

SHORT COMMUNICATION

Suprapubic Bladder Drainage Following Anterior Vaginal Wall Repair

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URINARY retention following anterior vaginal wall repair is a problem familiar to all gynecological surgeons. The classical management by transurethral catheterization is often associated with great discomfort and anxiety for the patient and considerable inconvenience for the nursing staff. Moreover, repeated urethral catheterization predisposes to urinary tract infection.

The following study was carried out to assess the advantages (if any) of suprapubic over transurethral bladder drainage.

METHODS AND MATERIALS

The method used for suprapubic bladder drainage was essentially that of Taylor and Nickel.¹ After the operation, while the patient was still anesthetized, a catheter was inserted into the bladder via the urethra and a urine specimen was collected for culture and colony count. The bladder was injected with 250 ml. of sterile normal saline solution and the catheter was removed. The patient was then placed in the supine position and the skin of the lower abdomen was painted with povidine-iodine.

A 3½" 13-gauge needle was directed vertically through the midline at a point 2 cm. above the symphysis pubis. When the return of saline indicated bladder entry, an 18" No. 5 French polyethylene premature-infant feeding tube was passed through the needle into the bladder. By cutting off the dilated end of the feeding tube, the needle could be withdrawn. The tube was then connected to the ordinary tubing from an intravenous set by means of a 20-gauge needle. Stability of this connection was assured by taping it to half of a tongue depressor. A strip of 2" adhesive tape was secured with tincture of benzoin to the skin on either side of the feeding tube. The tapes were joined to one another in the midline so as to enclose and fix a 2" length of the feeding tube (Fig. 1). The tubing emptied into a drainage bag at floor level. Once the patient was ambulant, the suprapubic tube was clamped as tolerated and the patient was encouraged to void. When the amount of urine voided was sufficient to allow the tube to be clamped for as long as 24

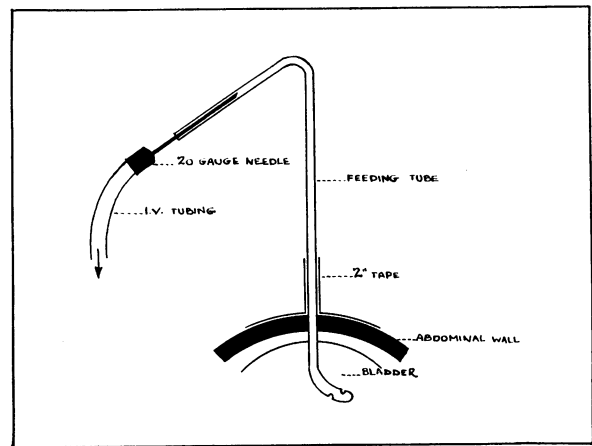


Fig. 1.—Suprapubic bladder drainage system for post-operative use.

hours, the tube was removed and the wound was covered with a small dressing.

Twenty-five cases were managed as above; 25 control cases were managed by the conventional method of transurethral catheterization. The ages of the test patients ranged from 27 to 72 years (mean: 46.3 years); the ages of the control patients, from 22 to 74 years (mean: 45.4 years). All of the patients had complained of stress incontinence; otherwise the clinical conditions were of various types. All operative and post-operative care was conducted by the authors between January 1 and July 31, 1968. Table I lists the surgical procedures performed.

The following information was recorded in each case: (1) voiding dates: (a) first voiding, (b) final catheterization; (2) duration of hospitalization; (3) urine cultures and colony counts: (a) in operating room, (b) on day 2,

TABLE I.—SURGICAL PROCEDURES PERFORMED

	Test Control	
Primary vaginal repair with hysterectomy . . .	16	17
Repeat vaginal repair with hysterectomy . . .	1	1
Primary vaginal repair without hysterectomy . . .	6	5
Repeat vaginal repair without hysterectomy . . .	2	2

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(c) day 7, (d) day 42; (4) voiding discomfort:
(a) in hospital, (b) on day 42.

RESULTS

1. Voiding Dates

The intervals between operation and first voiding and between operation and final catheterization are set forth in Table II.

TABLE II.—RETURN OF ABILITY TO VOID

	First voiding after operation		Final catheterization	
	Test	Control	Test	Control
0- 5 days..	13	10	9	6
6-10 days..	12	11	13	9
11-15 days..	0	3	3	7
over 15 days	0	1	0	3
Mean.....	5.0 days	7.4 days	7.3 days	9.0 days
Range.....	1-10 days	2-27 days	3-14 days	3-27 days

2. Duration of Hospitalization

The mean duration was 11.8 days in the test group and 12.8 days in the controls.

3. Urine Cultures and Colony Counts

The results are summarized in Table III.

TABLE III.—URINARY CULTURES AND COLONY COUNTS

Days after operation	No. of pathogen colonies per ml.	Patients	
		Test	Controls
0	10,000 - 100,000.....	0	0
	over 100,000.....	1	0
2	10,000 - 100,000.....	0	1
	over 100,000.....	2	1
7	10,000 - 100,000.....	2	6
	over 100,000.....	2	4
42	10,000 - 100,000.....	2	1
	over 100,000.....	0	1

4. Symptoms

During their hospital stay some patients, despite negative urine cultures, complained of burning on micturition and painful bladder spasms. In the test group there were two such patients and in neither was the discomfort severe. In the control group there were six such patients, in three of whom the discomfort was severe.

When interviewed six weeks after operation, urinary urgency and irritability in the absence of positive urine cultures were present in two patients of the test group, but in neither was the discomfort severe. In the control group there were seven such patients and in two the discomfort was severe.

DISCUSSION

The use of suprapubic catheterization failed to shorten the period of urinary retention in most patients. The method seemed to be successful, however, in avoiding prolonged retention in the occasional patient who might have developed this problem with transurethral catheterization.

The duration of hospital stay was not shortened appreciably by the method under investigation, but even when voiding was completely satisfactory the authors chose not to discharge patients less than seven days after repair or ten days after repair with hysterectomy.

The incidence of urinary infection was reduced but not eliminated by the test method. It is possible that the infection rate could be reduced further by the omission of transurethral catheterization in the operating room. The operation could be started with a partially filled bladder which, by the conclusion of the operation, would contain sufficient urine to allow introduction of the suprapubic tube without previous saline injection. Patients with positive cultures were given a 30-day course of sulfamethoxazole or methenamine mandelate according to the sensitivity of the isolated organisms.

The urinary discomfort in the absence of infection was probably due to traumatic urethrorrigo-nitis. The trauma could have been the operation itself or the transurethral catheterization. The latter origin was largely eliminated by the test method.

Patients who were managed by the test method seemed to be at a psychological advantage inasmuch as they were able to attempt voiding at any time. They did not have to await that "moment of truth" when the indwelling transurethral catheter was removed; also their clamped tubes were far less awkward to manage than the Foley catheters.

From the standpoint of nursing care the suprapubic tube was clearly preferable. Instead of repeated catheterization using a time-consuming sterile technique, the nurses had only to irrigate the suprapubic tubes with saline on the infrequent occasions when obstruction was suspected.

One patient pulled out her suprapubic tube while sleeping (this case was discarded from the series). Another patient expelled the vesical end of the tube through the urethra; the tube was removed and the patient continued to void satisfactorily. There was no problem with re-tropubic infection or fistula formation.

CONCLUSIONS

Suprapubic catheterization in place of transurethral catheterization in the postoperative management of cases of anterior vaginal wall repair has been found to offer the following advantages: (1) avoidance of prolonged urinary retention; (2) reduction in the number of urin-

ary infections; (3) reduction in the number of cases of traumatic urethrotigonitis; (4) improvement in the psychological state of the patient; (5) reduction of necessary nursing care.

REFERENCE

1. TAYLOR, B. D. AND NICKEL, J. E.: *Obstet. Gynec.*, 28: 854, 1966.

CASE REPORTS

Acute Boric Acid Poisoning:

Report of an Infant Successfully Treated by Peritoneal Dialysis

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IT has been recognized for many years that boric acid is a weak antiseptic with no useful clinical application and that it is potentially very toxic. However, it is still listed in the pharmacopeia and is readily procurable at any drug-store without prescription. This case report emphasizes the hazards of the topical use of boric acid in young infants and illustrates the value of peritoneal dialysis in acute boric acid intoxication.

On November 29, 1967, a 27-day-old baby girl was admitted to the emergency department of the Montreal Children's Hospital with a 24-hour history of vomiting, diarrhea, irritability, fever and generalized redness of the skin.

On admission the weight was 3.62 kg., temperature 101.2° F., respiratory rate 50 per minute, heart rate 120 per minute, and blood pressure 94/70. She was irritable and hypertonic, with occasional jerking tremors of the arms and legs and slight arching of the back. The eyes rolled upwards symmetrically and the pupils were small and reactive. Reflexes were normal. The anterior fontanelle was slightly

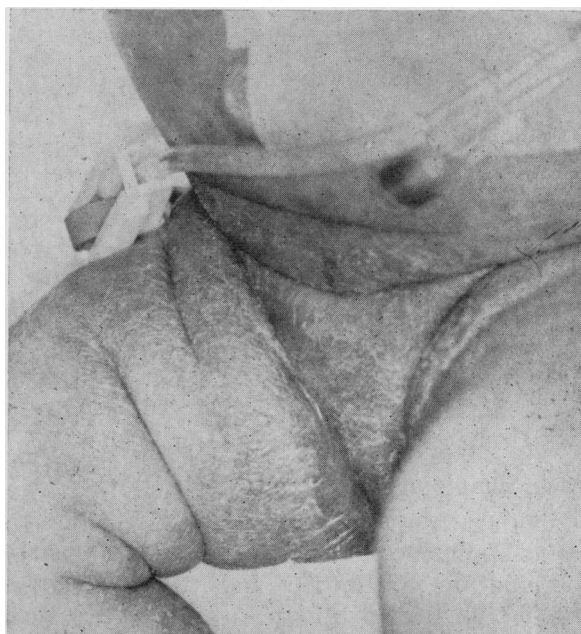


Fig. 1.—Diaper region 18 hours after admission showing crusting and maceration of the skin. The peritoneal catheter lies across the abdomen.

depressed and the tongue dry. The skin was lobster red with macerated intertriginous areas in the diaper region (Fig. 1).

The baby had been born at term; delivery had been normal and the neonatal period uncomplicated. A diaper rash developed during the third week of life, and the mother, on the advice of the local pharmacist, sprinkled boric acid powder over the

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