attention to the rapid wasting and to pleuritic friction at the base of the left lung anteriorly. Menstruation had ceased for several years. Leucorrhoea was slight. Micturition and defaecation were attended with no difficulty, and the bowels were regular. Her nutrition was very poor. She was anaemic. There was oedema of both lungs. The heart sounds were very weak. The abdomen was greatly distended by an apparently fluctuating tumour, dull in front, but clear above and at the sides. With the view of relieving the lungs as a preliminary to operation, I inserted an aspirator needle into the tumour. Needless to say no fluid was got. On May 29th Dr. McKinney gave her chloroform, and I opened the abdomen over the resonant area in the epigastrium, and found I had to deal with a growth in the anterior abdominal wall. It was shelled out with difficulty, owing to the vascularity of its surroundings and the multiplicity of its marginal lobules. When it had been removed it was recognized that it had occupied the subperitoneal layer, there being peritoneum alone behind it and the other structures of the abdominal wall in front of it. The tumour weighed $21\frac{1}{4}$ lb., and filled a large toilet basin. The patient made a slow but fairly good recovery, the chief difficulty being the securing of adequate drainage of the enormous cavity. When she went home healing was not complete, there being a protrusion along the line of the wound, which was covered by sluggish granulations. About eleven months after operation I again saw her on April 17th, 1901. The wound was still unhealed and the abdomen was much distended by a hard dull swelling around the site of the original tumour and by a second one in the splenic region. On August 8th, 1901, Dr. Hall wrote to me that she was gradually sinking, and soon afterwards she died, having lived about sixteen months after the operation.

CASE II.—M. A. M., Ballintoy, aged 50, married 27 years, having had eight children and one abortion, was sent to the Samaritan Hospital on August 26th, 1902, by Dr. Mellroy, of Ballycastle. She complained of a growth in the right iliac region, which she had noticed for nine months. Menstruation had ceased eight years previously. Leucorrhoea was absent. Micturition and defaecation gave no trouble. The nutrition was good and there was no anaemia. The heart and lungs were normal. The abdomen was distended on the right by an elastic rounded fixed tumour reaching to the level of the navel and dull on percussion. Per vaginam the uterus was found to be displaced to the left by a tumour in the right broad ligament. On November 9th the operation was performed in Ballycastle Union Infirmary. The tumour was found to be a lipoma of the right broad ligament and iliac fossa. It was enucleated with comparative ease and the cavity drained. Under Dr. Mellroy's care she made an excellent recovery, and on March 24th, 1903, she was keeping quite well.

Subperitoneal lipomata are more frequent in women than in men in the proportion of 25 to 16.¹ They occur most frequently on the right side, the neighbourhood of the kidney and the iliac fossa being their favourite sites. Clinically there are two important varieties,² both of which are exemplified by the cases above recorded—namely, the malignant and the benign. The former include the retroperitoneal tumours, especially those which originate on the posterior aspect of the abdomen. They are difficult or impossible to remove. They are microscopically sarcomata in whole or in part. Patients afflicted with them are at first in good health, but ultimately waste markedly, while the tumour rapidly increases in size. My first case is an example of this variety. When I operated upon her I was unaware of the tendency to malignity which these seeming lipomata possess, and gave a good prognosis; consequently I was much disappointed at the result. Since then their malignant tendencies have been widely recognized, and in any future case I shall be more cautious in holding out a hope of permanent cure. The benign variety is exemplified by the second case. It includes lipomata of the broad ligament, omentum, and appendices epiploicae. These can be safely removed. They do not cause much deterioration in health and justify a good prognosis when they have been removed. The broad ligament appears to be a somewhat rare situation.³ In my case the tumour got its chief blood supply from vessels at the base of the broad ligament. It appeared to have originated there, and by its upward growth to have separated the layers of the broad ligament and extended into the iliac fossa.

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THE TREATMENT OF VESICAL PAPILLOMA BY INJECTIONS.

By HERBERT T. HERRING, M.B., B.S.

THE difficulty of removing diffuse papilloma of the bladder and the frequency with which these simple tumours recur, even after the most severe operations, led Sir Henry Thompson and myself to seek some other means of dealing

with the disease. Four years ago I published in this JOURNAL (July 26th, 1899) the details of a new treatment by daily injections of solutions of silver nitrate and gave the results obtained in a series of cases which had been under our joint observation for a considerable number of years. Before relating other cases it may be useful perhaps to repeat briefly the method adopted.

The patient uses (1) a No. 7 soft slightly *coudée* catheter with the eye situated near the point, which will withstand the action of boiling water without material damage, (2) a 4 oz. indiarubber syringe fitted with a silver taper nozzle and stop-cock, (3) a standard solution of nitrate of silver of 1 gr. to the drachm of distilled water, acidulated with a small quantity of nitric acid. Before the patient can be trusted to carry out the treatment for himself it is necessary to give him a systematic course of lessons to ensure sterility during the operation, absence of injury to the organs, and the desired effect on the papilloma. The injections are commenced by adding half a grain of silver, that is, half a drachm of the standard solution to the four ounces of water contained in the syringe. The strength is gradually increased by five drops on successive days until a drachm and a-half or two drachms are used. This very gradual addition ultimately enables the patient to use stronger solutions without pain than he could do otherwise; for pain, straining, or frequency of micturition are indications that the treatment is too severe. The patient should only experience a slight feeling of after-warmth in the region of the bladder which should subside in the course of half an hour. The injection should be at the temperature of 100° F., and thrown into the bladder in two parts from the syringe, each being retained a few seconds and then allowed to run out through the catheter, and as it is always advisable to rest after the application, the best time for the injection appears to be before going to bed. The treatment should be continued daily for six months or more, and then, if the conditions are favourable, it should be stopped and not resumed until blood begins to reappear, when another course of injections should be commenced.

Among the cases previously reported two have died, and the remainder, from recent reports, appear to be in good health. More than one I know considers himself entirely rid of his disease. Of the deaths one case, No. 12 in the series, died quite suddenly from cardiac failure. He had never had any return of vesical trouble from the time he first came to me, weak and blanched from excessive haemorrhage, in June, 1898, until the day of his death in May, 1900.

The second case, No. 6, died in May, 1902, aged 73. In the year previous to his death he had had frequent slight attacks of haemoptysis, much pain in the right groin and leg, which prevented his walking; he had lost weight rapidly. The prostate was hard and irregular, though the haematuria for some time had been insignificant. At the necropsy a primary malignant growth was found in the prostate, with secondary deposits in the lymphatic glands, lungs, liver, and the ascending ramus of the pubes. The surface of the mucous membrane of the bladder was rough in the region of the trigone, but no papillomatous tissue was found, and the malignant growth appeared to be an independent disease. This case had been under my observation for ten years, and had been treated with the solution at regular intervals. During the early stages good specimens of papilloma were frequently found, but none recently. He was under the care of Dr. Howard Carter.

Since 1899 similar cases have come under my care, and the three following from among them go to confirm the statement that injections of nitrate of silver exercise a most important influence both in checking the haemorrhage and in retarding, if not in destroying, papillomatous growths in the bladder. They are also of special interest as giving the result of a method of treatment I then suggested—namely, of employing injections after cutting operations, or when portions of the growth have been removed through the urethra by instruments.

CASE I.—L. L., aged 51, was sent to me by Dr. Gosse, of Sittingbourne. He first saw blood in the urine in December, 1891, but had been previously treated for cystitis. In April, 1892, haemorrhage reappeared and did so occasionally until September, 1893, when he had an attack lasting a fortnight. Blood was seen at intervals during the following year, and in addition he complained of pain and some irritability of the bladder. In April, 1894, papilloma was diagnosed. All the symptoms increased in severity until June, 1896, when he was operated on by Mr. Watson Cheyne by the suprapubic method for the removal of the tumour. The patient made a rapid recovery and returned home without any symptoms, but haemorrhage recurred six months later at Christmas of the same year. It increased in frequency and severity and was accompanied by

pain and irritability of the bladder, and in August, 1899, he was laid aside by a severe and persistent attack lasting thirteen days. I first saw him on October 10th, 1899. He usually saw blood every day or so, sometimes every time he made water, and was unable on this account, as well as from the pain, frequency of micturition, and straining, to satisfactorily carry on his usual occupation. I examined his bladder and removed many fine specimens of papilloma. The urine contained pus. He questioned me as to the advisability under the circumstances of another operation, and I suggested as an alternative that he should try the effect of nitrate of silver injections. I therefore taught him the method, commencing with $\frac{1}{2}$ gr. to 4 oz. of warm water, and increased the strength daily. He returned home in the course of a week carrying out the treatment.

January 25th, 1900. He reports "the best month since December 1896." He has injected regularly, using $\frac{1}{4}$ gr. of the silver nitrate. The blood has steadily decreased in frequency and amount, a period of a week often elapsing without any symptom, and then only a drop or two of pure blood coming at the end of micturition. The other bladder troubles had also become much less pronounced. During the early part of the treatment he had voided many fragments of tumour, exhibiting the usual changes.

September 25th. Two gr. of silver nitrate have been injected daily. No blood has been seen for a month and the other symptoms have quite subsided. The urine is not quite clear for it contains pus.

May 24th, 1901. The patient writes "I am surprisingly well." He has made no injection since the last report.

May 8th, 1902. He writes, "I think I should like you to know how well I am, certainly better than since 1892." He commenced to inject in February and intends continuing until June 1st.

October 26th, 1903. In February of this year he again resorted to the treatment, and has continued it with fair regularity until July 4th. He has "not noticed the slightest trace of blood or discoloration in the urine since June 13th," and he carries out all his engagements without trouble, walking three or four miles a day and is in good health.

CASE II.—C. J. B., aged 42. At the commencement of 1900 he first saw blood in considerable quantity. Again during the year in April, July, August, October, and November, and on two occasions the haemorrhage was so severe that it necessitated his lying up. He likewise complained of difficulty in commencing to micturate. I removed some fine specimens of papilloma.

On December 2nd, 1900, Dr. Dudley Buxton administered an anaesthetic, and I examined the bladder with the cystoscope, finding a diffuse papilloma covering a considerable area in the region of the trigone. The position and character of the growth being determined I decided, as I always intended when a suitable case presented itself, to pinch off as much as I could by means of a flat-bladed lithotrite introduced in the ordinary way through the urethra. This I did, while the bladder was distended with 8 oz. of fluid, and I afterwards washed it out thoroughly with an evacuating tube and bottle filled with a solution of silver nitrate $\frac{3}{4}$ gr. to the ounce. Much tumour debris was removed, sufficient, I should say, to form a growth the size of a small walnut. There was not much haemorrhage, but sufficient to obscure the view of the cystoscope and prevent its advantageous use during the operation. In future I intend to apply a solution of adrenalin, which, I think, will enable me to see exactly what is or has been done by the lithotrite. There was little or no haemorrhage after, and what there was ceased in forty-eight hours. He had retention, and had to be catheterized two or three times, but otherwise made a satisfactory recovery, and was in his usual health in less than ten days' time. Three days after the operation I commenced to teach him to inject himself with silver nitrate.

June 24th, 1901. He has continued to make daily injections, using $\frac{1}{4}$ gr. to the 4 oz., and has never seen any blood since he left the nursing home on December 17th. The difficulty of micturition has entirely subsided, and the urine is clear. He will make no more injections for the present. He is under the care of Dr. Duguid of Sheffield.

February, 1902. The first appearance of blood since the operation, more than a year ago, occurred to-day, but he has had no treatment since last June. His health has been good. I advised a course of injections.

October 5th, 1903. He writes that he continued the injecting till the end of June, 1902, and since then, now sixteen months ago, he has done nothing, nor has he seen any blood. He is able to work hard, and has no urinary inconvenience whatever.

CASE III.—J. A., aged 43, was sent to me by Dr. Smyth, of Brockley. The first symptoms of papilloma were noted in 1896, when he was taught to inject with silver nitrate. The treatment was carried out at first fairly regularly, but it was afterwards neglected. In June, 1902, he came to me complaining of frequency of micturition, constant haematuria, and a feeling of great distension in the lower part of the abdomen. He strained a good deal to void his urine, and could only pass a very small quantity at a time. A catheter introduced immediately after he had passed water withdrew 10 to 15 oz. of blood-stained urine. I endeavoured by regular catheterization and by injections to restore the natural function of the organ, but without avail, for not only was the bladder exceedingly difficult to empty with the instrument, but the manipulation certainly caused considerable increase in the haemorrhage. I therefore decided to perform a suprapubic cystotomy with the view of removing the obstruction and of thoroughly draining the bladder.

October 1st, 1902. Dr. Dudley Buxton administered the anaesthetic, and I opened the bladder in the usual manner. On examination with the finger and with an electric lamp I found, as I had anticipated, a sessile growth springing from the base of the bladder, which,

coming forward when an endeavour was made to pass urine, effectually blocked the outlet. I removed as much of the growth as I was able with safety, but was perfectly aware that I had not removed the whole on account of the extended area from which it sprang. The papillomatous debris I judged would have been sufficient to form a mass the size of a small egg, one or two of the larger tufts having a distinct, well-formed, fibrous base. Afterwards I drained the bladder, both by a tube in the suprapubic wound and by a catheter tied in the urethra. A good deal of haemorrhage followed, and I commenced to flush the bladder—a proceeding greatly facilitated by the two tubes—with a solution of silver nitrate, $\frac{1}{4}$ gr. to 4 oz. I continued the flushings twice a day, rather increasing the strength, and on the seventh day after the operation, as the bladder commenced to hold urine and the latter was clearing, I removed the suprapubic tube. The wound healed rather slowly but quite satisfactorily, and had entirely closed by the end of a month. The ordinary injections were resumed after the flushings ceased, and were continued throughout. At the end of the time mentioned he could hold his water three to four hours during the day, and would rise once or perhaps twice at night. The bladder had entirely regained its power, as I frequently proved by introducing a catheter directly after micturition, the urine itself being clear and bright and quite free from blood.

March 31st, 1903. He has continued the injections daily since he left the nursing home on November 5th. He empties his bladder by his own effort, frequently passes the night without rising, and holds his urine three and a-half hours during the day. He has seen slight traces of blood twice in December and once in February.

October 31st, 1903. He reports he has seen blood on ten occasions; the "haemorrhage has only been in the nature of more or less pinkish drops after a stream of urine." He holds his water four or five hours by day, and does not rise at night. He ceased to inject in April, but will commence again directly.

These cases, I think, demonstrate:

1. That recurrence of papilloma after removal by suprapubic cystotomy, which unfortunately very frequently occurs, may be effectually held in check by injections of silver nitrate.

2. That if injections are made, when it has been found impossible to remove the growth entirely by operation, the recurrence of the symptoms is retarded longer than could be expected without the treatment.

3. That much of a tumour may be removed by the urethra without serious haemorrhage, and a result gained equal in some cases to that of a suprapubic operation.

4. That there is reason to hope that papillomatous growths may be entirely destroyed by long-continued applications of silver nitrate.

The conclusions, therefore, which may be drawn, although confirmatory evidence is needed, are:

(a) That injections should be made after operations for the removal of the growth, whether the operator is satisfied that he has done so efficiently or not.

(b) That the urethral route should be tried, when removal of the papilloma is contemplated, before a more serious operation is undertaken.

The question whether most cases of papilloma should be operated on through the urethra before the injections are commenced, even when the diagnosis is made early and the tumour is small, or whether injections alone should be relied upon, requires further investigation. I should be inclined under favourable circumstances to give the former plan another trial; for, in the first place, the operation need not be severe nor attended with serious consequences, if strict attention is paid to sterility in instrumentation. In the second, the improved instruments recently made by Leiter and the advantages derived from adrenalin in stopping haemorrhage, render manipulation more certain; and thirdly, the size of the tumour to be attacked by the injection afterwards will be less even if only small portions are removed, and consequently the time required to check the disease shortened. In the female I have no doubt that this is the proper proceeding. Suprapubic cystotomy can hardly ever be wanted when access to the bladder is more easily gained through the urethra by the means of Kelly's tubes.

CASE OF EXTERNAL URETHROTOMY TREATED BY CONTINUOUS RETENTION OF A RUBBER CATHETER HELD IN POSITION BY A "PERINEAL STOP."

By C. HAMILTON WHITEFORD, M.R.C.S., L.R.C.P.,
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A PATIENT, aged 38, had a bad stricture of twelve years' standing, causing retention of urine. No catheter could be passed. I performed external urethrotomy, and kept a No. 12