tied in, and the rubber tube connected with it was led into a vessel containing antiseptic lotion. During the first four days the urine contained a quantity of blood, which frequently blocked the catheter with clot. Subsequently the urine became clear, and the patient was asked if he would not be willing to go on again using the catheter as he had done for the last twelve months. The prostate was much enlarged, especially the right lobe, smooth, firm, and elastic, and on passing a metal instrument distinct obstruction was encountered at the prostate. He was a frail old man, and one did not care to undertake the operation without first giving him the option of continuing the use of the catheter if he preferred to do so. Without hesitation he decided to undergo the operation, which was performed on July 10th.

Operation.—The patient being anaesthetised, a coudée catheter was passed into the bladder, and connected with the rubber tube of a large douche can containing hot boracic lotion, and raised about a foot and a half above the patient. The distended bladder was then opened by the suprapubic route, when the lotion began to flow out, and continued to do so till the operation was completed, so that the whole of the parts concerned were continuously irrigated throughout the operation with hot lotion. Within the bladder the prostate was found considerably enlarged, forming a circular, hummocky mound round the urethral orifice, and a circular trench of bladder outside the prostate. The mucous membrane over the most prominent nummock was snipped through with scissors, and the forefinger of the left hand insinuated into the opening thus made, which readily yielded to pressure. The finger was then carried over the surface of the prostate and close to it and the fibrous bands connecting it with the

Fig. 2.

surrounding tissue (the capsule) broken down; the whole organ being meanwhile pressed up and steadied by two fingers of the right hand in the rectum. The only difficulty occurred in separating the apex of the prostate from its capsule, but this was overcome by firmly pressing up the prostate per rectum, when the apex became more accessible. No line of separation between the lobes could be made out, and it was felt that the urethra must be divided. The finger was then carried down the urethral canal, between the mucous membrane and the tumour, and the mucous membrane stripped off. With the finger outside the tumour, it was gently raised into the bladder, and then delivered with a volsellum. The haemorrhage, which had been trifling, now

became free for a few moments, but rapidly ceased under the stream of lotion still flowing through the bladder.

The catheter was left in for three days and a drainage tube placed through the suprapubic wound into the bladder. The bladder was daily irrigated with hot boracic lotion. There was a free discharge of pus for about fourteen days, when a slough about the size of a goose-quill and about $1\frac{1}{2}$ in. long came away while irrigating, after which the pus rapidly diminished and the wound was allowed to close.

The patient passed urine voluntarily while on the night-stool about the end of the third week, the first time for twelve months, and he returned home at the end of the fifth week after the operation, the urine being then voided voluntarily but at frequent intervals. Seven weeks after the operation the patient expressed himself as being quite comfortable and able to retain his water for between two and three hours.

The patient was weakened by an attack of bronchitis at the end of the first week, which was followed by an obstinate attack of diarrhoea that persisted till the end of the fourth week.

The labour of nursing and the discomfort of the patient were much relieved by the use of Sprengel's pump, which reduced the necessity of changing the bed to one twelfth of what it had previously been.

The distension of the bladder and continuous irrigation during the operation, a method I always adopt where possible was first used by the late Mr. Greig Smith. No rectal bag was used, and my experience in operating on bladder cases leads me to think that it is altogether unnecessary.

The tumour weighed $3\frac{1}{2}$ oz., was pear-shaped, flattened from before backwards, firm and elastic. The lobes were firmly united, the tissue of the tumour passing over the middle line both in front and behind, and connecting the two lateral portions into one continuous mass. The part of the tumour which corresponded to the right lobe of the prostate bulged into the urethral canal, so as to give the canal a curve to the left as it swept round this projection, and showed a marked encroachment on and obstruction to the canal.

The rupture of the prostatic portion of the urethra did not seem to produce any untoward effect except some increase in the haemorrhage, and did not in any way interfere with the introduction of the catheter, nor has the patient suffered any appreciable trouble on that account up to this time.

CASE OF BULLET WOUND OF BLADDER AND BOTH HIPS: OPERATION: RECOVERY.

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As cases in which recovery takes place after a bullet wound of the bladder are rare, the following case, in which drainage was used with success, appears worthy of record:

Private R., 1st Northumberland Fusiliers, was wounded on February 25th, 1902, in the attack upon and capture of Colonel Von Donop's convoy, near Klerksdorp, W. Transvaal.

History.—He states that he was hit at a range of about fifty yards, the convoy having been surprised; that his wounds were dressed with his first field dressing, that he lay out on the veld for two days, after which he walked into Klerksdorp—a distance of about twelve miles—and that he was admitted to the hospital there on the morning of February 28th. On March 4th he was transferred by hospital train to 18 Stationary Hospital, Krugersdorp, where he arrived in the evening. This was the eighth day after he had been wounded; his temperature was 101.8° on admission.

Condition on Admission.—The entrance wound was small, and situated 2 cm. above the right great trochanter; it was practically healed. The exit wound was situated immediately behind the left sacro-sciatic notch; it was large (2 in. in diameter), ragged and suppurating, and from it urine was leaking. There was a marked "urinary" smell; there was great inflammation of the surrounding tissues, and suppuration had extended upwards and forwards.

Operation.—After consultation with Mr. Howard Ensor, D.S.O., Lieutenant R.A.M.C.—my colleague on the surgical side of the hospital—I decided to at once drain the bladder through the perineum. Accordingly, next morning (March 5th), under chloroform, I performed Cock's external urethrotomy, and left in the bladder a soft rubber catheter, which I secured to the skin of the perineum with silk sutures. I also scraped the exit wound, and inserted a large rubber drainage tube.

After-history.—The drainage from the exit wound not being free, and the pus continuing to collect, I had to make a large counter-opening on March 6th well behind the left great trochanter, and I connected this with the exit wound by a drainage tube. The temperature rose to 102.6° and 102.8° respectively on the two evenings following the first operation; but after this, drainage being established and no urine leaking, as the urine all passed through the perineal catheter, the temperature fell to about 100° at night and normal in the morning.

Recovery.—Captain J. D. Alexander, R.A.M.C., took over charge of the case on March 14th, on which day the evening temperature was only 99° , and I am indebted to him for the following extract from the detailed

medical history sheet of the patient: "The catheter was removed fourteen days after its insertion: the patient then passed all his urine through the natural channel, and the perineal wound healed completely in about ten days. For some time after I took charge of the case the patient did well, but on June 8th, as pressure in the left inguinal region caused pus to flow from the exit wound, another operation was undertaken as follows: The exit wound was enlarged, and a piece of loose bone, 40 mm. by 8 mm., was removed from the posterior edge of the left sacro-sciatic notch. The sinuses were swabbed with pure carbolic, and a drainage tube passed through the sciatic notch into the pelvis. This was replaced by gauze six weeks later. Since that time patient's condition has improved and the sinuses are now (August 17th) closing. Patient leaves here to-day for No. 20 General Hospital on his way to England 'for a change.' He walks about with the aid of sticks, and he will not require to leave the service."

The following points are noteworthy:

1. In all bladder wounds in which urine is escaping it is not enough to empty the bladder by a catheter in the ordinary way, but it is advisable to drain the bladder by a catheter through the perineum at once, and to keep this drainage up continuously until the bladder wound is healed. (The protracted convalescence in this particular case was due to the military exigencies, which prevented immediate operation. Had the operation been done shortly instead of eight days after the injury, there would have been little or no escape of urine into the tissues and little or no suppuration.)
2. The perineal catheter completely drained the bladder, the wound in which healed within fourteen days after perineal drainage was established.
3. The perineal wound healed without trouble in about ten days; indeed, a fistula very seldom results after a Cock's perineal urethrotomy.

A CLINICAL LECTURE ON TWO CASES OF CHOREA GRAVIDARUM.

Delivered at the Extramural Class of Clinical Medicine in the Edinburgh Royal Infirmary.

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ABSTRACT.

CHOREA is one of the most distressing complications a pregnant woman can experience; and to the medical attendant and friends the spectacle of the unceasing writhings and contortions of the unfortunate patient soon becomes a nightmare. Two instances of it have been under observation in Ward 36. In one the induction of abortion was successful in arresting the malady, whilst in the other the administration of a well-known drug was followed by speedy and effectual relief. I purpose, therefore, to-day discussing these cases, and hope to show you that, serious as the complication is, it is by no means a hopeless one.

CASE I.—Mrs. N., aged 18, was admitted to Ward 36 on December 9th, evidently suffering from chorea; it was also stated she was pregnant.

History.—The patient gave a very graphic, if markedly jerky, account of the origin of her attack, and in brief it was that on December 2nd she had been suddenly startled by a rat running out of a cupboard from which she was taking dishes. She dreamt of rats during the next night, and on the ensuing day a neighbour noticed and informed her that she was suffering from irregular twitches. She had a habit of resting her hands on her hips, but became now aware that her hands would not keep still. The restlessness and jerkiness gradually got worse until the 6th, when she was seen by Dr. Lucas, of Dalkeith, and sent into the ward under my care.

Previous and Family History.—She has already had a child, which lived a month, but there was no chorea during this pregnancy, nor during her childhood. There had, however, been some recent instances of chorea among children in the village where she resides, and she had seen some of them. There is no rheumatic diathesis; she is left handed. Her father, who died ten years ago, was a heavy drinker; her mother seems at one time to have had epileptic fits, and she herself is the tenth child of a family of sixteen.

State on Admission.—In bed the patient is constantly tossing about, and tells you that she cannot control these irregular movements. She shrugs the left shoulder, works the left arm like a flail, and does the same on the right side, though less markedly. Her limbs are never at rest; she kicks the bedclothes off, grimaces, frowns, and smacks her lips. These movements cease when she sleeps, but when awake they go on unceasingly. At present she is mentally acute, notices everything, and asks questions quite intelligently. She has sometimes fits of uncontrollable laughter, and there is some difficulty in speech. A case like this, once seen, cannot be mistaken for anything else, and the whole picture of the patient's unrest and turmoil is more easy to recognize than describe. Apart from this nervous disturbance, her systems are healthy. On bimanual examination under chloroform it was ascertained she was two months pregnant.

Progress and Treatment.—We first tried the ordinary remedies—bromides, chloral, paraldehyde, morphine, trional, spray of ether to the spine—but all to little or no advantage. The patient developed delusions and became so noisy that I determined to bring on abortion and thus attempt to stop the morbid nervous condition. How abortion does this is not known, but its usual success is a fact. The stage of two months is a favourable time for induction, and accordingly it was done as follows. Nine days after admission (December 18th), the patient was chloroformed, the parts shaved and cleansed. Great care must be taken in this matter.

All antiseptic precautions were observed as to the hands, etc., of those engaged in the induction. I then inserted tupelo tents into the cervix, and twenty-four hours afterwards removed the tents, completed the dilations with vulcanite dilators, and with the fingers of the right hand in the vagina, the middle one being passed into the uterine cavity. I cleared out the uterus bimanually, washed out the uterus, and plugged the cavity and vagina with one long strip of iodoform gauze which had been kept in biniodide of mercury solution (1 in 3,000). There was no special hæmorrhage. Next day I removed the tampon and washed out the uterus, but, so far as the local result was concerned, there was no hitch, and a tear of the cervix running into the left parametrium, which happened during the dilatation, gave no trouble. The result of the induction of abortion was very marked. The chorea gradually passed off, so that by the 23rd the house-surgeon, Dr. Harlin, notes: "She was very quiet all day; movements much less marked; sleeps well." She ultimately made a perfect recovery, and left hospital on January 8th, 1902.

I need give you only short notes of the second case, which was not such a serious one as the former.

CASE II.—Mrs. K., aged 19, was admitted to Ward 36 on February 17th, 1902. She complained of uncontrollable movements, and stated she was at the mid-term of pregnancy. She looked a soft ill-developed woman, and the choreic movements came on six months after marriage, the apparent cause being a quarrel with her husband. The choreic movements soon became well marked, but not of a violent type. She grimaces, smacks her lips, lifts her eyebrows, and so on. Her speech is little impaired, but she laughs in a meaningless manner. Her right arm and leg are more affected than the left.

Treatment.—In this I put the patient on large doses of antipyrin. The favourable effect of antipyrin on the chorea of children has been shown by Comby,¹ and it accordingly occurred to me that it would be advisable to try its effect in chorea gravidarum. So far as I know this drug has not been employed in this special condition. In the ordinary chorea of children large doses are given, but care must be taken to see that the kidneys act efficiently. I accordingly gave this patient sodium bromide and antipyrin, 15 gr. of each, four times a day. This was begun on February 20th, 1902, and continued till March 6th, when the sodium bromide alone was given. The beneficial effect of the drugs was soon manifest, and she left the hospital quite well.

COMMENTARY.

Preliminary.—By chorea gravidarum we mean that during pregnancy the patient has irregular spasmodic movements—a want of co-ordination of voluntary movements, with muscular and mental weakness.² The part of the nervous system involved is the motor cortex and not the spinal cord. The immediate cause of its disturbance is unknown, but, as these cases show, pregnancy, a neurotic condition, or heredity and some fright or nerve irritations predispose. McCann discusses this well.

Statistical.—The main facts as to chorea gravidarum are well stated in special articles by Robert Barnes (1869), McCann (1891), and Buist (1894-5).³ The statistics of the last author are the most recent. In 214 patients there were 273 attacks of chorea associated with pregnancy. The mortality was 1 in 5; in 7 the chorea became chronic, 60 cases recovered before delivery, while 90 recovered after labour. Insanity as a result was infrequent. Fifty-nine per cent. of the cases were primiparae.

Passing now to the more immediate comment afforded by our cases, I wish to draw your attention to its therapeutics: (1) The induction of abortion; (2) the drug treatment.

(1) **Induction of Abortion.**—In the first case you would note that dilatation preceded the emptying, and that all antiseptic precautions were employed. The mere passage of a sound may not only be insufficient but is highly dangerous, as it may probably introduce a septic element, and any delay in this being expelled may lead to serious sepsis. When once dilatation is completed—in eighteen to twenty-four hours—you should clear out bimanually, as your finger has a touch the curette lacks. There is no harm, of course, in supplementing the finger with the curette. The good effect of inducing abortion was soon manifest in the first case, and, I have no doubt, saved the patient's life. How it exactly acts is at yet unknown.

(2) **The Drug Treatment.**—This cannot be considered satisfactory, and is open to the comment that we are employing drugs of whose action we know little on a disease of whose pathology we know infinitely less. Practically, the drugs employed are sedatives—chloral, trional, paraldehyde, conium, the bromides, morphine, chloroform, and so on. Probably paraldehyde and chloral or trional are the best. As I have mentioned, I used antipyrin, and it seemed to cure the second case. Remember, however, that this is only one case, it was a mild one, and that all we can say is that it is worth a more extended use in such cases to settle its value. By a mistake sodium bromide was given with the antipyrin at first, but this does not seem to me to specially vitiate the conclusion that antipyrin is worthy of further trial in such cases.

REFERENCES.

- ¹ Arch. de Méd. des Enfants, April, 1899. ² See McCann, p. 428. ³ R. Barnes, Lond. Obstet. Trans., 1869; McCann, Lond. Obstet. Trans., vol. xxxiii; R. C. Fuist, Edin. Obstet. Trans., 1894-95.