

Hormone Replacement Therapy in Radiated Cancer Cervix

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Summary

Urological complaints of 56 patients of carcinoma cervix were noted and a standing stress test and simple cystometry was done in all cases before starting treatment, 6 weeks after treatment and 3 months post-hormone replacement therapy. Twenty five percent patients had positive cystometry findings, 80% had stage III B disease and 73.4% were postmenopausal women. Positive cystometry findings increased to 48.2% following treatment, 20% after surgery and 54.3% following radiotherapy. After hormone replacement therapy the urological complains decreased and only 28.8% demonstrated positive cystometry findings. The response was more among premenopausal than postmenopausal women.

This study was performed in the Institute of Hematology – Oncology, Bahucharaji Road, Vadodara from January 1997 to January 1998, with the following aims.

1. To determine extent of urological complaints in patients of cancer cervix.
2. To determine urological complications following treatment of cancer cervix.
3. To determine effect of HRT on urological complaints following treatment of cancer cervix.

Material and Methods

Fifty six patients of confirmed carcinoma of cervix were included in the study. A standing stress test and simple cystometry was done in all cases before starting any treatment. For standing stress test the patient was asked to come with a full bladder. She was asked to stand with feet apart over a rubber sheet and asked to cough violently. Immediate loss of urine was confirmatory of genuine stress incontinence in absence of bladder contraction.

In simple cystometry the patient was catheterized with appropriate number of Foley's self retaining catheter and asked to stand. Sterile water was instilled slowly (50 ml at a time) into the bladder. The amount of water at which the patient reported her first sensation to void and when she felt her bladder was full

recorded.

First desire to void at bladder volume of less than 100 ml and a bladder capacity of less than 350 ml or greater than 650 ml was recorded as abnormal.

A rise in fluid level or overflow of the syringe in absence of bladder contraction (involuntary urine loss) was suggestive of unstable detrusor contraction.

Both these tests, standing stress Test and simple cystometry were repeated after 6 weeks of completion of treatment and at 3 months following hormone replacement therapy with 0.625 mg of conjugated estrogen daily.

Results

All 56 patients evaluated were multiparous. 25

were premenopausal while 31 were postmenopausal. Ten patients had stage IB disease, 15 had stage II A-B disease while 31 had stage III B disease.

Fifteen patients (26.6%) had urological complaints in the form of frequency (25%), dysuria (21.4%) and SUI (10.7%). While 26.6% were premenopausal, 73.4% were postmenopausal women.

On cystometry (Table I) 14 patients had positive findings, 4 had positive impulse on coughing and 11 had volume at first void less than 100 ml and a reduced bladder capacity. One patient demonstrated detrusor instability. The positive findings were more in stage III B disease (80%) as compared to 13.3% and 6.7% in stage II A-B and stage IB respectively.

Ten patients underwent Wertheims hysterectomy, 15 underwent Wertheims hysterectomy with preoperative or postoperative radiotherapy, while 31 received only radiotherapy. There was an increase

from 15 patients (26.6%) to 32 patients (57.14%) having urological complaints. Of these, all patients had complaint of frequency of micturation, 24 had dysuria, 18 had SUI and two developed vesico-vaginal fistulae.

Out of these 32 patients, 27 (48.2%) had positive cystometry findings (Table II). On standing stress test 4 patients demonstrated stress incontinence, 2 of which had undergone Wertheims hysterectomy and 2 had undergone Wertheims hysterectomy and had also received radiotherapy. 19 (70.3%) patients showed volume at first voiding less than 100 ml, 20 (74.07%) showed reduced bladder capacity less than 350 ml and 6 (22.2%) demonstrated detrusor instability. All of these patients had received radiotherapy. Two patients showed a bladder capacity of more than 650 ml after surgery. Two patients of radiotherapy developed vesico-vaginal fistulae.

Overall, positive cystometry findings were found in 20% patients of Wertheims hysterectomy, 54.3% in

Table I
Cystometry results in different stage of Ca Cx (n=14)

Sr. No.	Cystometry results	IB	II A-B	III B
1.	Impulse on coughing	-	-	3
2.	Volume of 1 st void < 100 ml	1	2	9
3.	Bladder Capacity < 350 ml	1	2	9
	> 650 ml	-	-	-
4.	Detrusor instability	-	-	1

Table II
Cystometry results in different treatment groups (n=27 pts)

Sr. No.	Cystometry results	Total no. of Pts	Treatment given		
			Wertheims (n=10)	Wertheims + RT (n=15)	RT (n=31)
1.	Impulse on coughing	4	2	2	-
2.	Volume at 1 st void < 100 ml	19	-	4	15
3.	Bladder Capacity < 350 ml	20	-	4	16
	> 650 ml	2	2	-	-
4.	Detrusor instability	6	-	-	6
5.	Fistula	2	-	-	2
			2 (20%)	5 (33.3%)	20 (64.5%)

group receiving radiotherapy.

Only 52 patients were evaluable for response to HRT as 2 patients of fistulae were not given HRT and 2 patients defaulted. There was reduction in the urological complaints from 57.14% to 21.2%. Of these, 11 patients complained of frequency and dysuria and 2 patients complained of SUI. There was also reduction in positive cystometry findings from 48.2% to 28.8%.

On standing stress test for genuine stress incontinence 2 premenopausal women showed marked improvement but there was no change in the postmenopausal women. There was improvement in the volume of first voiding sensation and bladder capacity in both groups. Both patients with increased bladder capacity responded to HRT. Out of the 6 patients with detrusor instability only 2 postmenopausal women did not show any improvement.

Discussion

In the present study, 26.8% patients had urological complaints at the time of initial presentation. Of these, 80% were having stage III B disease. Secondary infection following tumor necrosis and direct extension to the vesico-vaginal tissue leads to complaints of frequency, dysuria and SUI. (Higgins and Coppleson 1992) Lack of estrogen also predisposes women to various urological complaints. In the present study 73.4% of women were postmenopausal.

Following treatment, there was an increase in the positive cystometry findings from 25% to 48.2% (Table II). In radical surgery there is interruption of the parasympathetic and sympathetic nerves to the lower urinary tract, loss of anatomic vesical neck support and bladder overdistension leading to adverse urological complications in 10-70% of patients (Forney, 1980). In the present study also 20% patients developed a genuine stress urinary incontinence and 20% had a bladder volume more than 650 ml following surgery.

Radiation therapy leads to bladder mucosal inflammation, often with a low grade secondary infection, and this is manifested as urinary frequency, dysuria and sometimes bacterial cystitis (Bialas et al, 1989). Hanks et al (1983) reported 49% overall incidence of urological complications following radiotherapy which is comparable to 54.3% in the present study. The overall complication rate increased with clinical stage of the disease from 15% in stage II disease to 25% in stage III disease. In the present study, the complication rate increased from 33.3% in stage II disease to 58.06% in stage III disease. Bladder wall rigidity following submucosal

changes leads to reduced vesical capacity which produces complaints of urgency and frequency. (Morrow & Coppleson, 1992). In the present study 70.37% patients had volume at first void less than 100ml and 71.08% had a reduced bladder capacity. 22.2% patients developed detrusor instability. Severe radiation cystitis leading to mucosal necrosis can cause vesico vaginal fistula (Morrow & Coppleson, 1992). In our study, two patients of stage III B disease developed VVF following radiotherapy.

There was marked decrease in the positive cystometry findings following HRT in our study. Estrogen supplementation helps maintain the thickness of bladder mucosa by increasing blood flow in the vascular plexus. This strengthens the coaptation of the mucosal walls and increases the urethral resting pressure making involuntary urine loss difficult. (Lester & Miltons, 1987). In our study, while 62.5% of premenopausal women responded to HRT only 50% of postmenopausal women responded to HRT. Loss of estrogen receptors with increasing age and duration of menopause could be the possible reason for the less response seen in the postmenopausal women. (Dorothy, 1987)

Conclusion

26.78% patients of carcinoma cervix presented with urological complaints of which 80% had stage III B disease and 73.4% were postmenopausal. Positive urological findings increased from 25% to 48.2% following treatment. While there were 20% positive findings following Wertheims hysterectomy, these were 54.3% following radiotherapy.

There was reduction of positive cystometry findings from 48.2% to 28.8% following HRT. The response was more among premenopausal women as compared to postmenopausal ones. We recommend the use of Hormone Replacement Therapy (HRT) in all premenopausal patients of carcinoma cervix.

References

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