

EFFECT OF GYNAECOLOGICAL DISEASES ON URINARY SYSTEM

by

P. TIWARI,* M.B.,B.S., (Hons), M.S., Ph.D., D.F.P.

Gynaecological Urology is probably as old as medicine itself. The close relationship between the diseases of the female genital tract and urinary system was appreciated by the ancient Egyptians.

Due to intimate relationship between urinary and genital systems in the female, pathological changes in the former are very often associated with some alteration in the anatomy and the physiological function of the latter.

The present study was carried out on 100 patients with a view to find out the various changes which are likely to occur in cases of gynaecological pathology, like pelvic neoplasms genital prolapse and urinary fistulae.

After taking detailed history and clinical diagnosis (the type of causes and number chosen for study is shown in Table I), patients were subjected to pre-operative investigations like:

1. Measurement of residual urine.
2. Laboratory examination of urine.
3. Culture of urine and sensitivity.
4. Intravenous pyelography.

These investigations were carried out to note the changes in the urinary tract. The same were repeated in the postoperative period to see the alteration which took place after the operative treatment or if there was any new change as a result of operation.

*Reader, Department of Obstetrics & Gynaecology, Institute of Medical Sciences, Varanasi-221 005, (U.P.)—India.

TABLE I
Types of Cases

Type of case	No.
Fibromyoma uteri	22
Ovarian tumours	17
Carcinoma cervix	12
Genital prolapse	31
Vesicovaginal fistulae	10
Miscellaneous:	
Functional uterine bleeding,	3
Haematometra and	
Haematocolpos,	3
Corpus carcinoma	1
Adenomyosis uteri	1
TOTAL:	100

Result and Discussion

Majority of the cases encountered in the work had fibromyoma uteri. Pre-operative investigations of these cases suggested that urinary tract showed hydronephrotic changes which were directly proportional to the size of the fibromyoma and its situation as all the cases of cervical fibroid showed hydronephrotic changes as well as they pre-disposed to the urinary tract infection as a result of increased residual urine. Morrison (1960) showed ureteric dilatation in 58 per cent of ovarian tumours and fibroids and 18 per cent in fibroids alone. The present series findings are quite similar to Everett (1947). Hawkins (1962) also showed that hydronephrotic changes are more common in cervical fibroid. The present series also noticed this change (Fig. 1 and Table II).

TABLE II
Hydronephrotic Changes in Different Diseases

Diseases	No. of cases	Percentage of changes
Fibromyoma	22	40.9
Carcinoma cervix, stage II	12	8.3
Prolapse uteri	31	25
Ovarian tumour	17	35.2
Vesicovaginal fistulae	10	60
Miscellaneous	8	12.5

Bladder showed distortion of its outline which was directly related to the size of the tumour, specially rising above the pelvic brim. Morrison (1960) also showed bladder distortion in a great majority of cases. The common belief is that anatomical alteration in the bladder leads on to incomplete emptying of bladder and thus increasing the amount of residual urine as suggested by Antoine (1960). Urinary changes were more frequent in fibromyoma cases, specially the cervical fibroid probably due to close proximity with the urinary bladder.

Increased amount of residual urine (more than 2 ozs. as shown in Table III)

TABLE III
Increased Amount of Residual Urine

Diseases	No. of cases	Percentage of cases with increased residual urine
Fibroid	22	22.7
Prolapse	31	Nil
Ovarian Tumour	17	4
Carcinoma Cervix	12	Nil

was found in fibromyoma cases but no definite relationship could be established between this volume of residual urine and size of tumour. No previous work is available on this particular aspect. Urinary infection was more common in the cases of cervical fibroid probably due

to increased amount of the residual urine (Table IV). Urinary symptoms were

TABLE IV
Incidence of Urinary Infection

Diseases	No. of cases	Percentage of infection
Fibromyoma Uteri	22	22.7
Cancer Cervix	12	8.3
Genital Prolapse	31	41.2
Ovarian Tumour	17	11.7
Miscellaneous	1	12.5

present in 31.8 per cent of the fibromyoma cases in the present series (Table V). These had no direct relationship

TABLE V
Urinary Symptoms

Diseases	No. of cases	Percentage showing symptoms
Fibroid uteri	22	31.8
Carcinoma cervix	12	16.6
Genital prolapse	31	25.8
Ovarian tumour	17	5.8
Miscellaneous	8	12.5

with the size of the tumour. Its location however had great influence, as both the cases of cervical fibroid showed retention of urine. Another case of subserous pedunculated fibroid presented with only symptom of retention of urine. Antoine (1960) stated that "it is not the size but the location of the tumour in the uterus which causes the obstruction. "Big tumours, particularly fibroids, can compress the bladder to an extent that its lumen will resemble a thin crescent with concavity towards the tumour. Stallworthy (1960) described a fibroid arising in the retroverted uterus acts as a retroverted gravid uterus and causes retention. Other symptom in present series was frequency of micturition. Masani (1963) suggested that bladder symptoms

are proportionately in small cases because the bladder easily accommodates itself to the altered position. He also says that urinary symptoms are more common in the cervical fibroid and those that arise from the fundus and impacted in the pelvis.

Among the cases of carcinoma cervix stage II, 8.3 per cent showed ureteric dilatation. Hawkins (1962) gave a figure of 8.3 per cent abnormal pyelogram in cases of carcinoma cervix stage I and 20 per cent in stage II. The pyelographic abnormality may be due to involvement of parametrium or due to periuterine oedema. The dilatation may be attributed to lymph gland pressing over the ureter and becoming normal after the cause was removed.

The overall percentage of hydronephrotic changes in cases of genital prolapse was 25 per cent. It was more common in cases of procidentia where it rose to about 66 per cent (Fig. 2). Bhatt (1961), Brettauer and Rubin (1923) working in this field have shown higher incidence of hydronephrotic changes. Hawkins (1962) and Williams (1962) gave a good illustrative data of urinary infection after vaginal surgery and genital prolapse. In William's series, 50 per cent had infected urine before operation. Present study found 41.2 per cent cases of infected urine.

It is a common belief that genital prolapse is associated with a high residual urine due to the anatomical alteration in the bladder and atonicity of its musculature. Our study does not agree with the previous work as many of these patients are in the habit of reducing the prolapse and voiding urine. Raised incidence of residual urine was also made responsible for increased infection but this was difficult to correlate in our work as the re-

sidual urine was very little but infection was present in 41.2 per cent (Table IV). This may be due to poor hygienic status. Urinary symptoms present in our cases were:

1. Difficulty in micturition which was relieved when prolapse was reduced.
2. Frequency of micturition.
3. Retention of urine.
4. Stress incontinence.

The last two symptoms were less common. These are quite similar to those described by Jeffcoate (1975), Masani (1963) and Hawkins (1962). Urinary symptoms were present in 25.8 per cent cases among the 31 investigated. Distortion of bladder out-line was found in 12.9 per cent of the cases as shown in Table VI.

TABLE VI
Distortion of Bladder

Diseases	No. of cases	Percentage showing changes
Fibroid uteri	5	22.7
Prolapse	4	12.9

Ovarian tumours more or less behaved in the same manner as the fibroids but urinary symptoms were less common probably due to their site and mobility. Our percentage is little lower than given by Morrison (1960) 43 per cent in his series large ovarian showed ureteric dilatation but none of the small one. In our series large ovarians including one malignant showed ureteric dialation. Only 1 case presented urinary symptoms and 2 had urinary tract infection.

Among the cases of vesicovaginal fistula, 60 per cent showed unilateral dilatation of the ureter more on the affected side and all had urinary infection. Ureteric dilatation may be attributed to cystitis and pyelitis. These findings re-

semble that of Lazarus (1941) where intravenous pyelogram of the genitourinary fistula cases showed dilatation on the effected side. In this series 2 patients had gross dilatation of the upper urinary tract in whom fistula was irreparable through the vaginal route (Fig. 3).

One of our cases of haematometra and haematocolpos complained of urinary retention. Stallworthy (1960), described that "A history of primary amenorrhoea with periodic recurring hypogastric pain of many months duration followed by urinary retention is typical of haematocolpos due to an imperforate hymen." The cases of haematometra and haematocolpos in the present study showed dilatation of ureter and pelvis of the kidney on both sides and in one the right kidney showed rotation (Fig. 4) showing the association of urinary tract abnormality along with the genital tract.

Conclusion

The present study carried out 100 patients suffering from different types of gynaecological disorders concludes that there is a close relationship between the genital tract disorders and the urinary tract problems. Therefore, investigation of urinary tract forms an important part in the gynaecological diseases and vice versa for the diagnosis and prog-

nosis as well. Although for knowing which gynaecological disease has got how much effect equal number of cases should be studied from different diseases.

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See Figs. on Art Paper III