. In the present series 49 cases were delivered at home and 36 cases sought medical advice after 3 days in labour. This also shows the limits of tolerance in our people.

Many of the patients who deliver at home do not come to the hospital till after much scarring and fibrosis have set in. Only 56 cases came to the hospital within six months of the onset of the symptoms. If these patients had been seen earlier further scarring and fibrosis could have been prevented by putting them on antibiotics and cortisone therapy. Extensive scarring and stenosis of the vagina was present in 36 cases which made the approach to the fistula very difficult and the repair therefore unsuccessful.

Juxta-urethral fistula was commonest in this series. Same is the experience of the other authors in this country (Krishnan, 1949; John, 1954; Shastrakar, 1962 and 1968). The fistula at the bladder neck is notoriously difficult to close because the tissues are delicate and there is so little tissue to work with. Shaw (1949), Krishnan (1949), Moir (1961), Falk (1961) and Shastrakar (1961) are of the same opinion. It is quite difficult to achieve anatomical

closure at this place and the physiological function is still much more difficult to achieve. These are the cases where Martius graft, when put in, forms and excellent support and padding. Out of 10 cases where Martius graft was used 6 cases were cured. The mid-vaginal and juxta-cervical fistulae are easy to close and the cure rate is high. The most difficult fistulae to close are the combined type where there is complete destruction of the vesico-vaginal septum and very little tissue left for repair. Sometimes the posterior surface of the symphysis is entirely exposed and bare.

About 50 per cent was the success rate in the fistula repair at the first attempt, out of which 5 had stress incontinence, a trivial disability as compared to the previous one. Uretero-colic transplantation when done reflects defeat on the part of the surgeon. Fourteen cases had uretero-colic transplantation, out of which one died of peritonitis. It shows that this procedure is dangerous and carries a high mortality. Preston (1951) had 32 per cent mortality in his 100 cases of uretero-colic transplantation.

The vaginal route of approach especially the flap-splitting operation has stood the test of time and has proved to be the best method of approach and repair. In the present series, 86 had the flap-splitting operation and 39 were cured.

To prevent this miserable condition in our young population attempts should be made to improve and make available medical facilities in the interior of the country and of course people should be made aware of the importance of such facilities. "Prevention is better than cure" should be the motto.

Summary

A study of 118 cases of vesico-vaginal fistulae treated in Medical College Hospital, Nagpur, over a period of 9 years is presented; 112 cases were of obstetric origin and 48 cases were cured.

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