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An Anterior Colporrhaphy Applied in The Treatment of Urinary Stress Incontinence

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Between January 1976 and December 1979, 134 patients who had Urinary Stress Incontinence (USI) were performed by modified Kennedy method (plication procedure). Anterior colporrhaphy with plication sutures in the torn fascia of the urethra bladder has been employed as a routine surgical operation to treat women with stress incontinence. It is relatively simple and local anesthesia is applied with satisfactory effect. The overall cure rate was 94.03%. Complication of surgical procedures are minimum.

Key Words: Urinary Stress Incontinence (USI), Vaginal Profile [6], *Chain Cystourethrograms* [2].

Approximately 95 per cent of all clinically significant cases of Urinary Stress Incontinence (USI) were seen in multifarious women [1]. This suggests that the chief etiologic factor is tissue alteration by obstetrical trauma centered on the muscular and facial structures about the bladder floor, bladder neck, and urithra. This original injury is further affected by the inexorable forces of gravity and aging. It is also aggravated by obesity, chronic pulmonary disease with cough, and extraordinary physical activity with abdominal straining. The remaining minority of cases of urinary stress incontinence, relative in few number, is also due to tissue failure. However, these failure are caused by inherent weakness of the tissues and supporting structure - in effect, the gradual failure of tissue integrity.

Considering, therefore, that tissue alteration is the chief factor, reconstruction of anatomic changes and strengthening of weakened and torn tissues are the problems confronting the gynecologist.

MATERIALS AND METHODS

Between January 1976 and December 1979, 134 patients who had USI were performed by modified Kennedy method [5] (plication procedure).

The Plication Procedure

The patient is routinely prepared and dropped in lithotomy position.

Local anesthesia: 5cc of 1% xylocacine + one drop vasoconstricting agent.

To Infiltrate the anterior vaginal mucosa.

Two allis clamps are placed just one cm below the external meatus os and cut 3mm

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thick of the anterior vaginal mucosa longitudinal down toward the cervix. The full depth of the vaginal mucosa is incised and dissected to expose the urethra, bladder and the pillars of the bladder. The subjacent pubocervical fascia is dissected off.

The plicating sutures were properly placed with 2-0 silk, mattress sutures are taken in sufficient numbers to plicate the entire urethra. The most important suture is placed on the urethrovesical junction (bladder neck) marked by gentle traction on the ballon neck [4,5].

The second layer of this plication is done in a smilar manner using #00 chronic catgut. Again mattress sutures are taken over the entire length of the urethra as well as the bottom of the bladder, finally the pillars of bladder are identified and sutured together in the midline.

The redundant vaginal mucosa is trimmed away properly. The new edge of the resected vaginal mucosa are now reapproximated with continuous sutures of #00 chronic catgut.

Complete History

Age, para, obstetric trauma
Pulmonary disease, renal disease
Diabetes mellitus, others
Frequency of urination
Stress in continence: Sneezing or cough
Ordinary straining
Constant
Nocturnal frequency — Times per night
Constipation, habbit of bowel movement
Edema of the lower extremities
Bachache, bearing down sensation
Others

Physical Examination

Cardiovascular System
Pulmonary Tuberculosis
Neurologic System
Emotional Factors
Genito-Urinary System
Previous Lower Abdominal
Surgery & its Complications
Pelvic Examination
Vaginal Relaxation [7]
Vaginal Profile — Anterior Segament,
Superior Segament,
Posterior Segament [6].
Pelvic Masses — Gynecologic Origin,
Urologic Origin,
Enterologic Origin

Evaluation of the Urinary Tract

A Midstreat, clean-caught urine
A 1:750 zephiran solulion
A Small #16F catheter
Residual urine
Laboratory finding
Bacterial culture and drug sensitive test
Cystometry
Chain Cystourethrograms [2]
Intrinsic Pathology of Urinary Tract
Cystoscopy
Retrograde pyelography
Excretory Urography

RESULTS

From the experiences obtained in Taipei, it appears that the selection of patients remained to be a logical and effective method to predict the successes of the operation to correct the specific type of abnormal anatomic condition. Among *134* patients undergoing corrective surgery during the period of

1976-1979, the overall cure rate was *94.03%*, compared with the recognized cure rate is between *75* to *90%*. [3]

Table 1 shows the failure number related to the parity. 105 of 134 patients (78%) are between para III to VI, but there is no significant on the failure rate to the parity.

Table 1. Results of Operation for Stress Incontinence in 134 Patients

Para	No. of Patients	Failure
I	6	0
II	12	1
III	35	1
IV	29	3
V	26	1
VI	15	1
VII	5	0
VII+	6	1
Total	134	8

Failure rate was proportionally increased after the patient's age over 40. Shows on the Table 2.

Table 2. Results of Operation for Stress Incontinence in 134 Patients

Age	No. of Pts	Failure
20–30	4	1
31–40	59	0
41–50	47	4
51–60	18	2
61–70	4	1
70+	2	0
Total	134	8

Table 3 shows 103 of 134 patients (76%) admitted not more than 7 days. Only 8 of 134 patients (13%) admitted over 10 days.

Table 3.

Admission	No. of Patients
Less Than 5 Days	8
5	10
6	36
7	49
8	8
9	5
10+	18
Total	134

Table 4 shows 98 of 134 patients (73%) can void spontaneous on the 3rd operative days. 126 of 134 patients (94%) can void spontaneously within one week after the surgical procedure.

Table 4.

Voiding in	No. of Patients
2 Days	2
3	96
4	11
5	14
6	2
7	1
8	2
9	1
10	2
11	2
12	1
Total	134

Table 5 and Table 6 show the failure rate related to the degree of urethrocystocele. All

Table 5. Results of Operation for Stress Incontinence in 134 Patients

*Degree of Urethrocystocele	No. of Patients	Failure
0–0	2	0
0–1	3	0
0–2	1	0
1–1	30	0
1–2	19	0
2–1	10	1
2–2	51	4
2–3	11	1
3–2	5	2
3–3	2	0
Total	134	8

*The degree of urethrocystocele devided into 0, 1, 2, 3, the front number represent the degree of urethrocele, the later number represent the degree of cystocele.

Table 6. Degree of Urethrocystocele

Year	No. of Pts	0–0	0–1	0–2	1–1	1–2	2–1	2–2	2–3	3–2	3–3
1976	39			1	9	8	4	13	3	1	
1977	35	1	1		7	4	4	14	3		1
1978	47	1	1		11	5	2	20	4	2	1
1979	13		1		3	2		4	1	2	
Total	134	2	3	1	30	19	10	51	11	5	2
Failure	8	0	0	0	0	0	1	4	1	2	0
Failure	5.97	0	0	0	0	0	10	7.84	9.09	40	0

the 8 failure cases are found in the category anterior segment of vaginal profile 2-1 to 3-2. There are no failure cases found in the category below the mild degree of urethrocystocele 1-2.

Moderate degree of urethrocystocele (2-2) has a failure rate of 7.84%, while severe degree of urethrocystocele on 2-3 and 3-2 are 9.09% and 40% respectly.

Table 7 shows the mild degree of urethrocystocele has a complete 100% cure rate, while the moderate and severe degree are 93.75% and 83.34%. The cure rate of the total cases are 94.03%.

Complication of post-operation courses are not considerated severe, G-U infection was found in 27 of 134 cases (20.15%). Vaguial bleeding was found in 7 of 134 cases (5.22%). Rupture of rectum was found in one case. While performing the repaired of rectocele.

Table 7.

Degree of Severity	No. of Pts	Cure	Failure	Cure Rate %
Mild	36	36	0	100
Moderate	80	74	5	93.75
Severe	18	15	3	83.34
Total	134	126	8	94.03

Table 8.

Year	No. of Pts	Primary Cure	Final Cure Rate %	Final Failure
1976	39	35	89.98	4
1977	35	34	97.15	1
1978	47	45	95.75	2
1979	13	12	90.23	1
Total	134	126	94.03	8

Table 9.

Complication	No. of Complication	No. of Patients	Percentage
Vaginal Bleeding	7	134	5.22
G-U Infection	27	134	20.15
Rupture of Rectum	1	134	0.75
Rupture of Bladder	0	134	0
Total	35	134	26.12

Table 10. Failure Cases

Year	Name	Age	Para	Vaginal Profile
1976	Y. L. Shieh	47	III	32–10–31
1976	L. C. Chang	41	V	22–00–31
1976	C. H. Chen	28	VI	22–00–11
1976	C. C. Hwang	57	IV	21–00–11
1977	M. C. Hsu	57	II	23–00–11
1978	C. C. Chen	64	VIII	22–00–21
1978	P. C. Ru	47	IV	22–00–22
1979	C. C. Lee	43	IV	32–00–22

But no repture of urinary bladder is found in this series on Table 9.

FAILURES

All 8 cases of failure were found in those with moderate degree of urethrocystocele. In another series of 18 patient with severe degree of urethrocystocele, 3 were failures. Although there is obvious relationships between the degree of severity of the urethrocystocele, the surgical reason may be attributed to the angle of inclination to the vertical of the urethral axis greater than 90 degrees making surgical approach of the anterior urethrovesicle impossible because the detachment of AUV from the public bone.

DISCUSSION

In the three and half year study period, 134 patients were offered surgery, careful follow up indicated that 126 of these women regarded their continence control as perfect, 27 had reported some minor G-U infections, 7 had postoperative vaginal bleeding, 8 admitted no improvement. Success was confirmed by questioning the patients. It can be presumed there will be some failure in the future.

CONCLUSION

Anterior colporrhaphy with plication sutures in the torn fascia of the urethra bladder have been employed as a routine surgical operation to treat women with stress incontinence. The importance of case selection is confirmed.

The technic has wide applicability, it can be carried out as a separate operation, in conjunction with vaginal hysterectomy and posterior cloporrhaphy.

It is relatively simple. It has a high cure rate. It's use of local anesthesia is preferred.

Of the 134 women treated, 126 regard themselves as cured. It is our experiences at the Taipei clinic that this technique with careful case selection has excellent success rate in the management of mild stress incontinence can be a procedure of choice.

Remark:

This report has been presented at the Fifteen Congress of the Pan-Pacific Surgical Congress (Honolulu, U.S.A.) from January 12-18, 1980.

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前陰道成形術治療尿失禁

謝孟雄

1976年至1980年四年間，有134位尿失禁女性病人接受前陰道成形術治療尿失禁症狀，本手術加上 Plication Suture 於尿道與膀胱接觸處，以矯正後尿道膀胱角度（Posterior Urethrovesicle Angle），而達到治療婦女尿失禁之效果，本手術可以使用局部麻醉，手術簡單，其治癒率高達 94.03%，且其手術後出血等併發症極少，沒有膀胱受傷之情形發生，手術後尿道感染約佔百分之廿左右。

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