

SECRETION OF URINE AFTER CELIOTOMY.

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IN many operations upon the pelvic organs of women there is great danger of injuring the ureters. These structures may be included in the ligature or clamp, they may be wounded by the knife or scissors, or they may be kinked by traction on contiguous tissues, so that the flow of urine is impeded or altogether stopped. Such accidents are often, perhaps generally, not recognized at the time of the operation; but some hours or days afterwards the surgeon's attention is directed to the possibility of this accident by complete suppression of urine or by the marked diminution in the quantity.

As the proper treatment of such injuries to the ureter depends upon the early recognition of the lesions, I have kept careful measurements of the amount of urine passed during the first forty-eight and seventy-two hours in a series of 100 celiotomies for all causes, and, having found these statistics very useful for reference myself, I have presented them to the Academy of Surgery, hoping that they may also be of use to others. I do not think that the ureter was injured in any one of these cases. The patients all recovered easily, and have never shown any symptoms of ureteral obstruction or of any renal disturbance. In some of the cases, when the amount of urine passed was exceedingly small, the operation had been of such a character that injury to the ureters was impossible,—as in ventro-fixation of the uterus. In all of the cases in the table the kidneys seemed to be functionally normal before the operation. As the amount of urine secreted depends upon the food and drink of the person, it is important in connection with this table to mention the treatment of the patient in regard to this point.

The patient was generally operated on at 11 A.M. The last meal was given the night before. A small amount of water was given in case of thirst on the morning of the operation. Small increasing quantities of hot water were given first twenty-four hours after the operation; and food was first administered forty-eight hours after the operation. The women were also thoroughly purged with saline purgatives during the twenty-four hours preceding the operation.

It will be observed from the table that the minimum amount of urine, four ounces, passed during the first twenty-four hours, was in a case of unilateral oöphorectomy, the maximum amount, twenty-two ounces, being in a case of ventral hernia. The average amount for all the cases was for first twenty-four hours, 13.4; for second twenty-four hours, 14.6; and third twenty-four hours, 19.8.

HYSTERECTOMIES: INTRAPERITONEAL TREATMENT OF STUMP.

No.	Amputation through Cervix.	Amputation at Vaginal Junction.	Number of Ounces of Urine Passed.		
			1st Day.	2d Day.	3d Day.
1	..	I	20	13	24
2	..	I	13	15	23
3	I	..	13	19	25
4	I	..	18	17	20
5	I	..	17	12	14
6	..	I	11	12	17
7	..	I	13	16	28
8	..	I	14	18	20
9	I	..	12½	13½	13
10	I	..	17	17	17
11	..	I	9	16	17
12	..	I	14	13	14
13	I	..	14	16	22
14	..	I	6	21	..
15	I	..	9	15	..
16	I	..	16	18	..
17	I	..	14	22	..
18	I	..	16	14	..
19	I	..	15	22	..
20	..	I	10	13	..
21	I	..	10	11	..
22	I	..	21	13	..
23	I	..	14	11	..
24	I	..	13	15	..
25	I	..	15	20	..
26	I	..	15	12	..
27	I	..	13	10	..
28	..	I	14	12	..
29	I	..	11	17	..
30	I	..	17	20	..
31	I	..	18	12	..
32	I	..	17	12	..
33	I	..	13	12	..
34	I	..	17	8	..
35	I	..	10	14	..
36	..	I	18	14	..
37	I	..	14½	10	..
38	I	..	18	16	..
39	..	I	7	10	..
40	..	I	10	28	..
41	I	..	21	14	..
42	I	..	10	13½	..
43	I	..	16	14	..
44	I	..	12½	12	..
45	I	..	14	17	..
46	I	..	12	15	..
47	I	..	13½	15	..
48	I	..	15	18	..
Average per day			672	617	254
			13.9	14.9	19.5

OÖPHORECTOMIES.

No.	Unilateral.	Bilateral.	Number of Ounces of Urine Passed.		
			1st Day.	2d Day.	3d Day.
1	..	I	14	17	26
2	..	I	17	15	22
3	I	..	13	17	23
4	I	..	18	19	22
5	I	..	18	14	20
6	..	I	8	13	19
7	..	I	12	19	12
8	..	I	11	32	26
9	..	I	13	12	14
10	..	I	14	8	12
11	..	I	14	12	20
12	..	I	12	7	10
13	..	I	13	12	14
14	..	I	14	15	14
15	I	..	4	12	19
16	..	I	20½	17	21
17	I	..	16	14	23
18	..	I	14½	12	16
19	I	..	15½	14	14
20	I	..	14	11	28
21	..	I	9	6	..
22	..	I	15	16	..
23	I	..	14	15	..
24	..	I	11	16	..
25	..	I	18	25	..
26	..	I	27	20	..
27	..	I	14	10	..
28	I	..	9	20	..
29	I	..	10	16	..
30	..	I	16	20	..
31	..	I	19	25	..
32	..	I	12	14	..
33	..	I	7	10	..
34	..	I	17	13	..
35	I	..	12	10	..
36	I	..	14	10	..
37	I	..	13	13	..
38	..	I	14½	19	..
39	..	I	10	14	..
40	I	..	12½	12	..
41	..	I	13	17½	..
42	I	..	4½	7	..
43	..	I	9	9	..
44	I	..	22	16	..
45	..	I	8	25	..
46	..	I	10	16	..
47	I	..	14	15	..
48	..	I	18	15	..
49	..	I	7	12	..
50	I	..	6½	15	..
Average per day . . .			661½ 13.2	743½ 14.8	375 18.7

CELIOTOMIES WITHOUT REMOVAL OF STRUCTURES.

No.	Ventro-fixation.	Hernia.	Exploratory.	Number of Ounces of Urine Passed.		
				1st Day.	2d Day.	3d Day.
1	..	I	..	21	19	20
2	..	I	..	22	13	15
3	I	..	..	6	15	20
4	I	..	..	16	10	20
5	..	..	I	6	10	..
6	I	..	..	9½	8½	18
7	..	..	I	19	23	22
8	..	..	I	8½	21	..
9	..	..	I	13	15	26
10	..	..	I	10	16	27
11	..	..	I	14	10	..
12	I	..	..	10½	10	..
13	I	..	..	17	16	..
				5	2	6
Average per day				172½	186½	150
General average of all cases for first, } second, and third days }				13.2	14.3	21.4
Total number of cases, III.				13.4	14.6	19.8