Staff Meeting Bulletin
Hospitals of the » » »
University of Minnesota

Transurethral Resection

lume XIII Friday, December 12, 1941 Number 10

STAFF MEETING BULLETIN
HOSPITALS OF THE . . .
UNIVERSITY OF MINNESOTA

olume XIII | Friday, December 12, 1941 | Number 10

INDEX

Published for the General Staff Meeting each week during the school year, October to June, inclusive.

Financed by the Citizens Aid Society, Alumni and Friends.

William A. O'Brien, M.D.

LAST WEEK

Date: December 5, 1941

Place: Recreation Room
Powell Hall

Time: 12:15 to 1:00 P.M.

Program: "Arachnoiditis"
Alex Blumstein
A. P. Baker

Discussion
J. C. McKinley
A. B. Baker
Alex Blumstein

Present: 153

Gertrude Gunn,
Record Librarian

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II. ANNOUNCEMENTS

1. VACATION

There will be no meetings on the following dates (holidays): Friday, December 19; Friday, December 26; Friday, January 2. Meetings will be resumed Friday, January 9, at the same time and same place.

2. STAFF MEETING ASSIGNMENTS

For the winter quarter are as follows:

Jan. 9	Bacteriology	W. P. Larson
Jan. 16	Obstetrics and Gynecology	John L. McKelvey
Jan. 23	Surgery	O. H. Wangensteen
Jan. 30	Medicine	C. J. Watson
Feb. 6	Ophthalmology	Frank E. Burch
Feb. 13	Dermatology	H. E. Michelson
Feb. 20	Pediatrics	Irvine McQuarrie
Feb. 27	Orthopedic Surgery	Wallace H. Cole
Mar. 6	Neurosurgery	William T. Peyton
Mar. 13	Radiology	K. W. Stenstrom

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3. CENTER FOR CONTINUATION STUDY
WINTER QUARTER PROGRAM

Jan. 8-10.
Public Health Nursing
For county public health nurses and sanatorium district public health nurses.

Jan. 20-24.
Emergency Surgery
For practicing physicians who wish to keep abreast of recent advances in emergency surgery, with special reference to war experience.

Jan. 26-31.
Hospital Administration
For hospital administrators and assistant hospital administrators. The program will be based on difficulties experienced at the present time in hospital administration.

Feb. 9-11.
Review Course in Dietetics
For hospital dietitians and dietitians from inactive list who have retired because of marriage or other reason. Will emphasize fundamentals of nutrition, dietary applications in health and disease, institutional practices and nutrition education for lay persons and others.

Feb. 23-28.
Program to be announced

Mar. 2-7.
Otolaryngology
Specialty course for ophthalmologists and otolaryngologists.

Apr. 6-18.
Internal Medicine
Specialty course for internists for two weeks preceding meeting of the American College of Physicians. All 60 places have now been taken and a waiting list has been formed.

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I. TRANSURETHRAL RESECTION

C. D. Creevy
B. A. Smith, Jr.
G. F. Malin

It is agreed that one should stop from time to time to evaluate the status of his work. In doing this he may determine whether his results compare favorably with those accepted as good, and he may alter his course if they do not. With this purpose in mind, the transurethral resections of the prostate done between April, 1930 and November 1, 1941 have been analyzed.

This method of attack upon prostate obstruction was first suggested by Guthrie in 1834. In 1911 Young first applied the method; Caulk independently used the transurethral approach at about the same time. The method was popularized by Caulk and Theodore Davis. Contributions to technique and improvements in instruments have been made by Stern, McCarthy, Bumpus, Thompson, and Nesbit.

The status of transurethral resection is constantly changing with the aim of securing better results. In this country this method of attack upon vesical neck obstruction is most used in the Middle-West and South; it is applied in over 95% of prostatic operations in this hospital at the present time. In suprapubic and perineal prostatectomy enucleation of the prostate is performed suprapubically, or through the perineum. The advantages of transurethral resection over prostatectomy do not fall in the scope of this discussion.

During the period of time under consideration (April, 1930 to November, 1941 1,348 patients were operated upon transurethrally for symptoms of prostatism. (A small number of resections in women are not included). The average age of these patients was 68; 35% had complete retention and almost all of these had had a trial of catheterization varying from several days to several years before coming to the Clinic. The average residual urine of those still voiding measured 300 cc. Fifteen per cent had carcinoma of the prostate; 7% had vesical calculi; and about 25% had severe impairment of the renal function despite preliminary drainage with an inlying catheter or suprapubic tube.

Table I. Summary of Transurethral Resections
April 1930 to November 1941

Year	Number of Cases	Per Cent Repeated	Mortality	Tissue Removed	Hospital Stay
			Per Cent	Gm.	
1930	18	16	0.	3.3	29.0
1931	27	25	3.7	3.1	31.0
1932	18	38	11.1	4.5	23.0
1933	102	22	3.9	9.7	20.0
1934	103	17	2.9	18.4	17.0
1935	133	29	3.0	22.3	13.0
1936	160	28	4.3	26.6	14.9
1937	133	23	7.5	20.1	17.0
1938	174	14	4.0	25.7	12.6
1939	167	22	4.2	26.9	16.6
1940	157	22	5.1	36.1	17.2
1941(to Nov. 1)	157	22	5.8	38.5	17.3
Total	1,348	23.9	4.6	24.9	16.4

Table I summarizes the entire experience. The number of resections per year has remained rather stable for the last five years and it seems unlikely that many more patients will be accommodated per year because of the lack of hospital facilities. The number of males in the United States living past the age of 65 has doubled between 1911 and 1935; and the number of people living past the age of 65 has increased 65% since 1930; patients are now inclined to seek prostatic surgery without awaiting intolerable symptoms. This tremendous increase in the number of patients with prostatism has not been accompanied by any reallocation of beds in the hospital.

The percentage of repeat operations at the same hospital admission is high throughout the series. Day[1] and Wear[2] report 11% multiple stages whereas Wishard[3] states multiple resections are necessary in about one-fourth of his cases (carcinoma). The Mayo Clinic figures[4] are about 5.5%. Reasons for the high percentage in this Clinic probably fall into two separate classes; inexperience of some members of the staff, and the desire to approach prostatectomy in completeness.

In this latter consideration it is interesting to note the steady increase in amount of tissue removed per patient. This has been the trend elsewhere; the Mayo Clinic average for 1934[5] was 11.6 gm. per patient, for 1938[6] (eliminating bars) was 32.1 gm. per patient. We have encountered no report of a consecutive series averaging as high as our average for 1941, 38.5 gm. Alcock[7] found that two-thirds of the specimens removed in a large series of consecutive suprapubic prostatectomies weighed less than 30 gm. More than 3000 specimens enucleated at the Mayo Clinic averaged 44.1 gm. While the number of patients in our 1941 series (157) is not large, it would appear that prostatectomy is being approached.

The mortality rate in this series is somewhat high. Two factors enter into consideration; the type of patient and the fact that the technique of resection is being learned by some of the members of the staff. The type of patient will be discussed later. Of the nine deaths in 1941, four were due to coronary sclerosis or thrombosis (autopsies), one was due to unexplained pulmonary edema (autopsies), one was due to unexplained pulmonary edema (autopsy), one was due to bronchopneumonia, and three were due to pyelonephritis and uremia. It is interesting to note that the deaths of two patients in 1940 were due to olivuria from sulfathiazole.

The number of days of hospitalization is somewhat above the average reported but these figures include the period of preoperative study and of preliminary drainage. The average postoperative hospital stay from September 1, 1940 to November 1, 1941 was 13 days per patient The disposition of patients living at a distance is sometimes a problem.

The type of patient admitted on the Urological Service of this hospital has been mentioned. Whereas a number of urologists now state that their patients are much better risks than those seen five to ten years ago, the type of patient admitted here has not changed appreciably. It is stated in the literature that patients elsewhere now see the urologist at a considerably earlier stage than formerly because the fear of prostatic surgery has decreased considerably since the advent of transurethral resection. No longer do they wait for intolerable symptoms and impairment of renal function. If this is so, it is not apparent in the cases admitted to this hospital. To obtain admission, severe symptoms of vesical neck obstruction must be present. Facilities do not permit any "prophylactic resections" such as are advocated by some authors. Many patients who urgently need surgery have to be referred back to their physicians for continuation of ineffective conservative therapy because of the lack of beds. These patients frequently return after a period of time in so serious condition as to demand immediate admission; not a few deaths have resulted from prolonged and insufficiently frequent catheterization required either in the Outpatient Department or at home by inability to admit patients needing operation.

Table II. Comparison of Patients Admitted September 1, 1940 to November 1, 1941 With Patients Admitted April 1, 1930 to September 1, 1940

	Age	Percent Complete Retention	Residual Urine of Those Voiding	Percent Carcinoma	Percent with vesical calculi	Neurogenic vesical dysfunction	Impaired renal function despite drainage*
April 1, 1930 to Sept. 1, 1940	68	34	300 cc	15	7	2	25
Sept. 1, 1940 to Nov. 1, 1941	69.5	41.7	300 cc.	17.6	10	6.5	22 (Av. P.S.P. entire group 52%)

*P.S.P. less than 45% in two hours.

Table II compares the patients admitted during the last 14 months with those admitted from April 1, 1930 to Sept. 1, 1940. The recent patients are slightly older; more are in complete retention, but their renal function is slightly better. When one considers that the average phenolsulphonephthalein excretion averages 52% total in two hours (irrespective of fractional distribution), function is not too satisfactory. These figures represent the renal function after improvement by drainage.

Some additional data were gathered concerning the 204 patients who have been seen in the last 14 months. Vesical diverticula were present in 8½%. In none of these patients has it been necessary to remove the diverticulum although two patients have residual symptoms of vesical irritation which, if they persist, may warrant diverticulectomy. Thompson et al[8], and Hamm[9] have shown that most vesical diverticula will not cause symptoms following prostatic resection.

There were 27 patients with complete retention who were catheterized in the outpatient department for an average of 17 days each before admission to the hospital. This does not include any private patients, "emergencies," or patients who had suprapubic cystostomies or who catheterized themselves. "Emergencies" included patients with considerable bleeding, uremia, or pyelonephritis, and those in whom catheterization was difficult (and therefore dangerous because of trauma) or impossible.

Ten per cent of the patients in the last 14 months have had perineal urethrotomy performed at the time of resection. This is done either to accommodate a larger instrument (Nesbit[10]), making large resections easier, or to avoid trauma to a narrowed urethra and thus prevent stricture formation (Thompson[11], Nesbit[12]). Difficulty in closure of the urethrotomy was encountered in one patient, cerebrally inferior, who insisted upon inserting his finger into the wound daily to see how it was "coming along."

Epididymitis was recorded in the charts of 7½% of the patients. This incidence is higher than is generally appreciated in transurethral resection in contrast to prostatectomy. Epididymitis frequently appears after the patient has

urned home and the above incidence low. We have recently begun to do ectomy in the older, more feeble patients.

Five per cent of the last 204 patients had some degree of incontinence of urine at the time of their discharge from the hospital. All but three cases cleared up promptly. Two patients had partial incontinence for three months, and one patient has no control of urination when on his feet. The use of traction upon the Foley catheter to obtain hemostasis seems to be a large factor in the cases of difficulty in control.

Routine in This Service

It is our policy not to catheterize a patient who is thought to have over 300 cc. of residual urine and who has not been catheterized previously or recently unless a hospital bed is available. If we underestimate his residual and do catheterize him, he is admitted as an emergency. This precaution is taken to prevent the occurrence of overwhelming infection.

Upon admission the residual urine is measured, a culture is taken, and the renal function, blood, and urine are studied. Unless fever or impairment of renal function are present, or complications require treatment, resection is done as soon as convenient.

If renal function is impaired, catheter drainage is instituted until the function returns to a satisfactory degree or until it is apparent that improvement will take a long time, in which case a suprapubic cystostomy is performed; the patient is sent home to return in three months for resection. Thompson[13] and others have shown that patients with poor renal function may be operated upon with safety but it is safer to defer operation upon the prostate until the renal function has been stabilized. Prolonged catheter drainage is not feasible in this hospital because of the scarcity of beds, and the danger of injury to the urethra.

Spinal anesthesia is used for good risks. Pentothal sodium is employed in those with hypertension, cardiac disease, impaired renal function, and undue apprehension. This includes about half the cases.

A tight external meatus is never dilated but always cut. Any dilatation disappears within a few minutes and the tight meatus rides with the sheath, alternately compressing and stretching the urethra, sometimes with disastrous results.

The instrument is a modified Stern-McCarthy with a Nesbit handle. It can be manipulated with one hand.

The O'Connor sheath is used regularly and is regarded as indispensable, although susceptible of improvement. The mode of attack upon the gland itself is that advocated by Nesbit[10]. Resection is begun at 12 o½clock and is deepened until the circular fibers of the capsule are seen. This detaches the lateral lobes from one another and lets them fall backward and medially. Resection is then carried down between the right lateral lobe and the surgical capsule, exposing the circular fibers almost, but not quite to the verumontanum, until the lateral and median lobes are attached by a rather slender vertical pedicle. The same is then done on the left. Bleeding is controlled, and the pedunculated lateral and median lobes are excised last. The left index finger is then inserted in the rectum to push remnants into the lumen for resection with one hand and to verify the completeness of the resection by palpation.

A size 24 Foley bag is used for postoperative drainage. Water in the bag, and occasionally traction, are used to aid in hemostasis. Traction, if used, is removed as soon as active bleeding subsides and all but 10 cc. of water are removed from the bag 6-8 hours after the operation. Vigilance and detailed care are necessary postoperatively. 1500 cc. of fluid are given postoperatively paraorally, transfusions are used as indicated.

In the usual case the patient is out of bed on the first or second post-oper-

...ve day and the catheter is removed ... the third. The residual urine is ...ecked for two or three consecutive ...enings and the patient is discharged ... the sixth or seventh postoperative day. If a second resection is necessary, this is usually done five to seven days after the first stage.

The patient returns to the outpatient department in six weeks for check-up regarding symptoms and residual urine. The urine usually remains cloudy for six to twelve weeks.

Summary

The transurethral resections done upon 1,348 patients admitted between April 1, 1930 and November 1, 1941 are reported. More than one operation was performed in 23.9% of the patients. Mortality for the series was 4.67%. The average amount of tissue removed was 24.96 gm. per patient but the average per year has risen gradually and was 38.5 gm. per person in the first ten months of 1941. Epididymitis occurred in 7½% of the last 204 patients.

A brief resume' of the hospital routine for the average prostatic patient is given.

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J. Urol., 42:1088, (Dec.) '39.

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Transurethral Surgery in 1937 and 1938.
Proc. Staff. Meet. Mayo Cl., 14:657, (Oct. 18), '39.

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Proc. Staff Meet. Mayo Clinic, 10:220, (Apr. 3), '35.

6. Thompson, G. J.
Transurethral Surgery in 1937 and 1938.
Proc. Staff Meet. Mayo Clinic, 14:657, (Oct. 18), '39.

7. Alcock, N. G.
Prostatic Resection and Surgical Prostatectomy.
J.A.M.A., 101:1355, '33.

8. Thompson, G. J., Kermott, L. H., and Cabot, H.
The Management of Diverticulum of the Bladder.
S.G. & O., 70:115, (Jan.), '40.

9. Hamm, F. C.
Selection of Cases for Transurethral Resection.
Am.J.Surg., 43:73, (Jan.), '39.

10. Nesbit, R. M.
Modifications of Stern McCarthy Resectoscope Permitting Third Dimensional Perception.
J. Urol., 41:646, '39.

11. Thompson, G. J.
Perineal Prostatic Resection.
Proc. Staff Meet. Mayo Clinic, 12:360, (June 9), '37.

12. Nesbit, R. M.
Advantages of Perineal Urethrotomy in Prostatic Resection.
South. Surg., 7:501, (Dec.), '38.

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Transurethral Surgery in 1935.
Proc. Staff Meet. Mayo Clinic, 11:360, (June 3), '36.

I. GOSSIP

I turned over my gossip column to the children who get out the "Eustis Big Little News." The December issue contains among other items the following:

"My Portrait

My name is Greta. I have red hair. I have two braids tied with blue ribbons. I wear blue ones because they look better with my hair. That's what mother says. I play a lot. I like playing house best, because it is more fun. I have two dolls-Judy and Donna. They play house, too. We play quietly. I talk out loud to my dolls, but I guess they don't hear.

Greta Grinaker, 7
Oslo, Minnesota.

School

I like school sometimes. I like arithmetic best because it is the easiest for me. During recess and noon hour we have fun playing Kittenball, Volleyball, and Basketball. Volleyball is best because you get more exercise.

Fidelis Regenscheid,11
Randolph, Minnesota.

My Ambition

I want to be a farmer when I grow up. I've milked four cows and I have gone after them about a hundred times. I like to drive horses. I know how to steer them, too. I might rent a farm near South Dakota. I have relatives there. I haven't been there, but Donald, my brother, has. You have to get up early in the morning to get things lined up, but I like to get up early anyway.

James Krier, 11
Morton, Minnesota

My Dog

I have a dog named Rex. He is a sheperd dog. We did have two dogs, but we had to shoot one, because he got kind of spells. Sometimes you can throw a ball and the sheperd won't give it back and we have to run after it. We have a hard time to get the ball. Sometimes we run so far that we get tired.

Walter Engen, 8
Clearbrook, Minnesota

Window Shopping

I like to go down town and look in all the windows. We don't go very often, but one Saturday this year we went to see the Christmas decorations. I liked the bells in the street, they looked as if they were ringing. I saw Mr. Bug of the story which is called "Mr. Bug Goes to Town." That was the first time I ever heard of Mr. Bug and I had not expected to meet a bug and surely not one that could talk. I don't suppose I'll ever see him again.

We went down the street and found Mrs. Santa Claus sitting in a rocker, and "for Pete Sakes," she was knitting.

We saw lots of other things, too, but I enjoyed Mr. Bug the most.

Beverly Bratz, 8
Minneapolis, Minnesota

A Trip on the Bus

Whenever I come to Minneapolis from Shovel Lake, which is my home, I come on the bus. I had an exciting trip this time watching the men repair the road. There were a lot of tractors and trucks. We had to stop several times to pick up passengers. I talked to several of them. They were going to Minneapolis, too. There were a lot of soldiers, but I did not get to talk to any of them. I saw two airplanes landing. I wished that I had been on one. I wonder what it would feel like to be in a plane. My dad says he likes it. I think it would be fun to look down upon the city from way up high.

Marvin Nelson, 11
Shovel Lake, Minnesota

Riding Horseback

I have just been thinking about my favorite interests. I like horseback riding best because it is a lot of fun. My dad has a farm and has two riding horses, Bill and Queen. I ride Bill the most as he doesn't buck the way Queen does and usually gallops in a sort of a swing. Sometimes I go to a neighbor's and ride with Elroy, a classmate. We just go riding mostly, but then again, we race to see who can go the fastest. Someone asked if I am going to own a horse when I grow up. I think so.

Bruce Burchill, 11
Spicer, Minnesota."