

soreness. It does not involve the heart and grows better as the day progresses.

*Rheumatism in children* differs somewhat from that of adults. The tonsils are the most common source of suspected infection. The arthritic symptoms are not as well marked as in adults, and are more apt to come on insidiously. Recurrent tonsillitis, chorea, erythema, or nose bleed, are often associated with arthritis. Continued fever with slight remissions suggests endocarditis.<sup>22</sup> There is not the same successive involvement of joints seen in adults. The family history, or a history of "growing pains," especially if accompanied with even slight swelling (fibrous nodules) suggests rheumatism.

The distinction between rheumatism in adults and that of children is best told by Cheadle, in a single sentence:

"The various manifestations of rheumatism massed together in the case of adults tend to become isolated in the case of children, so that the whole phenomena are distributed over years, instead of weeks or months, and the history of a rheumatism may be the history of a whole childhood."<sup>23</sup>

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- <sup>19</sup> Goldthwait, *Ibid.*, Aug. 10, 1899.
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## Clinical Department.

### REPORT OF CASES OF DECAPSULATION OF THE KIDNEY.<sup>1</sup>

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THE following cases are reported in the endeavor to add a little to our knowledge of the results obtained by various surgeons in their efforts to cure a disease, which until recently has been considered purely medical, by surgical interference.

#### CHRONIC DIFFUSE NEPHRITIS. DECAPSULATION.

**CASE I.** Ellen W., thirty-three, married. Laundress. Entered Massachusetts General Hospital, Nov. 5, 1901.

*Personal history.*—Unimportant, excepting she has for several years drunk one-half gallon of beer daily. Subject to headaches and vomiting spells.

<sup>1</sup> Read at the annual meeting of the Suffolk District Medical Society, October 31, 1903.

*Present illness.*—For past two or three weeks severe headache, vomiting and swelling of feet and abdomen. Urine scanty. Diarrhea persistent.

*Examination.*—Well developed but obese. Heart and lungs negative, except for few râles in back. Much edema of feet, legs, thighs, back and face, with marked ascites. Pulse 70, small volume, low tension. *Urine.*—Acid, 1,009, albumin 24%. Sediment, blood, chiefly abnormal, many fatty renal cells, and hyaline, granular and brown granular casts. Quantity in first three days, less than 10 oz.

With daily hot air baths, pilocarpin and purgative treatment she improved slowly during first two months. Amount of urine rising to from 25 to 40 oz. per day. Albumin falling to 3% on average. Casts and blood corpuscles fewer in number.

During winter very slight improvement. Ascites required tapping.

March 24, 1902. Less edema and ascites.

Occasional headache and vomiting. *Urine* 1,012, smoky. Albumen 4%. Sediment as before, with occasional waxy cast. In spite of this apparent improvement patient's general condition became so much worse that operation seemed advisable.

*Operation*, March 28 on both kidneys. Tissues edematous, kidneys small, dark, granular in appearance; patient stood operation well. During first three days after operation twenty-four-hour amount of urine rose from 20 to 40 oz. Improvement after operation slow, but less headache and vomiting.

May 1. Less edema, and in legs and feet only, but ascites continues; tapped and 8 qts. of fluid drawn. *Urine* shows fewer casts, hyaline and granular, with fat; fewer renal cells and blood corpuscles; albumen 4%.

June 1. Patient stronger, appetite improved; still occasional headache and vomiting. *Urine* pale, about 1,010, average 30 oz. in twenty-four hours. Albumen, large trace. Casts same as before, with renal and fatty renal cells, few blood corpuscles. Returned to medical ward June 6. Hot air baths renewed and diuretics, which raised amount of urine to an average of 40 oz. Abdomen requires tapping about once in three weeks. Discharged July 20, 1902, when she felt well, but vomited every few days; had no edema and very little ascites. *Urine* pale, 1,011; albumin 3%. Occasional hyaline casts; renal cells, with fat; occasional blood corpuscles.

Patient returned to hospital in October, 1902. Had felt well since operation and had been doing housework daily, and said that she was better than she had been for a long time.

*Urine* then showed 4% of albumen, with a sediment of a few waxy, many granular casts, with fat adherent; few red corpuscles, and compound granule cells. Patient lost sight of and subsequent history unknown excepting that she died in May, 1903, after considerable excess in alcohol.

**CASE II.** Mary B. L. Twelve years old.

*Etiology.*—She had measles, mumps and scarlet fever as a child. She has always been well and strong. Last February caught cold and was at home a week. Two days later her feet swelled and she was edematous below her eyes. She had no headache or disturbance of vision. She had been under treatment since April 16.

*Examination.*—The tension of the pulse was somewhat increased. There was slight dullness in the flanks shifting on change of position. There was edema of the feet and legs and under the eyes. *Urine.* In the medical wards before transfer she had been secreting from 8 to 10 oz. of urine a day. On the

23d it was 9½ oz.; on the 24th and 25th it fell to a little over 3, and on the 26th, 2 oz. An examination on the 23rd showed the urine to be smoky in color, acid, 1,031, ½ to 1% of albumen. The sediment was typical of parenchymatous nephritis. Urea 3.59%.

*Operation.* — Dr. Scudder decapsulated both kidneys June 22, 1903, and a fragment removed was reported typical of sub-acute glomerulo-nephritis.

*Subsequent history.* — Next day Cheyne-Stokes respiration developed but the patient was bright when spoken to and had no headache. On the 24th there was much less edema but great dyspnea. Next day the dyspnea was better, but there was more edema, and on the 27th she died.

**CASE III.** A. S. R., twenty-seven years old. Seen by Dr. A. T. Cabot in consultation with Dr. A. W. Dudley of North Cambridge, on June 10, 1903.

Three years before patient first learned that his urine contained albumen. From that time meat was omitted from diet. One year ago, he consulted Dr. Dudley for swelling of feet.

*Examination of Urine.* — 1,018, albumen 4%. Casts hyaline, granular, and fatty; renal cells. Ten months ago stopped work, and has kept very quiet. Has slowly lost strength, and has had slowly increasing edema of dependent parts.

Examination of urine at this time was as follows: — 1,015, much sediment, albumen 4%; considerable pus since one catheterization; casts about as before, numerous hyaline, sometimes with epithelium adherents; large and small granular. Had a convulsion ten months ago, which was succeeded by nine or ten others, followed by a coma for forty-eight hours. Later, about Thanksgiving, had several more convulsive attacks, followed by a week of coma, thought possibly to be due to a blow on the head. On April 15, two seizures, with coma for twelve or fifteen hours. On May 15, three seizures in six or eight hours; coma for forty-eight hours. Urine always runs up in amount before seizures, and once reached 178 oz. in a day before attack; it decreases immediately after attack. Average amount of urine has shown steady decrease.

Operation not advised, but demanded by patient and friends, who understood the desperate nature of the case and wished to take desperate chances.

*Operation* June 18, 1902. Much edema in tissues. Large white, mottled kidneys.

Patient made good recovery, but effect of operation on kidneys was practically nil. Gradually lost strength through summer and died early in September. No autopsy allowed.

The average amount of urine after the operation was from 50 to 60 ounces, with considerable variation, at times above 100 oz.

**CASE IV.** Mr. A. G. H., forty years old. Seen by Dr. A. T. Cabot, in March, 1903.

Albumen had been discovered in his urine first in the year 1900, when he was being examined for life-insurance.

In January, 1902, he was seen by Dr. J. H. Grimes, who found indications of interstitial nephritis, and shortly after that time retinal hemorrhages appeared. Mr. H. rapidly became worse, and during that winter had several slight convulsions, followed each time by a period of somewhat more than a week during which he knew that he was in the hospital, and recognized his friends, but had forgotten much of the immediate past, and did not know how he came to be in the hospital, nor what he was there for. During each of these periods he talked intelligently, but when they had passed, the time was a blank to him. In the latter part of February, and early in March, he had several severe

convulsions, which left his mind very much impaired, and it was at this time that Dr. Cabot saw him.

*Examination* showed right kidney somewhat movable, coming down width of hand below ribs. *Urine.* March 26, 1902, pale, alk. 1,010, albumen, ½ to ¾%. Sediment considerable; pus, small and large round, compound granular cells. Some abnormal blood. No casts seen.

*Operation.* — March 27, 1902. Capsule of kidneys more adherent than normal. Kidneys are dark and congested, with a roughly granular surface. Blood pressure immediately after operation, 210.

April 1, 1902. In past two days twenty-four-hour amount of urine has been 88 and 55 oz. respectively. No convulsions except one just after operation. Sediment has become less in quantity.

April 4, 1902. Albumen had fallen to less than ¼%. Blood pressure had fallen to 180.

April 17, 1902. *Urine* normal in color; alkaline; 1,010. Total, 50 oz. Albumen, large trace. Sediment slight, chiefly pus. Some round cells, and few normal blood corpuscles. Some hyaline casts, with renal cells, and little fat adherent. Few highly refractile casts.

May 5, 1902. *Urine* twenty-four-hour amount 53 oz. Albumen, ¾%; 1,004; no casts seen.

No convulsions, mind perfectly clear, up in chair; died suddenly May 12, 1902.

*Autopsy.* — Heart hypertrophied, adherent to pericardium. Valves free from deformity. Coronary arteries show some sclerosis. Kidneys, weight of both, 280 gms. Each is invested in fairly abundant perinephritic fat, which, upon dissection, shows nothing abnormal. Each is invested also in a capsule rather lightly adherent to a surface marked by coarse granular elevations interspersed with deeper, more extensive depressions. The elevations themselves, smooth and of the normal kidney color. No vascular attachments of the capsule to the kidney are apparent. Upon section, markings fairly distinct, cortex ⅓ cm. in thickness. Glomeruli faintly visible. Pyramids dark, bluish and red.

Cortex marked by radial red lines. Consistence tough.

Microscopically there were no blood vessels between the kidney and the capsule. The arterioles show arterio-sclerosis. The veins and capillaries are injected. There was an organized pneumonia and edema and congestion of the lungs.

**CASE V.** Margaret L. C., twenty-three years old.

*Etiology.* — In doubt. With the exception of pneumonia at six, well until present illness began.

*Present illness* began two and a half months ago, with swelling of ankles at night. Seven months later the swelling became general and she was very uncomfortable and short of breath. There was no headache, dyspepsia, pain or impairment of vision. The edema never entirely went, but at times was confined to the legs. Ten months ago she had pneumonia and has been very susceptible to "colds" since. Thinks she has been very much better in the last few months. She lies about the house, and occasionally goes to the theatre or for a short walk.

*Examination.* — Patient was fairly well developed and nourished. She was pale and had some edema about the eyelids. There was considerable edema of the lower part of the back. Heart apex in fifth interspace in the nipple line. Aortic second accentuated. No murmur. Pulse regular, good volume, rather high tension. Lungs normal. Slight dullness in flanks. *Urine.* Typical of chronic diffuse nephritis. Twenty-four-hour amount at entrance 50 oz. and slightly less

at discharge. Average amount normal. Urea varied from 10 to 40 gm.; average amount normal.

Dec. 6, pale, acid, 1,012, 1-10% albumen. Many hyaline and finely granular casts, with many fat drops and some fatty renal cells adherent. Rare fatty cast. Urea 16.77 gm.

*Operation.*—By Dr. S. J. Mixter; Dec. 7, 1902, the left kidney was decapsulated. The capsule stripped easily. The kidney was enlarged and covered with yellow granules. A piece of the kidney was removed for examination and reported by Dr. J. H. Wright to be typical of subacute glomerulo-nephritis. As the patient's condition was not good the second kidney was not operated upon until Dec. 20, when the same operation was performed. The kidney was smaller than the right one and had a depressed scar on one side. The capsule stripped easily. The yellow granules were again present.

*Subsequent history.*—She did well as far as the operation was concerned and was discharged not relieved Jan. 3, 1903. The amount of urine and urea were both less than at entrance. Oct. 19, 1903, her sister reported that she had been much better since her operation. Edema was less, she had a better color, and was stronger. She went about daily. The urine a month ago showed 1-10% albumen. No blood or pus, but still some casts.

CASE VI. George R. R.

*Etiology.*—Has had asthma most of his life; has had bronchitis, varioloid and children's diseases.

Three years ago had "kidney trouble" and was laid up nine weeks; recovered and had another attack June, 1901.

*Examination* showed a pale fat man, but fairly well nourished. Lungs showed the physical signs of asthma. Abdomen distended, with dullness over the dependent portions.

*Operation.*—In November, 1902, Dr. E. A. Pease decapsulated both kidneys. Has been tapped repeatedly and from four to five quarts of fluid removed at times.

Oct. 30, 1903. Dr. Sawyer reports that the patient is in fairly good condition. An examination of the urine shows twenty-four-hour amount 55 oz., color light, slightly acid, 1,014, albumen  $\frac{1}{2}$ %; sediment considerable, light, flocculent, many casts, hyalin, fine and coarse granular, some with fatty renal cells and minute fat drops adherent, fatty degenerated cells, a little free fat, an occasional blood globule. The patient has carefully measured the twenty-four-hour amount, which averages over 50 oz. The edema has disappeared.

CASE VII. Carl H., thirty-three years old.

*Etiology.*—Apart from the fact that he is a painter, nothing obtained. Has had attacks of weakness, with swelling of the feet, face and legs since last April.

*Examination.*—The heart is enlarged, with a systolic murmur at the apex. Pulse regular, good, high tension. *Urine.* Sept. 17, twenty-four-hour amount, 45 oz., acid, 1,014, 1-5% albumen, urea, 88%. Few hyalin casts, with an occasional fatty cell and blood globule adherent, an occasional fatty cast, considerable free fat, few normal and abnormal blood globules.

*Operation.*—Dr. Mixter decapsulated both kidneys Sept. 19.

*Subsequent history.*—Recovery was uneventful and he went to the Convalescent Home Oct. 14. The amount of albumin had fallen to a trace on Oct. 3. The sediment had also improved, but on Oct. 14 there were still a few casts, with fat adherent. The amount of urine just after operation fell to 10 oz. but went up again immediately and at discharge was 70 oz. It has

not been possible to see the patient as he has gone to Maine. Letters sent to him have not been answered, but a friend who has heard from him says he is very much better and works steadily, but is afraid to come back to Boston for fear of catching cold. January, 1904. Patient reports that he again has edema of legs, etc. Has had to give up work.

CASE VIII. W. H. K., male; thirty-three years old.

*Etiology.*—With the exception of "grippe" ten years ago, the patient had always been well up to several months before, when he caught cold. Has drunk five to eight glasses of beer a day until within last two months.

*Present illness.*—His feet, legs, body and face became moderately swollen. He felt dull and weak and his head ached slightly. He vomited occasionally. One month ago gave up work. Just before operation he had no gastric symptoms, but the edema persisted and he had dyspnea and palpitation on exertion. His eyes were normal.

*Operation.*—Dr. J. W. Elliott decapsulated both kidneys, removing a small piece from one for microscopical examination. This was reported by Dr. Wright to be typical of a sub-acute glomerulo-nephritis. The substance of the kidneys was soft, grayish and friable. The one the piece was removed from was a little larger than normal.

*Urine.*—Typical of chronic diffuse nephritis. The amount had been about 80 oz. until just before operation, when it fell to 25 oz., rising to 95 the fifth day after operation. The average was about 80 oz. The urine report April 8 was: Color normal, acid, 1,017, albumen  $\frac{1}{2}$ %, no sugar. There were many hyalin and finely granular casts, with renal cells and blood adherent. There were a few casts, with fat adherent. There was considerable normal and abnormal blood. The amount for twenty-four hours was 45 oz.

*Subsequent history.*—His condition was improved temporarily, but had occasional attacks of headache and vomiting. He grew worse and died early in June.

*Autopsy.*—The kidneys were found slightly more tightly bound in their position than in normal perinephritic tissue. Each organ was apparently provided with a capsule which appeared to be readily removable but which was very intimately connected with the perinephritic tissue.

CASE IX. Francis H. J., thirteen years old.

*Etiology.*—Scarlet fever at four years, with edema of face and legs during convalescence. Urine dark and scanty. Symptoms of nephritis were gone in two weeks.

*Present illness.*—Not strong since scarlet fever. After, had frontal headache and was easily tired. Rare gastric upset. Summer before entrance had an exacerbation of nephritis for a week. Had grown gradually worse since then.

*Examination.*—His face was puffy and hands slightly cyanotic. There was a systolic murmur. The odor of the breath was slightly urinous; there was some edema of the extremities, and his feet were cold and clammy.

*Urine.*—April 11, 1,017,  $\frac{1}{2}$ % albumen. Fine and coarse granular casts, with fat and renal cells adherent. Amount 60 oz.

*Operation.*—On April 12 Dr. W. A. Brooks, Jr., decapsulated both kidneys. He found the tissues very edematous at operation.

*Subsequent history.*—Ten days after operation the edema was still marked. From May 3 on, the patient had daily hot air baths for some days. The baths were then given at two-day intervals and then every third day. On May 29, his edema had practically

gone and his general appearance was excellent. He was transferred back to the medical service on June 9. An examination of the urine May 28 showed 1-10% of albumen, a rare hyaline and finely granular cast, blood globules and a few compound granule cells. The amount of urine varied greatly. It was 60 oz. when he came to the surgical service, 30 on the day of operation, 60 on the fourth day and 120 oz. on the twenty-fifth day. Dr. Torbert saw the boy Oct. 15. He has been well since July 15, 1902. Two months ago, his mother says, he had a headache and was slightly edematous about the face and hands. This all went in twenty-four hours. He goes to both day and night school, eats well, and is very active. The scars are firm and there is no pain or tenderness in the kidney region. His tongue was clear and breath sweet.

The urine was examined and was free from albumen and casts. It was pale, acid, 1,013. The urea was 88% in the specimen examined. He gets up two or three times at night to pass water and passes a good amount during the day.

To summarize these cases briefly:

Five have died at periods ranging from five days to two years and two months after operation. One case is probably cured. As the urine has only recently been found free from albumen and casts it is too early to classify it as cured. One case has improved and is still gaining, eleven months after operation. Two cases, a year after operation, show very little if any improvement.

In the nine cases the disease was of the chronic diffuse type. In each case ether was the anesthetic used. In two cases in which there was an autopsy some time after operation it was found that a new capsule had formed not essentially different from the old one. The amount of urine and urea varied within wide limits. It was invariably smaller than usual the day after operation but regained or exceeded the previous amount within a few days.

## DECAPSULATION OF THE KIDNEYS.<sup>1</sup>

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CASE I. P. M. Male, forty-two years. Entered the hospital June 3, 1902. He had had measles but no mention was made of scarlet fever. He used alcohol to excess. He had had increased nocturnal micturition for five months. Later edema, anorexia, insomnia, epigastric pain, headache and diarrhea appeared. On entrance there was evidence of fluid in the chest and abdomen. There was edema of the legs, genitals, back, abdominal walls and face. The radial arteries were sclerotic. The urine was smoky neutral, 1,019, albumen 4%. The sediment contained some normal blood, fine granular and hyaline casts with fat drops and fatty renal cells adherent, some fatty renal cells and compound granule cells and triple phosphate crystals. The urea was 1.82% and the twenty-four-hour amount of urine about 36 oz. He did not improve under medical treatment and was operated upon by Drs. Burrell and Blake on June 14. Ether was the anesthetic. Improvement began immediately after the operation. The edema began to

decrease in ten days and was entirely gone in six weeks. The amount of urine increased to 150 oz. He was discharged on Aug. 2. At that time the urine was smoky, 1,012, acid and contained 1-10% albumen. The sediment contained an occasional cast with fat, a few renal cells, leucocytes and blood. He was seen last on Oct. 27, 1903, a year and four months after the operation. He is now free from all symptoms, does not have to rise at night to urinate, has no trouble about doing his work — that of a general man on a summer place. He looks well and has no edema of the ankles. He is still drinking as he chooses. The urine passed shortly after a meal was pale, slightly acid, 1,002, urea 4%, albumen slight trace. Nothing found in the sediment.

CASE II. J. S., female, thirty-nine years old. Patient had been in the City Hospital several times since 1894 for fistula in ano and a tubercular proctitis. In 1894 the urine was normal except for pus in the sediment. She entered the medical wards in July, 1902, with a history of chilly sensations, fever, dyspnea, increased frequency of micturition and edema covering a period of four months. The previous history was negative except for the surgical affections mentioned above and measles. There was no mention of having had scarlet fever. The urine examination was as follows: specific gravity 1,006; twenty-four-hour amount 74 oz., albumen 4%. The sediment contained pus, a few hyaline and fine granular casts, a little free fat, a few small round cells, fatty renal cells and red corpuscles. Examination for tubercle bacilli was negative. The symptoms increased in spite of medical treatment and she was transferred for operation.

She was operated upon by Drs. Munro and Blake on Sept. 12, 1902, under ether anesthesia. Each kidney was stripped of its capsule. The pathological diagnosis of specimens taken at the operation was "marked acute degenerative nephritis, slight amyloid degeneration of glomeruli, slight chronic nephritis."

After the operation the urea increased from 1.13% to 1.64%, but the actual amount diminished from 13.90 gm. to 12.60 gm. The edema disappeared. Two and one half months after operation the urine contained 4 to 4% albumen, considerable pus, hyaline and granular casts, many renal cells and some blood corpuscles. She developed a cough, her strength gradually failed, and there was occasional edema of the face. She died without unconsciousness or uremic symptoms on March 18, 1903, six months after operation. The clinical diagnosis at the time of death was tuberculosis of the apex of the right lung, tubercular ulceration of the rectum, tuberculosis of the kidneys. The latter was justified in spite of the negative findings in relation to the bacillus of tuberculosis in the urine.

CASE III. T. E. D., male, thirty-one years old, entered the hospital July 1, 1902 having had headache, edema and dark colored urine for several days. He remained in the medical wards till September and was then discharged. His history furnished no cause for the nephritis except a moderate use of alcohol. He was admitted to the surgical wards on Sept. 17, the edema having returned after discharge accompanied with pain in the back and increased frequency of micturition. The urine at that time was acid, 1,013, albumen 4%, the sediment contained numerous hyaline and fine granular casts of small diameter with renal cells adherent, considerable blood free and on casts, some fat and many renal cells, occasionally fatty. The twenty-four-hour amount varied from 40 to 60 oz. Urea 14.52 gm.

The operation was done, under ether, Sept. 26, 1902,

<sup>1</sup> Read at the annual meeting of the Suffolk District Medical Society, October 31, 1903.