

cataract in one eye—I extract it. He has a large leucoma in the other eye to which the margin of the iris is adherent all round. It is thus impossible to see his lens. His perception of light is good and the eye is otherwise normal. I assume, and generally correctly, that the lens of this second eye is also cataractous. I make the incision for extraction of the cataract, perform a large iridectomy, and extract the lens in its capsule. On several occasions I have been mistaken in supposing it to be cataractous and have found that it proved to be absolutely normal when extracted. Such cases are very common in India, the result of trachoma, and such patients see remarkably well through a small portion of clear cornea.

The stage of immaturity at which I advocate the extraction of immature cataract in the capsule is the stage at which it unfits its possessor for the performance of his ordinary duties. I hold that if for no other reason than for the treatment of immature cataract every ophthalmic surgeon should be familiar with the art of extracting the cataractous lens in its capsule. The time allotted does not admit of my going over this operation in full detail. I have a monograph in the press on the treatment of cataract in which I go into full detail on everything concerning extraction in the capsule among other things, but here I wish to state concisely a few of the leading points in this operation. The patient and his eye are prepared as for the ordinary operation; atropine is not necessary on account of the exceeding infrequency of iritis following this operation. The operator sits on a stool at the patient's head, the assistant stands beside the operator. The assistant is thus not in the way of the operator. The sclero-corneal incision is made with the speculum in and includes a little less than half the circumference of the sclero-cornea. I personally prefer the incision finished in the cornea without a conjunctival flap, as the flap is more or less in the way. An iridectomy may or may not be done according to the operator's fancy. The speculum is now removed, the assistant draws down the lower eyelid with the face of his thumb, placed on the skin below it; with his other hand he lifts the upper eyelid forward with a large sized strabismus hook, in his three first fingers, as if he were lifting the contents of the orbit out of the socket, and not lifting it towards the brow, using the ring and little finger of the same hand to draw back the brow and orbicularis muscle. This does not imply any violence on the part of the assistant. The operator now places the end of a large-sized ophthalmic spatula in the left side of the cornea over the junction of the middle and lower third of the lens. He places the end of a large sized blunt-pointed strabismus hook over the corresponding position to the right of the spatula. He makes steady pressure backwards towards the optic nerve with this spatula and he makes similar pressure with the strabismus hook except that in making pressure with his strabismus hook he draws it backward and forward across the cornea. The edge of the lens at the wound will be seen to tilt forwards and the clear vitreous will be seen between it and the scleral margin of the wound. As soon as this occurs the pressure with the spatula should practically cease and the same stroking movement of the strabismus hook should be continued, its position not being altered on the cornea at first but the direction of the pressure exerted, though it should be altered gradually more and more in the direction of the wound until it finally folds the cornea beneath the lens; at this stage the lens is delivered. The iris should be replaced if prolapsed. The assistant should then let go the eyelid and the patient's eye should be dressed up.

I may here state that my experience now extends to about 20,000 cataract extractions, about 17,000 of which have been in the capsule, and amongst the latter have been many immature cataracts, especially in recent years.

LIVERPOOL ROYAL INFIRMARY.—At a meeting of the election committee held on August 10th at the Law Association Rooms, Mr. William Thelwall Thomas was elected honorary surgeon in place of Mr. George Gibson Hamilton, resigned. Reference was made to Mr. Thomas's qualifications for the post in THE LANCET of August 1st, p. 333. Mr. Thomas is to be congratulated on an uncontested election.

RENAL CALCULI; NEPHROLITHOTOMY, SUBSEQUENT NEPHRECTOMY ON ACCOUNT OF HÆMORRHAGE.

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A LAD, aged 18 years, was admitted into the Cumberland Infirmary in July, 1906, complaining of attacks of severe pain in the right lumbar region of about two years' duration occurring while he was going about at his work, but never when resting or lying down. The onset was usually quite sudden; the pain was very acute and cutting in character, lasting for about five minutes, and then quickly passing off. It was localised to a spot just over the tip of the eleventh right rib; it never radiated in any direction, upwards or downwards, and was never accompanied by sickness or vomiting. The patient had never observed anything abnormal in his urine at any time. Ten years ago he was in the infirmary suffering from hæmaturia of renal origin but the attacks of pain from which he now suffered commenced about two years ago and had become much more frequent lately so that he was unable to go on with his work. The evidence of renal calculus was derived from three sources: (1) local pain, (2) urine examinations, and (3) the x rays.

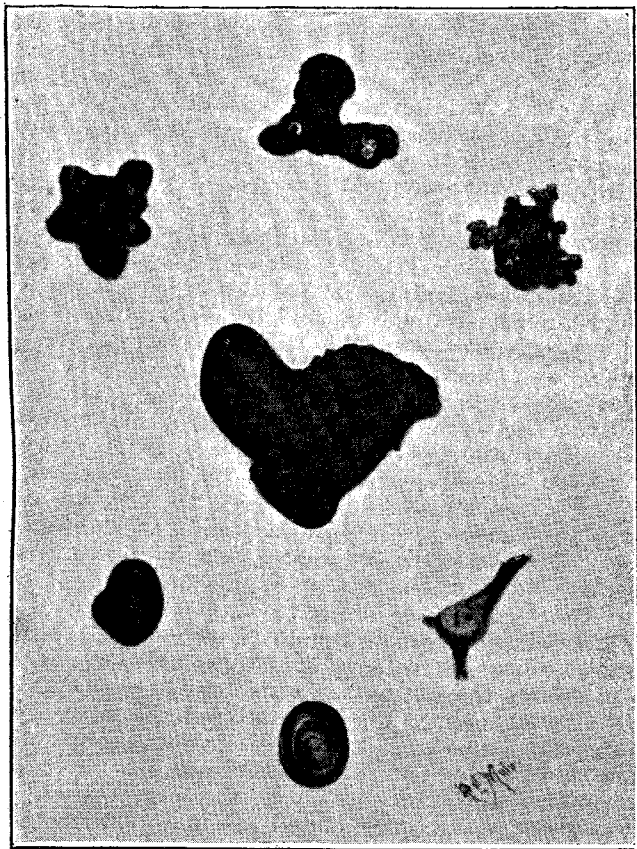
On admission the patient was seen to be a healthy-looking, well-built lad. No pain or discomfort was present when lying at rest in bed. Examination of the chest, abdomen, spinal column, ribs, and pelvis showed nothing abnormal. Neither kidney was palpable. The first specimen of urine contained a very slight trace of albumin and on microscopical examination a few red blood corpuscles were seen. Some time later it was noted that the urine for some days at a time became distinctly smoky in colour and contained a large quantity of red cells in the deposit, while for a few days again it became quite clear and very few red cells were seen in the centrifugalised deposit. Albumin was always present but in small quantity. A constant feature, however, was the presence of a large number of calcium oxalate crystals of the small envelope-shaped variety. The specific gravity of urine averaged 1015 and the reaction was always acid. The abdomen was then examined by the Roentgen rays and a fluorescent screen, using a canvas top couch, with focus tube below, and a diaphragm and compressor. The Roentgen rays were generated by a 12-inch spark coil, with Mackenzie Davidson mercury interrupter. The fluorescent screen showed on the right side of the abdomen, just beneath the ribs, a distinct black shadow, with rather indefinite outline, moving up and down slightly with respiration. The bowels were previously well evacuated, so that fallacy from shadows of scybalous masses was avoided. A skiagraph showed the shadow but rather indistinctly. No shadow was seen on the left side.

Operation.—An incision was made over the right renal region, the kidney being exposed and drawn up into the wound and incised along its convex margin. The kidney seemed larger than normal, its substance was friable and easily torn, and at its lower end there was a thin-walled cyst of about the size of a walnut containing watery fluid. On opening the kidney an ounce or two of watery fluid escaped and on exploring the pelvis a calculus (*a*) was found occupying the cavity, of an irregular branched shape, smooth surface, black in colour, and very hard. Lying in the calyces were found two more calculi, each of about the size of a pea, black, hard, rounded, and irregularly branched. The kidney-incision was then sutured with catgut and the muscles and skin were closed completely.

The patient recovered well from the anæsthetic but gradually became restless, his pulse became rapid and respirations more frequent; pallor of the skin and mucous membranes was noticed and he complained of thirst. Three hours after operation an intravenous injection of normal saline solution, with 10 minims of adrenalin chloride, was given with marked effect on the pulse, respirations, and restlessness.

Shortly after he passed per urethram about 20 ounces of what appeared to be practically pure blood and in an hour

or so he had again become restless, with rapid pulse and respirations, and the pallor had increased. After another intravenous injection of saline solution and adrenalin the patient was chloroformed. The skin and muscles wound was opened up and the kidney was exposed. On opening the muscles a quantity of blood with a large amount of clot escaped and the kidney was then seen to be bleeding freely from the incision in the cortex. So the pedicle of the kidney was separated freely, transfixed, and ligatured with silk and the kidney removed. The remaining cavity was cleared as quickly as possible of blood clot and the wound was closed, a drainage-tube and gauze packing being inserted.



Oxalate of lime calculi from kidney.

The patient stood the operation very well. His pulse became stronger and rather slower and there was no restlessness. Saline solution and adrenalin subcutaneously and then saline solution per rectum were given later. For the next day or two the patient complained of great thirst but otherwise was very well. Blood and clots were passed per urethram for about eight days afterwards, then the urine remained smoky in colour for about a fortnight. On the third and fourth days after operation the temperature was 100° and 101·6° F., but remained normal during all the rest of his illness.

For seven days before operation the daily quantity of urine passed averaged 35 ounces; for four days after operation, not including the day of operation, the daily quantity averaged 69 ounces; while for the next seven days it averaged 40 ounces, so that neglecting the increased flow of fluid for the first four days after operation the quantity of urine secreted before and after operation remained much the same; presumably the right kidney had not discharged its function for a long time previously.

The wound drained for some time and then slowly healed. The patient was discharged from hospital in five weeks in a very satisfactory condition. Examination of the urine a fortnight after operation showed no calcium oxalate crystals or blood corpuscles.

Pathology.—Examination of the excised kidney showed it to be rather larger than normal and to contain at its lower end a thin-walled cyst of about the size of a walnut. The cortex was thinned all over but more markedly at some places. The pelvis and calyces were dilated, and imbedded in the calyces were found four more calculi, each of about the size of a pea, one smooth, two very rough and irregular, with sharp spinous processes, and one of an elongated pear shape, with bulging head. They were all very hard and

black in colour and were found, along with those removed at the first operation, to consist of calcium oxalate.

Microscopic examination of the excised kidney showed no evidence of pyelonephritis. The medullary layer was greatly atrophied, due to the dilated condition of the calyces. Small hæmorrhages from distended vena recta were seen in this layer. There was an increase of the connective tissue between the vessels and tubules, a secondary interstitial change, following the atrophy which was of some duration. The secreting tubules in the cortex showed cloudy swelling of their epithelial lining; otherwise they were quite normal.

Remarks.—It is impossible to detect some calculi without an exploratory incision of the kidney, and it is equally difficult to discover all stones even when the kidney lies in the hand with an incision made along the convex border and the finger searching the pelvis. In this manner three stones were discovered in the case now recorded, but four others were only seen when the kidney was completely split up after removal.

The points to which attention is directed are the following: 1. That deep catgut sutures along the incised border of the kidney failed to check hæmorrhage when the kidney was allowed to drop back within the abdomen. 2. That when the hæmorrhage could not be arrested removal of the kidney saved the case. 3. That the reactionary hæmorrhage was a fortunate occurrence, seeing that the kidney was far from healthy owing to hydronephrosis, cysts, and other changes, also owing to the concealment of four more stones in the solid parts of the organ, so that the operation would have been only partially successful had the nephrectomy not been undertaken. 4. Oxalate of lime calculi are more frequently single. 5. That there was no history of renal colic with rigors, nausea, vomiting, and perspirations. 6. That the shadow of the calculi was seen distinctly on the fluorescent screen. Phosphatic calculi are said to give a very dark shadow, while calcium oxalate calculi give a much lighter shadow and those of uric acid are seen only with difficulty.

The seven calculi weighed 104 grains; the large one 55 grains.

NOTE ON A CASE OF VESICAL CALCULUS, THE NUCLEUS OF WHICH WAS A REVOLVER BULLET.

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THE subject of this note is, I think, of sufficient interest to deserve publication.

The patient, an East Indian boy, then seven years of age, was accidentally wounded in the right hip by a revolver bullet on Oct. 12th, 1902. There was no wound of exit. He was taken to the nearest district hospital where the medical officer detained him under treatment for 14 days. He was then discharged with the wound of entrance almost healed. This wound soon healed completely. The boy was next treated for urinary trouble—viz., incontinence of urine—at the Colonial Hospital, Port of Spain, from August 31st to Sept. 6th, 1906. The history of the bullet wound was obtained, but the existing condition was ascribed to an elongated and somewhat tight foreskin, the removal of which certainly afforded temporary relief of the bladder symptoms. The bladder was not explored. X ray examination revealed nothing definite. His symptoms returned soon after he left hospital and he suffered from incontinence of urine as well as intense pain whenever he attempted to pass urine. His condition never improved, in spite of various lines of treatment which his anxious father had recourse to, and his sufferings had increased considerably when he was admitted to the San Fernando Hospital on Dec. 13th, 1907.

On admission the patient was a thin, delicately built boy, aged 12 years, with a very anxious, perturbed countenance. He frequently and with tears in his eyes would cry out imploringly, "Doctor, it hurts me too much; do take out the bullet." His temperature was 99·4° F. The heart and lungs were normal. In the hypogastric and lower part of the umbilical regions the distended bladder was palpable. On the right side and below the umbilicus there was an