

INTRAVENOUS PYELOGRAPHY BEFORE AND AFTER SURGICAL TREATMENT OF GENITAL PROLAPSE

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SUMMARY

Intravenous pyelography before and after surgical treatment was done in 32 cases. The changes in the urinary tract reverted to normal in 6 to 8 weeks.

Introduction

Uterovaginal prolapse is a common gynaecological condition. This alteration in the anatomical configuration of the genital tract is often associated with various changes in the urinary tract. Because of their proximity, disease of one system may present with symptom of the other. The present work was carried out to establish how far genital prolapse is accompanied by the changes in the urinary tract and whether these changes are corrected after surgical treatment of the former.

Material and Methods

Thirty-two cases of genital prolapse treated in unit II of the Dept. of Obstetrics & Gynaecology were taken up for this study. On admission, history was recorded in detail with special reference to the urinary symptoms. This was followed by a thorough clinical examination to

determine the type and degree of prolapse. Investigations included routine blood tests, blood urea, urine-routine and microscopic examination, and culture and sensitivity tests. Intravenous pyelogram was done in all cases preoperatively. Post-operative followup in 6-8 weeks included urine analysis, and I.V.P. The pre- and postoperative pyelograms were compared.

Observations

In all, there were 32 cases, of which 23 were premenopausal and 9 were postmenopausal. The relation of menopause with that of duration of prolapse is shown in Table I.

$X^2 = .56$ at 2 df. P more than .05. The correlation was not statistically significant.

The degree of prolapse with associated cystocele is given in Table II.

It will be seen that in first and third degree prolapse, cystocele was present in 100% and 90% respectively, whereas with second degree, 65.5% has associated cystocele.

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TABLE I
Duration of Prolapse in Relation to Menopause

Duration in years	Premenopausal		Postmenopausal		Total
	No.	%	No.	%	
Upto 5 years	10	43.47	4	44.44	14
5 to 10 years	7	30.43	3	33.33	10
Above 10 years	6	26.10	2	22.23	8

TABLE II
Degree of Prolapse in Association With Cystocele

Degree of prolapse	No.	%	Cystocele	
			No.	%
First degree	6	10.75	6	100.00
Second degree	16	52.00	10	62.50
Third degree	10	31.25	9	90.00

Urinary Symptoms

Urinary symptoms were present in 18 cases out of which 6 cases (33.3%) showed abnormal IVP. These symptoms are outlined in Table III.

TABLE III
Urinary Symptoms

Symptoms	No.	%	Abnormal IVP	
			No.	%
Frequency	8	25.00	2	25.00
Urgency	3	9.40	2	66.23
Difficulty	5	15.60		Nil
Stress incont.		Nil		Nil
Retention	2	6.50	2	100.00
Total	18	56.25	6	33.33

Urine Analysis

All cases had microscopic examination of urine and culture as well. The results are indicated in Table IV.

TABLE IV
Urinalysis—Preoperative

Microscopic Pus cells/hpf	No.		Culture	
	No.	%	No.	%
0-4	20	62.50	5	25.00
5-10	6	18.75	2	33.33

In all the cases of positive culture, the offending organism was *Esch coli*. These cases were treated before surgery with appropriate antibiotics.

In all cases blood urea level was estimated preoperatively. All except 2 had normal blood urea level, the latter without any symptoms.

Radiological Findings

The findings of Intravenous Pyelograms are shown in Table V. Two cases of kinking were associated with hydroureter, in one case (Fig. 1), there was a mega-ureter with gross hydronephrosis. On detail breakdown, 4 cases had grade I hydronephrosis, 6 had grade II and 1 had grade III hydronephrosis. The lone case of grade III hydronephrosis was a nulliparous woman with third degree uterine descent for more than 10 years.

TABLE V
Preoperative IVP

Radiological changes	No.	%
Hydroureter and Hydronephrosis	11	34.40
Kinking of ureter	3	9.40
Normal upper urinary tract	20	62.50

Table VI and VII show the relationship of abnormal urographic findings with the degree and duration of prolapse respectively.

$X^2 = 4.49$ at 2 df, P is more than 0.05. This relationship was not significant.

Vaginal pack and indwelling catheter were used routinely in all cases of vaginal repair and removed after 24 hours and 72 hours respectively. Most of the cases (86%) complained of dysuria after removal of the catheter. In only 1 the

TABLE VI
Relation of Degree of Prolapse With Abnormal IVP

Degree of prolapse	Abnormal IVP		Normal IVP		Total
	No.	%	No.	%	
First degree	Nil		6	100.00	6
Second degree	7	46.70	9	53.30	16
Third degree	5	50.00	5	50.00	10

TABLE VII
Relation of Duration of Prolapse to Changes in IVP

Duration in years	Abnormal IVP		Normal IVP		Total
	No.	%	No.	%	
Upto 5 years	1	7.14	13	92.86	14
6-10 years	5	50.00	5	50.00	10
11 years and more	6	75.00	2	25.00	8

$X^2 = 7.72$ at 2 df, P less than 0.02. The relationship is highly significant. Thus within 5 years of prolapse, only 7.14% of cases had abnormality of the upper urinary tract whereas it was almost 10 times more when the duration was more than 10 years.

Corrective Surgery

The Type of operative procedure is indicated in Table VIII.

TABLE VIII
Type of Corrective Surgery

Type of operation	No. of cases		Percent
	No.	%	
Fothergill's repair	12	37.50	
Ward-Mayo's operation	10	31.50	
Anterior colporrhaphy and Posterior colpoperineor- rhaphy	8	25.00	
Cervicopexy	2	6.25	
Total	32	100.00	

amount of residual urine necessitated institution of indwelling catheter for 48 hours more. Out of these, 20 cases (62.5%) showed presence of urinary infection. They were treated appropriately. Again the most common organism was *Esch. coli*, and *Proteus* and *Aerobacter aerogenosa* were present in only 5 cases.

Postoperative I.V.P.

All but 1 of the 12 cases had followup in 6-8 weeks after the operation. In all of them the upper urinary tract had reverted to normal. Only 1 case had her IVP after 2 weeks of the operation, as she expressed her inability to come for checkup after 6-8 weeks. She incidentally had mega-ureter and hydronephrosis. When the IVP was done after 2 weeks, the mega-ureter had reverted to normal but mild hydronephrosis persisted.

Discussion

The mechanism of ureteric obstruction in cases of genital prolapse is due to— (1) Kinking, of the urethra and stress by the cystocele; (2) intramural stretching in the bladder wall with stenosis, (3) compression of the ureter outside the bladder and (4) uterine artery causing compression of the ureter. Behelo *et al* (1973) have observed hydroureteric changes in 28.5% of their cases. Their study was similar to the present one as they have taken into account all degrees of prolapse. In the present study, however, 37.5% cases had various grades of upper urinary tract dilatation. This is in conformity with the observation of Behelo *et al* (1973).

Many others have also studied the anatomical changes in the ureter, and pelvis of the kidney in third degree uterine descent (Elkin *et al*, 1974; Jones and Evison, 1977; Parikh and Parikh, 1966 and Khanam *et al*, 1981). They compared well with the third degree prolapse cases of the present series.

In our series, all but one reverted to normal after 6-8 weeks of surgery. The remaining 1 had been transformed from grade III to grade II hydronephrosis after 15 days of surgery, and it can be presumed that she would become completely nor-

mal after the usual 6-8 weeks time. All the 10 cases of Jones and Evison (1977) reverted to normal after surgery. In 2 of their cases slight ureteral dilatation persisted (grade III hydronephrosis). Out of 12 cases of Khanam *et al* (1981), 2 cases of 3rd grade hydronephrosis persisted as grade II changes and 1 persisted as grade I change after 3 months of surgery. So it is evident that urinary tract changes do occur in cases of prolapse but they get reverted to normal after corrective surgery.

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See Figs. on 'Art Paper III