TABLE INDICATING THE CASES OF CARCINOMA OF THE UMBILICUS SECONDARY TO THE INTESTINES.*

<table>
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<tr>
<th>REPORTED BY</th>
<th>AGE</th>
<th>LOCATION OF PRIMARY TUMOR</th>
<th>CONDITION OF UMBILICAL REGION</th>
<th>REMARKS</th>
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<tr>
<td>Lage: Schmidts Jahr-</td>
<td>53</td>
<td>Transverse colon</td>
<td>Reddish nodular tumor, slightly movable and ulcerated</td>
<td>Tumor of umbilicus developed during course of clinically diagnosed carcinoma of transverse colon. Autopsy proved similarity of umbilical and primary growth.</td>
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<td>buch, 1847, iv, 296</td>
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<tr>
<td>Lebert: Bull, Soc. Anat.</td>
<td>37</td>
<td>Transverse colon</td>
<td>Discharging sinus, Induration extending for several inches in left rectus muscle.</td>
<td>Occasional pain at umbilicus for several months. Swelling at umbilicus which was opened and it healed, then it burst and kept on discharging.</td>
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<td>de Paris (Reported by</td>
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<td>Chuquet), Du Carcinome</td>
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<td>generalisé de peritone.</td>
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<td>Paris, 1879, No. 543</td>
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<td>1886</td>
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<td>Barker: Lancet, London,</td>
<td>Male</td>
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<td>Pernice: Die Nabel Ge-</td>
<td>Female</td>
<td>Large intestine</td>
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<td>schwulste, Halle, 1892</td>
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<tr>
<td>Wohl: Present issue</td>
<td>Female</td>
<td>Large bowel</td>
<td>Protruding immovable mass at umbilicus</td>
<td>A lump in the umbilical region developed for last 6 months. No pain. Patient died of peritonitis.</td>
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* Most of the data for this table was taken from the admirable work of Cullen, "The Umbilicus and Its Diseases," Saunders Co., 1916.

Clinical Department.

RADION TREATMENT OF BLADDER AND PROSTATIC CARCINOMA.*

BY B. S. BARRINGER, M.D., NEW YORK CITY.

[From the Memorial Hospital]

This report is based upon twenty-five cases of carcinoma of the bladder and thirty cases of carcinoma of the prostate treated by radium since October, 1915.

BLADDER CARCINOMA.

In making a diagnosis of carcinoma of the bladder in these cases more stress has been placed upon the clinical findings than upon the microscopic examination. Such clinical findings making for malignancy are, in order of their importance:

1. Induration revealed by touch (rectal or vaginal) or by cystoscopy. When a tumor feels hard, one is much more certain of one's findings than when one sees (or thinks one sees), by means of the cystoscope, an induration of the base of the tumor. In the latter case the personal equation enters much more than in the former.

2. Slough. Only malignant tumors slough. Such slough appears as grayish or whitish areas in the tumor mass. Here again one may err, and I have often been surprised how one's idea of a bladder tumor changes with subsequent cystoscopies. In difficult cases a number of cystoscopies may be necessary accurately to determine both the extent and the appearance of the tumor.

3. Reaction to fulguration. Keyes and Geraghty have called attention to this feature. Benign tumors are quickly burned off by fulguration. Malignant tumors react stubbornly or not at all.

4. Age. The older the patient the more likelihood of carcinoma.

5. Multiplicity and size of tumor. So-called benign papillomata are more apt to be multiple than carcinomata. The size of tumor rather speaks for difficulties in its removal than for malignancy.

The microscopic examination in twelve of the twenty-five cases has shown carcinoma. According to the microscopic examination, these twelve are classified either as papillary or as diffuse carcinoma.

APPLICATION OF RADIIUM TO BLADDER CARCINOMA.

The technic of the application of the radium is: two capsules of screened radium (0.6 mm. of silver and 1.5 mm. of rubber) from 50 to 100 mc. are placed in the bladder through the sheath of the cystoscope and allowed to remain there 6 to 8 hours. As 90% of bladder tumors are on the bladder base, the radium so inserted is in close contact with the tumor. If the carcinoma is on the vault or lateral walls, the patient lies on his abdomen or on one or the other side. After the treatment the radium is removed per urethra by a linen thread attached to the capsules.

The initial pain experienced is only that of the cystoscopy. The after-burn varies from none at all to more or less severe pain, beginning a few days after treatment and lasting from one day to several weeks.

In extensive carcinoma involving the bladder sphincter, irradiation may very much increase both the pain and the urinary frequency. It is to be used in these cases with caution.

EFFECT OF RADIIUM ON BLADDER TUMORS.

In a large majority of the cases in which I have applied radium to bladder tumors, the hematuria has stopped two or three days after the irradiation. There is a suggestion in this that the primary effect of the radium is upon the blood vessels. If this is so it would in a measure explain why papillomata of the bladder, rich in blood vessels, react somewhat more slowly to radium than true carcinomatous, which have poor and imperfectly developed blood vessels.

In some cases the rapidity of the action of radium is astonishing. Case 1 was irradiated January 19, and on February 4 (sixteen days later) cystoscopy showed that an extensive carcinoma had entirely disappeared.

Radium burns of normal portions of the bladder have occurred only in those cases in which the carcinoma was around the bladder neck, and in which the radium was pulled into the urethra and kept there for a long time. I have had two such cases; the burns last a long time, and cause considerable irritation. Division of the radium dose into two or more tubes, using somewhat smaller quantities, change in the position of the patient during application, and a fairly long interval between irradiations—six weeks or more—ought to prevent such burns.

SUMMARY OF CASES.

Two of the 25 cases of carcinoma of the bladder treated would have been considered good operative risks; the other 23 cases, because of the extent of the tumors, were all impossible operative risks. In 4 of the 25 cases (3 confirmed microscopically as carcinoma) radium has locally removed the growth. One of these has been cystoscopically cured for 10½ months, one for 5 months, and one recently. One has what is probably a slight local recurrence, although pathological examination of a piece removed does not confirm this view. These four cases are of sufficient interest to report in some detail.

CASE 1. C. A. G., aged 60. Signs of malignancy: large tumor, vaginal induration not determined; sloughy in part. Microscopic diagnosis of carcinoma; fulgurated twice, and no headway.

History. Chief complaint, urinary frequency for the past year,—night 3 to 4 times, day every 3 to 4 hours, and pain following urination. She had been passing bloody urine for the past four months. A number of months before I saw her she was cystoscoped, and a diagnosis made of inoperable carcinoma. Cystoscopy showed large red carcinoma with necrotic patches on left side of her bladder, obscuring her left ureteral orifice. Tumor was probably as large as a fifty-cent piece. Specimen removed showed (Dr. Ewing): "The section is of a small mass of tumor tissue 2 mm. in diameter. It shows the structure of a small alveolar carcinoma, much inflamed, with dilated blood vessels. The cells are clear, irregular in size, with large hyperchromatic nuclei, and arranged in small groups. The stroma is scanty."

January 19, 1916, 100 mc. of screened radium in her bladder for eight hours.

February 4, she reported that she had some frequency and severe bladder pain for two days; then everything normal. Cystoscopy (with Drs. Keyes and Jeck) showed that the tumor had gone; the area was covered with normal mucous membrane, and the ureter visible. December 19 she had a stellate, white scar over place occupied by tumor. No tumor visible. Reduplication of ureter.

CASE 2. C. T., aged 59. Signs of malignancy: tumor as large as a ten-cent piece; no induration; ulcerated tumor. Microscopic diagnosis of carcinoma; fulgurated four times in six months and recurred.

History. Eight months before seen had occasional attacks of painless hematuria. He was cystoscoped, and a papilloma near the left ureter was seen. This was burned with high frequency four times in about six months, but had always recurred. Dr. Keyes saw it in January, 1916, when it was an ulcerated area with carcinomatous-looking lumps. A piece removed showed diffuse carcinoma (Dr. Ewing).

"The section is from a mass of tumor tissue 5 mm. in diameter. It presents a small alveolar and diffuse carcinomatous structure. The cells are extremely atypical, and some are of very large size, with very hyperchromatic nuclei. The outer portions are hydropic, the central areas show fibrosis, and here the tumor cells run in narrow rows or small groups."

February 11, 1916, 214 mc. of screened radium for seven hours.

May 2, cystoscopy showed normal mucous mem-
brano over the space occupied by the carcinoma. He had had 7 or 8 erections since treatment, while he had been practically impotent for 10 years before.

July, he had gained 10 pounds. Cystoscopy (Dr. Ballenger) negative.

On November 8, Dr. Ballenger reports "has passed no more blood. Cystoscopy about a month ago showed only a reddened place where the growth was. There has been a rather persistent cystitis."

Case 3. Mrs. E. H. S., aged 54. Signs of malignancy: extensive tumor; vaginal induration as large as a silver dollar, sloughy in part. Microscopical diagnosis of papilloma; no fulguration.

History. Chief complaint, hematuria for the past year, and urinary frequency at night—5 to 20 times. Cystoscopy showed grape-like, red, partly sloughy tumor around the bladder neck. Vaginally there was an indurated area of the base of the bladder, nearly as large as a silver dollar. Specimen removed was reported as being papilloma (Dr. Ewing). Because of the induration, and because of the slough, I considered this carcinoma.

July 6, 116 mc. of radium in bladder neck for 6 hours. Reported one month later that she had a little discomfort in passing urine for a few days. She had gained 15 pounds in weight; got up but twice at night to urinate.

August 29, she still had tumor around bladder neck. 100 mc. of radium in bladder neck for 8 hours. She had no hematuria since the first radium.

October 30, 1916, reports she had no pain after the radium. Cystoscopy showed the tumor to be gone. She had gained 18 pounds in all. No induration of bladder base. Had no night urinary frequency.

Case 4. J. A. H., aged 62. Signs of malignancy: tumor as large as a quarter; induration shown by cystoscopy; sloughy. Microscopical diagnosis of carcinoma; fulgurated twice, and tumor grown 2 or 3 times its original size.

History. Had two attacks of total hematuria, one month and eight days before seen. No night frequency; no loss of weight. Dr. Keyes saw by cystoscopy a red, lobulated, rather flat carcinoma above right ureter, burned it with high frequency and advised radium. The patient went to another physician, who fulgurated the tumor and decided against both operation and radium. About three months later he returned, when (with Dr. Keyes) a flat, sloughy in part, carcinoma was shown, two or three times the original size, extending from bladder neck to a point 2 cm. above right ureter. It had raised, thick, indurated edges. A specimen removed showed (Dr. Ewing) carcinoma. Two tubes of screened radium (one 30 and one 59 mc.) were left in his bladder 6 hours.

Two months later he returned, when there was seen redness of right side of his bladder, a small ulcer back of ureter (well away from where the tumor was), probably due to radium burn. No other lesion was seen.

Two months later there was a linear ulcer 1 cm. long, surrounded by puckered red mucosa on the anterior end of his original tumor. It looked like a recurrence, although a piece removed shows no carcinoma. Treated again by radium.

From results in these four cases it appears that radium can do as much as surgery for cases of bladder carcinoma without subjecting the patient to the danger and discomfort of a major operation. While these cases are entirely too few upon which to base any permanent deductions, I believe at the present time that the local removal of bladder carcinoma by radium depends upon two factors:

First, to get cases early enough, and, second, actually to apply the radium to the carcinoma.

Of the twenty-one remaining cases, eight have died, two as the result of transplantation of the ureters. Two are improving; one of these is a hopeless case, and one I have hopes of curing. Four I have not heard from since the irradiation, and the rest are too recently treated to report on

These statistics are not brilliant, but one must remember that these twenty-one cases were all advanced carcinoma, and that all but one or two, in which a thought of cystectomy might have been entertained, were totally inoperable. A certain number of these hopeless cases were benefited by the irradiation. Some have gained weight, and in nearly all the hematuria has stopped. One patient, known to have lymphatic involvement beyond the bladder, came to me with a suprapubic opening (the result of an operation) as large as my index finger. Two months after one radium treatment, he had gained ten pounds in weight, his bleeding had entirely stopped, and his suprapubic wound closed; this notwithstanding the fact that his entire bladder was a mass of carcinoma.

INDICATIONS FOR THE USE OF RADIUM.

This brings us to the question, in what cases are we to use radium? I believe first that radium should be tried in all those cases in which we have reason to think the carcinoma is confined to the bladder, to see what the radium will do,—much as fulguration has been used as a diagnostic test of carcinoma. The second indication is hemorrhage from a bladder carcinoma. One dose of radium seems pretty consistently to check this symptom.

CARCINOMA OF THE PROSTATE.

From thirty cases of carcinoma of the prostate treated by radium since October, 1915, the following conclusions have been derived:

1. Radium treatment has caused with surprising regularity the reduction or disappearance of carcinomatous nodules of the prostate. Striking results have been obtained in both early and advanced cases. The early cases, those in which the carcinoma is fairly well confined to the prostate, and in which there is little or no perivascular infiltration, show shrinkage of the carcinoma. Very few advanced cases, those in which there is an enormous prostate, and in which the vesicles are hard and indurated, show any improvement.
2. The reduction which occurs in carcinoma, the cases, months, improves. It is evident that one month or two after the reduction.

3. The symptoms in some cases in which the carcinoma has been reduced show striking improvement. This symptomatic improvement is shown in increased weight and strength, decrease in frequency of urination, and return of or improvement in erections.

One patient of 74 years, on whom a suprapubic exploration showed carcinoma of the prostate and who was treated but once with radium, gained eight pounds and reported five months later that he was "doing a full day's work on steam boilers." He narrated, on questioning, that a full day's work was from 5 a.m. to 11 p.m.

Another who had no erections for 1½ years had a permanent return of this function. This patient, who had been invalided, gained 18 pounds. He started in the mild work of shoveling snow and lifting ash cans, and now is doing a full day's work in a machine shop 16 months after his first treatment.

4. The technic of the radium application is as follows:

The emanations are placed in the end of a needle (gold or steel) extending from the tip 1½ inches along the sheath. These needles are 4 to 6 inches long, and are inserted through the perineum into the prostate or further into the vesicles. The perineum is anesthetized with 0.5% novocain and epinephrin, which makes the insertion practically painless. The needle is left in one lobe for six hours, and then changed to the other lobe. A finger in the rectum is used to guide the needle. Little or no pain is felt during the sojourn of the needle (12 hours), and the patient can either urinate or "catherize." This means at most only twenty-four hours in the hospital; 30 me. of radium are used in the end of the needle. Radium used in this way is practically unscreened, and the maximum effect of the radium takes place directly in the center of the carcinomatous nodule. The patient usually has pain in the prostate and urinary frequency beginning about 3 days after irradiation, and lasting a number of days to some weeks. In some cases in which I have used large doses the reaction has been severe. One has to be extremely careful about second or subsequent irradiations; the tissue seems to be much more sensitive to radium after the initial dose. Nearly all of my patients have been irradiated but once in two or three months, and no second treatment is given until the effect of the radium has entirely passed over.

5. The primary effect of the radium may be to increase the amount of residual urine (if there be any). The ultimate effect of the radium application on residual urine is probably nil, the amount neither increasing nor decreasing. Hence those patients who have chronic retention of urine require either the catheter or operation in addition to irradiation. It would seem wiser not to operate until the carcinomatous prostate had been thoroughly irradiated, and it would seem better not to operate at all if the patient can be trained to the use of the catheter.

6. No sloughs have resulted from the radium needles.

7. Radium apparently has a selective action on carcinoma. I conclude this from descriptions by Dr. James Ewing of carcinomatous examined after radium treatment and from my own experience. I have used radium on an hypertrophied prostate with absolutely no effect, neither burning nor shrinkage occurring, yet the same amount of radium will markedly reduce a carcinomatous lobe. I have had a similar experience in a case of chronic contractive fibrosis of the corpora cavernosa.

8. The pathological examination of prostates removed after irradiation is of interest. In one case in which the prostate was removed because of urinary retention, a moderate dose of radium was given five months before the prosta-tectomy. The prostate had been considerably reduced in size following the radium treatment. At operation the prostate shelled out like a non-malignant adenoma. Dr. Ewing reported as follows:

"Material consists of several lobulated opaque portions of prostate, making a mass as large as a hen's egg. Much of this has the honey-comb appearance of chronic prostatitis. But some areas are very firm and solid. Two such areas, size of a bean, were sectioned. The main tissue of the gland shows lesions of chronic prostatitis with dilated glands and feebly epithelial proliferation. The solid areas show fibers of muscle tissue separated by rows of small epithelial cells with hyperchromatic nuclei. The appearance is that of a diffuse carcinoma in a state of fibrosis. One area of adenocarcinoma is found in the center of a fibrosed area. There is no necrosis.

"In view of the history the diagnosis may be made of carcinoma, diffuse and adenocarcinoma, and undergoing atrophy and fibrosis from radium."

In another patient I gave one large dose of radium in August, 1916; the patient had a severe reaction. Five months later, because of retention, I took out as much of the prostate as I could. The pathological examination is as follows: (Dr. Ewing) (Plates 1 and 2.)

"Portions of material, including a segment of urethra, received. They show subacute inflammation, hemorrhage and regressing changes in an alveolar carcinoma. The tumor alveoli are represented by groups of 5 to 10 epithelial cells with homogenous nuclei, clear cytoplasm, lying in dense fibromuscular tissue. Traces of these alveoli disappear in the exudate of round cells in many places."

It will be necessary to examine many more prostates which have been treated by radium before one can be sure that the above changes are due to the radium. The fact that carcinomatous lumps regress after radium treat-
ment is "corroborative evidence" that radium causes a fibrosis in the carcinoma.

9. As far as I have observed clinically all the cases treated are of about the same degree of malignancy. There is a class of cases of prostatic carcinoma, however, of much more marked malignancy. In these the primary focus in the prostate is often overlooked, and the patient comes to be treated for a secondary focus. There have been two such cases at the Memorial Hospital, in both of which there was a large carcinoma of the neck, and it was only by examination in one case and necropsy in the other that the primary focus in the prostate was found. Such cases are apparently very malignant, and it is a question if we ever get them early enough for any treatment to count.

10. Very large carcinomata with cachexia and loss of weight are beyond radium or any other treatment.

11. Only time will tell us whether any of our patients have been cured. At the present time we can state that in fairly early cases a marked regression of the prostatic lumps, and in some cases a complete disappearance of these, has taken place. Accompanying this retrogression, the patients have improved in weight and bodily strength. Radium has done more for these cases than operation or any other known therapy.

SUMMARY OF PROSTATIC CASES.

Thirty cases of prostatic carcinoma have been treated.

Advanced Cases. Nineteen of these thirty cases were advanced, having either very large prostates or marked perivesicular involvement, or both. In four cases the carcinoma had directly invaded the bladder. In eleven of these nineteen a microscopical diagnosis of carcinoma has been made. Four of these nineteen have died. One is going rapidly down hill, one has been lost track of, but six months after a single treatment was reported as up and working. In three cases I have done a partial prostatectomy for retention after treating the carcinoma with radium. Two cases are distinctly improved. The remaining cases have been too recently treated to report, as it takes from four to six months to get any results from irradiation. The two improved cases are worth reporting:

History. Had a roughly pedunculated carcinoma removed from neck of bladder by Dr. Keyes. This grew from the prostate, no removal of which was attempted. The pathological examination (by Dr. Ewing) was as follows:

"The section is from a piece of tumor tissue 0.5 cm. in diameter. It shows a solid carcinoma composed of small and large groups of compact tumor cells with a very little stroma. The cells are of moderate size, polyhedral, with hyperchromatic nuclei. The vessels are scanty. There is no necrosis. It is impossible to state from the section whether there is any infiltration of the bladder wall. In structure the tumor is that of a fully developed carcinoma."

June 6, the right lobe of the prostate, which had a hard ridge, was treated with 93 mc. of radium for six hours.

September 12, patient did not have to rise at night; he went from 4 to 6 hours without urinating; he had gained 15 pounds, and the lump in the right lobe was about gone. There was infiltration running up into the right vesicle. (Examination with Drs. Keyes and Jeck.)

March 1, he still showed some induration of the right vesicle. He was doing a full day's work and has lost no weight.

Case 10. J. B. B., aged 75.

History. Night frequency of urination, two to six times, for some months. Residual urine, 2 to 3 ounces. No loss of weight. Prostatic examination (Dr. Keyes) showed an extensive lumpy carcinoma running into both vesicles, a little higher on the right side.

June 6, 99 mc. of radium in his right lobe for 6½ hours and left lobe for 5 hours.

October 9, patient had a very severe reaction with much pain, lasting from 4 to 6 weeks. During this time he lost 12 pounds. Examination of the prostate (with Dr. Keyes) shows that much of the prostatic carcinoma is gone, periprostatic region was still carcinomatous, as is also the region of the vesicles. He looked in excellent shape and had regained his weight. I treated the remaining carcinoma with radium, not with any hope of curing him, but with the hope of stopping the growth for a time. In February he was reported as sojourn in Florida.

Early Cases. Eleven of the thirty cases were, roughly speaking, early carcinoma. This does not mean that they were suitable for operation. As a matter of fact, because of the initial success of radium treatment I believe that no pa-
tient with prostatic carcinoma should be operated upon. With one of the eleven cases there was a question of the diagnosis. One of the eleven died four months after prostatectomy from the effects of the operation and old age (82 years). Six of the eleven cases are distinctly better, and the remaining four cases have been too recently treated to report upon. The histories of these six are briefly:

**Case 1. J. C. D., aged 59.**

**History.** Chief complaint, loss of flesh and strength; night urinary frequency 3 to 4 times for 4 months. Pain in right thigh for 5 years. Prostatic examination (with Dr. Keyes) showed a large, hard, fixed, irregular prostate, each lobe about as large as half an English walnut; left lobe more prominent than right; little extension toward seminal vesicles. Radium treatment October 20, 1915; 50 mc. in left lobe 6 hours, and in right lobe a similar time.

November 17, 1915, reported that he had considerable burning after the treatment, and that he had a number of erections since (erections had been lost for 1½ years). Prostate felt the same.

January 14, 1916, he had gained about 10 pounds; felt fine. (Examination of prostate with Dr. Keyes.) There was a marked shrinkage of the carcinoma. Dr. Keyes said: "It is more the slight irregularity of the prostate that suggests carcinoma than anything else." I gave him 60 mc. of radium for 4 hours in both lobes.

January 31, 1916, he had gained 6 pounds more, making 16 in all, and had no pain from the radium; arose once at night to urinate.

February 18, 1916, not up at all at night to urinate; gained 2 more pounds in weight. Slight induration at base of the prostate, 38 mc. of radium in right lobe for 8½ hours.

April 4, 1916, 75 mc. in right lobe for 4 hours, then in left lobe 4 hours.

June 30, he had been working in the machine shop for 6 weeks, and had lost a couple of pounds. Had some burn after the radium, which has caused increase in night urination (3 to 4 times). In the center of the left lobe there was a small fairly hard lump, and a slight hard ridge in the right lobe.

November 17, weight the same. Working (sometimes 15 hours a day). A ridge in either lobe. I could not say whether or not it was carcinomatous.

February 12, examination of the prostate the same. Fine condition. Doing a full day's work. Again treated with radium.

**Case 3. J. J. C., aged 71.** Chief complaint is urinary frequency, chiefly at night (3 to 4 times) for the past 6 months, then acute retention. He had lost about 8 pounds in weight. Prostatic examination showed a flat, hard, irregular prostate, with prominent nodules at prostatic-vesicular junction, extending into the vesicles. (Examination with Dr. Keyes.) Several other physicians examined and thought the diagnosis was not positive, but that it was very suspicious of carcinoma. 46 mc. of radium in right lobe for 7 hours, and in left lobe for 5½ hours (February 8, 1916).

March 17, 1916, reported not up at all at night to urinate, doing a full day's work and no pain at all after the radium.

May 23, the radium was repeated, after which he had pain and frequency of urination for a few days.

October 16 (examination with Dr. Keyes). Lost 2 or 3 pounds; is the picture of health. He had never been catheterized since beginning the radium treatment. Marrow fat pea at the right prostatic-vesiculo-junction, nothing in vesicle or along upper border of prostate. There was a ridge along lateral edge of right lobe, not extending beyond the prostate; nothing in vesicles.

January 15, he had lumps at either upper margin of his prostate. If anything, they had slightly increased in size. He was doing a full day's work, and was in excellent condition. Again treated with radium, 62 mc. in right lobe 6 hours, and 6 hours in left lobe.

**Case 6. W. C., aged 58.** Chief complaint slight increase in frequency of urination (once at night). (Examination of prostate with Drs. Keyes, MacKenzie and Jeck.) Left lobe of prostate soft; right lobe hard, nodular, not large. Nothing in vesicles.

May 23, 50 mc. of radium in right lobe 11½ hours.

August 29, had pain after the radium, his symptoms were the same, and the prostatic carcinoma feels the same. 100 mc. of radium 4 hours in right lobe.

November 8, carcinomatous lump feels the same. He had some hematuria for 2 days. There was a slight irregularity of the lateral lobes of his prostate as seen by cystoscope. 102 mc. of radium in his urethra for 6 hours.

January 26, not up at all at night. Still working a full day. Prostate felt the same as when first examined. 64 mc. in right lobe 6 hours, and left lobe 6 hours.

February 13, the lump in his right lobe was apparently gone. He had considerable burning after his radium, and he was now getting over the effect of this.

**Case 15. A. S., aged 68.** This patient was operated upon by Dr. Keyes in the spring of 1916 for hypertrophied prostate. Pathological examination of the removed prostate showed no malignancy. He came back to Bellevue in September with a hernia, upon which I operated, at the same time taking out a small prostatic lobe in the floor of his urethra. This proved to be carcinoma on pathological examination. We weighed 168 pounds before the operation. Rectal examination revealed a diffuse infiltration of the bladder base, with some slight lumps. (Examination with Dr. Keyes.)

October 17, 57 mc. of radium was inserted for 6 hours in the middle of his prostate.

December 4, had gained 20 pounds, erections had improved; he had a solid, hard lump at the apex (left) of his prostate; all the rest felt pretty soft.

January 16, 65 mc. of radium in left lobe 6 hours, and in right lobe 6 hours.

February 19 (examination with Dr. Keyes): His prostate felt irregular, but there was nothing absolutely characteristic of carcinoma. He is a veteran, and had offered his services to his country in the event of war. I also learned that he wishes to get married.

**Case 17. H. C. A., aged 62.** Chief complaints are urgency of urination, sometimes bleeding, and for the past year nocturnal frequency. Now he
arises four times at night. His residual was one ounce, and his prostate was small, irregular and stony hard.

September 25, 50 mc. of radium in right lobe 4 hours, and in left lobe 4 hours.

January 31, he reported that he had considerable burning after the irradiation. He was now urinating 3 times at night, and by day every 2½ hours. He had ½ ounce residual urine. Prostatic examination (with Dr. Keyes) showed a little, hard lump beginning in the left center, and going to left lobe. Right lobe possibly a little irregular. A decided change from the first examination.

March 1, 50 mc. in right and 50 in left lobes for 6 hours.

Society Report.

NEW ENGLAND BRANCH OF THE AMERICAN UROLOGICAL ASSOCIATION. MEETING IN BOSTON, MARCH 13, 1917.

I. PRESENTATION OF SPECIMENS, INSTRUMENTS, ETC., AND REPORT OF CASES.

Dr. Keeffe: I wish to report a case of a woman about 52 years of age upon whom I did a hysterectomy for fibrosis six years ago. She presented herself stating that she had some trouble about the vulva and upon examination there was a mass there about as large in the first joint of your thumb. It was mahogany in color. She said she had had some frequency of micturition. I thought possibly there was some mistake about it, and it might have been a polyp growing from the cervical canal, with a long pedicle, which might have protruded recently at the vulva.

The day that she was etherized, as the assistant was about to catheterize, he said he did not find any urethra there. So then I examined and found that this had no connection whatever with the cervix. I could feel the cervix absolutely normal. On the under surface of this mass there was an opening and I was able to pass a catheter into the bladder. That was the opening of the urethra. It proved to be a case of eversion of the urethra. I was unable to reduce it by pushing the mucous membrane forward into the bladder. It was so dilated that I could pass my index finger into the bladder. I thought possibly there was a stone, but there was no stone there.

I wondered how to retain it, as I had never seen a case of that sort before. I finally thought of laceration through the sphincter ani muscle, so I made an incision on the under surface of the meatus and then went in with a tenaculum. I drew the muscle forward on either side and placed two sutures which pulled that circular muscle together more than it would be normally. Then I passed another catgut suture about the urethra. I passed it through the incision that I had made up to the right side, coming out above the meatus and then going through the same opening again, passed it on the left side and down. I introduced a good-sized probe and then tied my suture about that. Then I tied the two sutures that I had on the muscle and put about three superficial sutures in the mucous membrane.

This patient was in my office yesterday and she has had complete retention of the urine since we operated. It seems like a normal meatus and she has no difficulty at the present time.

Dr. Codman: I recently had a patient with a large abdominal tumor. She was a woman about 40 years old. The tumor extended from the epigastric region left of the median line downwards into the pelvis. You could feel it through the back. It had developed since last November, without pain or any other symptoms. She had a certain amount of what she called a crowding feeling after eating; but that was only what would take place mechanically from such a large tumor. She had had amenorrhea for a year and a half.

Besides the tumor she had various anatomical peculiarities which were interesting. She had a partial hermaphroditism, with a well formed, small penis and breasts that were shrunken and almost like male breasts, with hair about the nipples and median line of chest, and also more or less beard. When she was shaved and you would see her dressed for the street, she had no masculine appearance at all, but was rather nice looking. Her elder sister told me that when the patient was a girl she had been rather masculine in her dress, tomboyish and very muscular and strong.

I asked Dr. Chute to see her in consultation. There was no abnormality of urine in any way, and I thought the tumor was probably renal. It was a question whether it was cystic or solid. Dr. Chute thought it was a hypernephroma. I operated, and if I had known enough I could have made a diagnosis before operation. I have spoken to a good many surgeons about the case since, and asked them to guess what it was. I think it would be interesting to ask if anyone here could make a diagnosis on what I have told them. It is quite possible to make a diagnosis in such a case. The only surgeon that I have asked about it who could make a diagnosis, was Dr. Kelley's assistant in Baltimore, Dr. Burnam. Well, it proved to be a malignant tumor of the adrenal body separate from the kidney. In looking up the literature I found that it was characteristic of some tumors in the adrenal to have these secondary sexual changes, particularly the hirasties, which are supposed to be due to disturbance of the internal secretion.

Dr. Chute: I saw that patient, and I think Dr. Codman has neglected to say anything about the characteristic appearance of the tumor. It had that Indian pudding effect which seemed to me to be characteristic of the thing.

Dr. Codman: Histologically, Dr. Wright said that it was not a hypernephroma, although from its gross appearance it looked like hypernephroma. It did resemble exactly a baked Indian pudding.

Dr. Barney: I should like to ask if there was any change in blood pressure in that case.

Dr. Codman: None that I recall.

Dr. Tenney: I have here a stone I removed last week from a man 72 years of age. Six years before he had had a suprapubic prostatectomy. He had a rather miserable convalescence from this operation, and had not had comfort otherwise. The sound quickly found a stone in his prostatic cavity, and this was removed.