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friends in her temporary place of abode. Besides, at her own home, she inhabited a presumably healthy house, situated in a salubrious and high-lying district of Scotland. The difficulty that had all along attended the cases was, therefore, not removed by this circumstance, nor was it even lessened by the fact, that when the young lady returned from her visit to England, and once more occupied her old quarters, all her ear troubles began gradually to re-appear; in truth, after being at home for a few weeks, she became just as deaf as ever.

In order to be brief, I cannot enter into all the details of the process by which we came to know that the house, which was a fine old country mansion, had been built, as many of these houses were, without the smallest regard to the drainage of the site upon which it rested; so that the walls for several feet all round were constantly soaked with the damp, drawn from the undrained soil upon which they were built. In this case, as the family could not remove from this house without removing altogether from the district, and as this latter step was not to be thought of, much less undertaken, the plan was hit upon of causing the sisters, each in turn, to spend four months of the year away from home at the healthier residences of their friends. The most gratifying success has hitherto attended this arrangement, for they are now nearly quite well, and almost perfect in regard to their hearing.

These facts, and the histories of the cases that I have related, are typical of numerous similar ones that have come under my own notice, most of them indeed drawn from the inhabitants of large towns and cities, but not a few from among the dwellers in fine old mansions in healthy country districts.

ARTICLE VIII.—*On Retention of Urine in the Female.* By J. HALLIDAY CROOM, M.B., M.R.C.P.E., Physician Royal Maternity Hospital, Lecturer on Midwifery, School of Medicine, Edin.

(*Read before the Obstetrical Society of Edinburgh, 9th January* 1878.)

ALTHOUGH vesical troubles of various kinds are very common in the female, yet a complete retention of urine requiring the use of the catheter is, apart from labour, not of very frequent occurrence. Retention is met with oftener in the female than the male. Its causation in the sexes accounts for this. In the male the causes leading to the condition are comparatively limited: in the female there is a much wider range. In the male retention of urine points to some morbid condition in the urethra or bladder: in the female it indicates usually some disease, injury, or displacement of neighbouring organs; while stricture of the membranous or spongy portion of the urethra, enlargement of the prostate, presence of a calculus, or some disease of the nervous system, form by far the most promi-

nent group of causes obstructing the flow of urine in the male. It is a great clinical fact, that retention is produced in the female by causes altogether external to the bladder. Although, for the relief of the urgent symptoms, passing a catheter is sufficient, yet it is important clinically to remember that retention is but a symptom, and points to some condition within the pelvis, for the diagnosis of which a vaginal examination is necessary. In inquiring into the causes leading to retention of urine in the female, it is convenient to look at two cases illustrating complete retention from a well-recognised cause.

CASE 1.—*Retroversion of Gravid Uterus. Retention of Urine.*

Mrs B., æt. 35, the mother of five children, while alighting from an omnibus, slipped, and fell heavily on the ground. Beyond the bruise she felt no great discomfort at the time. On reaching home, a distance of five minutes' walk, she began to complain of aching in the back and loins, and general pelvic distress. Before going to bed, six hours after the accident, she attempted to pass water, but succeeded in voiding only a few drops. During the night she suffered much from tenesmus, and repeated futile attempts at micturition. Next morning she was considerably worse,—pain in belly, back, and thighs, pressure, tenesmus, sickness, thirst, and vomiting. In the evening of the same day she was seen by one of my dispensary pupils, who, thinking she had inflammation of the bowels, ordered her turpentine stupes and a large opiate. At 10 A.M. the following day I saw her, and found her pulse high, skin hot and dry, lower portion of abdomen tense, tender, and dull on percussion from pubes to umbilicus. She had not passed any urine for nearly fifty hours. She said she believed herself to be three months pregnant. On examination per vaginam, I found the enlarged fundus uteri occupying the hollow of the sacrum, and the cervix uteri, turned upwards and forwards, could be reached with difficulty. It was lying behind the pubes, pressing firmly against the urethra. A gum-elastic catheter was passed, not without some little trouble, owing to the irritable condition of the patient, and the orifice of the urethra being dragged considerably backwards and upwards by the ascending cervix. Two quarts of highly coloured, very ammoniacal, urine were drawn off. By very gentle pressure on the fundus with two fingers per vaginam, the dislocation was easily reduced; indeed, the fundus slipped upwards and the cervix downwards into its natural position in the vagina almost spontaneously. The urine was again drawn off in the evening. Next day I introduced a Hodge pessary, telling the patient to retain it for a month. Patient had no further trouble, and was delivered at term.

The case was obviously one of retroversion of the gravid uterus, and accompanying retention of urine resulting suddenly from a fall.

CASE 2.—*Retroversion of Gravid Uterus. Retention of Urine. Abortion.*

Margaret R., æt. 35, consulted me in August of last year about a constant pain in her back and occasional difficulty in passing her water. In other respects she was in good health. Her menstruation, which had been regular previously, had been suppressed for a month. She had been delivered of a child ten years before at full time. On examination per vaginam I found the vagina capacious, the rectum packed with hardened fæces, and the cervix, which was that of a multiparous woman, directed forwards. I felt the fundus uteri directed backwards and enlarged. Owing to the loaded condition of the rectum the examination was somewhat unsatisfactory. I therefore asked the patient to return the following day, after having taken a purgative dose of medicine. She did not, however, return to see me, and I heard nothing of her until I was asked to see her in September, a month later. I found her in bed, moaning heavily, with a high pulse, complaining of bearing down, tenesmus, and much pain in the back. She had been unable to pass water for two days. She said she had suffered from slight attacks of retention since last I saw her, but these had always passed off until now, when her suffering had become so great that she was obliged to send for me. On examination I found a distinct tumour, reaching from pubes to umbilicus, which, from its tenseness, dulness on percussion, tenderness, and fluctuation, was evidently the bladder. The vagina was blocked up by a round, regular, doughy tumour, in front of which, behind the pubes, I could barely feel the edge of the os uteri. From the position of the os, and the character of the vaginal tumour, as well as the history of the case, the diagnosis arrived at was gravid retroversion, and consequent retention of urine. The patient admitted the possibility of pregnancy. A large quantity of dark-coloured urine was drawn off with a gum-elastic male catheter. On making a second examination, the os could be more easily reached. I tried at the same time to reduce the dislocation, but failed. In the evening of the same day, Dr Andrew was kind enough to see the patient with me, and while he kept her fully under the influence of chloroform, I succeeded in reposition in the ordinary way. A Hodge pessary was introduced next morning. A fortnight later the patient aborted.

The two cases just recorded are, I believe, typical examples of the two forms of gravid retroversion. They both occurred at the end of the first trimestre of pregnancy, the usual time for the development of the characteristic symptoms. The subjects, as is generally the case, were both multiparous women. In both, the urgent symptom was retention of urine. They differed, however, very notably in the manner in which the displacement was produced, for, while the first was sudden and accidental in its onset, the second was slow and gradual. In the first, the sudden fall

from the omnibus was evidently the determining cause of the dislocation. The patient, on attempting to alight while the vehicle was still in motion, fell heavily on the ground, and in the roomy pelvis of a multiparous woman, the result of the shock might be such as to force the fundus uteri, enlarged and overweighted by an ovum, under the promontory into the hollow of the sacrum. The cervix in consequence would rise upwards and forwards, and press on the urethra or neck of the bladder. In the second case the retroversion was gradual and progressive. The fundus, having probably a backward inclination to begin with, sank deeper into the pelvis as the advancing pregnancy increased its weight and size, and with the gradual depression of the fundus there was, of course, a corresponding elevation of the cervix. The pathology of pregnancy presents few more interesting subjects than retroversion of the gravid uterus, and the cases just recorded suggest many interesting points worthy of consideration; but the present paper is concerned with but one symptom, and that unquestionably the most prominent, viz., retention of urine. What relation, then, does retroversion of the gravid uterus bear to the retention of urine? Is it cause or effect? That the one forms an important factor in the production of the other, there can be no doubt. Upon this point there has been, and still is, considerable difference of opinion among obstetricians. For while Denman,[1] Merriman,[2] Paul Dubois,[3] Danyan,[4] Cazeaux,[5] and more recently Depaul,[6] regard retention as a frequent cause of retroversion, other authors, — Hunter,[7] Moreau,[8] Burns,[9] Lohmier,[10] Spiegelberg,[11] Leishman,[12] and Playfair[13]—attribute the retention to the retroversion. Those who hold the first of these theories suggest as an explanation of the mechanism of the retention, that the bladder, becoming distended, forms a point projecting into the interior of the pelvis, which gradually, as it enlarges, presses the uterus backwards. The degree of retroversion will be, therefore, in direct proportion to the distention of the bladder. On the other hand, those observers who find in the retroversion the cause of the retention explain its occurrence in one of two ways, either that the uterus became suddenly retroverted as a result of a fall or injury,—the retroversion of Hunter[14] and Denman,[15]—or else adhere to the explanation of Tyler Smith.[16]

[1] *Introduction to Midwifery*, 1805, page 103.
[2] *A Dissertation on Retroversion of the Womb*, 1810.
[3] Depaul, *Leçons de clinique obstetricale.* [4] *Ibid.*
[5] *Theoretical and Practical Midwifery*, Amer. edit., p. 533.
[6] Depaul, *Leçons de clinique obstetricale.*
[7] *Medical Observations and Enquiries*, vol. v. p. 389, 1776.
[8] Depaul, *op. cit.* [9] *Principles of Midwifery*, p. 282, 1837.
[10] Schroeder's *Manual of Midwifery*, page 122.
[11] *Lehrbuch der Geburtshulfe*, page 283.
[12] *System of Midwifery*, page 266.
[13] *Science and Practice of Midwifery*, page 235.
[14] *Op. cit.* [15] *Op. cit.* [16] *Manual of Obstetrics*, 1858, page 127.

To Dr Tyler Smith belongs the credit of having first pointed out that retroversion of the gravid uterus is simply pregnancy taking place in a previously displaced organ. In either case, the retention is caused by the direct pressure of the cervix on the urethra, increased by the tenesmus and downward pressure of the intestines. If the cases just recorded prove anything, they prove that the retroverted uterus was the direct cause of the retention. In the first case, the patient had no difficulty in passing water previous to the fall which caused the retroversion. It was only after the dislocation had lasted some hours that symptoms of retention set in. It is matter for conjecture whether the bladder was full at the time of the fall or not. If it were, it would no doubt increase the backward inclination of the uterus in early pregnancy, and a dislocation from a fall more easy. It is, however, a fact that until the occurrence of the fall, which either aggravated or caused the retroversion, there were neither difficulty in passing nor retention of urine. In the production of this sudden force, retroversion plays, if any, a very secondary rôle. In regard to the gradual form of retroversion, of which Case 2 is a good example, the uterus, when I examined it in the early weeks of pregnancy, was distinctly retroverted. The strong presumption is, that the uterus was retroverted before pregnancy, and that the enlarging ovum and uterus, in the early weeks of pregnancy, caused difficulty in micturition. As the uterus enlarged towards the end of the third month, this difficulty became aggravated into complete retention. From the frequency with which retroversion of the unimpregnated uterus is met with in practice, as a reference to Nonat's[1] table amply shows, it might be urged that gravid retroversion would be much more common. It is a fact, however, that this displacement acts as a barrier to impregnation, and sterility is therefore common among women who thus suffer. It thus appears probable that when by accident conception does take place in a retroverted uterus, the dislocation is aggravated, and only recognised when the increasing bulk of the imprisoned organ causes retention of urine. No doubt the fundus uteri enjoys a considerable range of motion in the direction from pubes to sacrum, influenced to a certain extent by the alternate filling and emptying of the bladder. It would seem natural that so long as the bladder kept distending antero-posteriorly, there would, of course, be a corresponding backward displacement of the uterus. It must, however, be remembered that when the bladder distends beyond a certain limit, its vertical diameter becomes increased beyond and at the expense of the transverse. The result is that the utero-vesical folds are shortened and drawn up, and the anterior wall of the uterus is closely applied to the posterior wall of the bladder. In Scanzoni's experiments on the dead subject, quoted in Leishman's *System of Midwifery*, p. 267, it was found, if the round ligaments

[1] *Mal. de l'uterus*, p. 416.

and utero-vesical duplicature were cut, and the bladder filled, it was easy to induce an amount of retroversion corresponding to the quantity of fluid in the bladder. When the ligaments and folds just alluded to were left untouched and the bladder distended, they were greatly put on the stretch, and consequently the attachment of uterus to bladder was much more firm than when the organ was empty.[1] Again, when distension of the uterus takes place after labour, the position of the uterus is considerably interfered with. As the bladder rises into the abdomen, it carries with it the uterus, so that the fundus uteri can be felt above the umbilicus. When the catheter is introduced and the urine drawn off, the uterus descends to its normal post-partum position in the pelvis. Indeed, it is the rule that when the uterus is found high up, the bladder should be examined. If the uterus be retroverted before conception, then the simple increasing size of the organ is sufficient to cause the retention of urine. If, however, a uterus with only a slight inclination backward becomes completely retroverted during pregnancy, it is more likely to be brought about when the bladder is empty, because in that case the ligaments are relaxed and the downward pressure of the intestine, especially when loaded, acts with greater advantage on the enlarged uterus than when the bladder is full and the ligaments tight.

Acting much in the same way as a gravid retroversion, that is, by displacing the cervix against the urethra, and so mechanically interrupting the flow of urine, retention may be the result of retroversion of the uterus from a fibroid tumour.

Mrs R. was, late on Sunday, January 1877, complaining of great pain in lower part of abdomen, inability to pass water, and strong tenesmus. During the day and previous night she had made many ineffectual attempts to pass water, but failed. Except a few drops, no urine had passed since the previous Friday night (forty-eight hours). On examining the abdomen, I found a tense, smooth, dull tumour, extending from the true pelvis slightly beyond the umbilicus. *Per vaginam.*—There was a hard, round, immovable mass filling up the vagina; beyond it, anteriorly, could be felt the posterior lip of the cervix uteri, jammed firmly against the urethra. The introduction of the catheter relieved the patient of a large quantity of ammoniacal urine, and at the same time permitted a more careful examination of the condition of matters within the vagina. It is unnecessary for my present object to do more than mention, from her profuse menstruation sterility, from the position, size, and consistence of the tumour, as well as the enlargement of the uterine cavity, there was little room for doubt as to the nature of the case, viz., retroversion of uterus from a fibroid tumour in the posterior wall, and consequent retention of urine. The patient said that for some months past, more especially at her menstrual periods, she had suffered from some

[1] Burns records experiments on the dead subject with same result.

difficulty in passing water, but never until now had there been complete retention. Some days afterwards, while the patient was in the genu-pectoral position, I pushed the tumour well up to brim of pelvis, and retained it pretty well in position by means of a Hodge. From that time till now I have steadily pressed ergotine subcutaneously, and removed the Hodge at intervals. There has been no return of retention and the menorrhagia is considerably lessened. Examples of retention from this cause are, as a result of the mechanical pressure of a fibroid tumour, not uncommon. Fibroid tumours frequently cause retroversion of the uterus. The causation of the retention is exactly similar as in gravid retroversion. The fibroid tumour in the posterior wall of the uterus had gradually increased the weight of the fundus, and given it a backward inclination, and with the gradually increasing bulk of the fibroid the retroversion had become more and more pronounced, until in the course of months or years the uterus had reached a size corresponding to a three months' pregnancy. As the fundus uteri sank deeper into the pelvis, the cervix was pushed against the urethra, causing at first some difficulty in micturition. As the bladder distended it drew the cervix upward until it was beyond the reach of the examining finger. Then, partly from the increased pressure on, and partly from the greater stretching of, the urethra, the retention was complete. It is worthy of remark, that the difficulty in passing water during the previous months, as well as the complete retention, occurred at menstrual periods, when the uterus and fibroid would be swollen from local determination of blood and from the increased weight, the fundus would be deeper in the pelvis, and the cervix jammed more firmly against the urethra.

The relief afforded by the catheter in a case such as this is only temporary; for the permanent cure of the retention it becomes necessary to attempt a more convenient adjustment of the obstructing mass. If there are no adhesions, and the tumour be neither too large nor too firmly jammed in the pelvis, it can often enough be pressed upwards to the brim by a manœuvre similar to that employed for reducing a similarly dislocated gravid uterus. If retained in this position by some modification of the Hodge pessary the fibroid will increase upwards in the direction of least resistance, and the urethra and neck of bladder be relieved from pressure. Sometimes, however, such manipulation is impracticable, as in the following case:—J. H., æt. 38, single, has been for months under my care at the Western Dispensary. She requires from time to time to have the catheter to relieve her of retention of urine caused by the pressure of a large fibroid mass firmly fixed in the pelvis. The true pelvis, as well as the abdomen, as far up as three inches beyond the umbilicus, and to within ½ an inch of the crista ilii on either side, contains a large, solid, irregular mass of fibroids, one of which has sunk deep down into the pelvis, until it almost

rests on the perineum. It is just possible to reach the posterior lip of the cervix. The girl suffered from profuse menorrhagia. In such a case it is impossible to remedy the position of the pelvic mass, and the catheter affords the only relief. The patient has had ergotine administered hypodermically for some months, and of late her hæmorrhage has been markedly diminished, and her attacks of retention less frequent.

Retroversion of the uterus from a fibroid tumour is generally slow in its development, but it may take place suddenly, as in the case mentioned by Grailly Hewitt,[1] when the uterus with its contained fibroid became suddenly retroverted from a fall, and retention of urine to an enormous extent was the result,—the mechanism both of the retroversion and retention being much the same as in the first case I have recorded of gravid retroversion.

(*To be continued.*)

Part Second.

REVIEWS.

A Handy-Book of Forensic Medicine and Toxicology. By W. B. Woodman and Charles M. Tidy. Pp. 1205. London: J. & A. Churchill: 1877.

Lectures on Medical Jurisprudence. By Professor Ogston, Aberdeen. Edited by Francis Ogston, Jun., M.D., Lecturer on Practical Toxicology. Pp. 663. London: J. & A. Churchill: 1878.

A work on Medical Jurisprudence is valuable to the profession either as containing the record of the mature experience of the author, or the results of extensive reading. In other departments of medical science, it is comparatively easy to acquire a certain amount of practical experience. A hospital or dispensary physician or surgeon gifted with ordinary powers of observation cannot fail in a short time to collect a considerable amount of facts bearing upon practice; but the field of observation of the medical jurist is necessarily limited. Cases which interest him are few and far between, unless he devotes himself specially to this branch of his profession; and it is well known that even in large centres of population, medical jurisprudence alone does not pay. The pecuniary rewards it brings are not large, and the contests of medical opinion in the witness-box are not productive of goodwill.

[1] *Diseases of Women*, 3d edition, p. 135.

There is marked difficulty in swallowing, the stoppage being referred to a point corresponding to the manubrium sterni. Respiration in the right lung is weak and jerking. Sibilant and sonorous râles are heard all over the chest; the cough is frequent; inspiration is attended with a marked stridor; the voice is hoarser than it used to be.

The heart is of normal size, the aortic second sound accentuated. The radial pulse is 84, regular, the right somewhat stronger than the left. The carotid pulsations are equal on the two sides. She sleeps very badly because of the pain. She complains of a constant roaring in the right ear. Hearing on the right side is not so good as it used to be. She suffers occasionally from frontal headache.

The other organs and systems are normal.

Treatment.—Thirty grains of the iodide were ordered three times a day, and she was confined to bed.

Subsequent progress of the case.—After three or four days she was free from pain.

On 29th May she was obliged to go home to attend upon her husband, who was ill. At the time of her discharge she said she felt quite well. There had been no pain since the date of the last note. The prominence was less marked, but the pulsation was still strong and liquid-feeling. Dysphagia and cough had gone.

(*To be continued.*)

ARTICLE IV.—*On Retention of Urine in the Female.* By J. HALLIDAY CROOM, M.B., M.R.C.P.E., Physician Royal Maternity Hospital, Lecturer on Midwifery, School of Medicine, Edin.

(*Continued from p.* 926.)

AMONG the causes external to the bladder mechanically interfering with micturition may be ranked nearly all the swellings to be felt through the posterior fornix vaginæ, lying in the retro-uterine *cul de sac;* for example, an ovarian tumour, an effusion, the result either of para- or peri-metritis, an abscess and extra-uterine fœtation, or, as in the following case, from the sudden effusion of blood in hæmatocele.

In February 1878, I was asked to see a patient, æt. 32, a lady, on her second wedding tour. I saw her early in the forenoon, and found her suffering from much pain in the umbilical region, of a gnawing, twisting character. There was no increase of pulse or temperature. The pain was relieved on pressure. A menstrual period was just due. Rest and a full opiate were ordered. At 11 P.M. the same evening she was in a state of collapse, extremities cold, pulse very feeble and rapid, vomiting. On examining the abdomen a distinct fulness was felt all over the brim of the pelvis,

but especially in the right iliac fossa; per vaginam there was a soft doughy bulging in the space of Douglas. During the night Professor Simpson was kind enough to see the lady in consultation, and confirmed the diagnosis of a hæmatocele. The following morning the swelling in the retro-uterine space was more marked, of a firmer consistence, and extended on either side of the uterus. The uterus was pressed upwards and forwards against the neck of the bladder and was fixed. The same evening the patient was unable to pass her urine, which had accumulated to a considerable extent. The catheter was used. The causation and management of the hæmatocele are no concern of the present paper. The progress of the case is alone of interest. Without being tedious, it was simply this, that within a fortnight all trace of the hæmorrhage had entirely disappeared. The swelling in the space of Douglas was the last portion of the effusion to be absorbed. Retention of urine lasted but for the first three days, when the post-uterine tumour was largest, and the cervix uteri consequently most firmly pressed upwards and forwards against the neck of the bladder.

Although the mechanical pressure of displacements or tumour just mentioned forms, apart from labour, the most common cause of retention of urine, yet causes acting reflexly are more frequent, perhaps, than appear at first sight. Take, for example, the following case :—

Miss B., æt. 55, has been at various periods under my care for trifling ailments. In January 1876, she told me that for some months she had great pain on passing her water—so much so that occasionally she had been unable to pass it at all, except when sitting over very hot water. When the urine did pass she felt as if a red-hot wire were in the urethra. The urine passed in jerks and in a small stream. I explained that a local examination was absolutely necessary. To this nothing would induce her to submit. Some weeks afterwards I was summoned to her one evening, and found her suffering much from a distended bladder. She had not passed any urine for two days. The bladder could be felt distinctly enlarged through the abdominal walls. The patient said that all the remedies which had hitherto been useful, such as sitting over steam, warm baths, and warm fomentations had on this occasion failed. On introducing my finger to the meatus with the view of passing the catheter the patient screamed and drew herself up in bed. A visual examination was insisted on, and obtained with much difficulty. Round the meatus urinarius the red, vascular, sensitive excrescence characteristic of the urethral caruncle was observed. The little tumour, which was about the size of a small cherry, entirely encircled the meatus. The catheter was introduced and the water drawn off. The following day, while the patient was under chloroform, I snipped off the caruncle and cauterized its base with a red-hot knitting-wire. I saw the patient lately, and she has not again suffered from reten-

tion. In such a case the retention was not due to mechanical obstruction to the passage of the urine, but partly due to a dread of allowing the urine to come into contact with the exquisitely tender surface of the caruncle, and partly to the irritable little body causing reflexly a spasmodic stricture of the urethra or neck of bladder. These urethral caruncles are, of course, recognised as a frequent cause of distress during micturition, but they are rarely alluded to as causing complete retention. Sir James Simpson[1] mentions the case of a girl in his ward in the Hospital who had a caruncle as large as a cherry. In her case the pain she felt on passing water was so severe that she used to retain it in the bladder for twelve hours at a time, and she looked forward to the period when the bladder must be emptied with the utmost horror. Probably in the case I have just related the retention was at first voluntary, until the distension became so great that the patient lost control over the viscus.

Dollmayr[2] mentions a form of retention in subjects of advanced age, in which, owing to continued inflammatory action set up in the mucous membrane of the urethra, polypoid thickening of the membrane takes place. In an extreme case of this kind he has found the urethral meatus surrounded by little ruddy eminences, which bleed freely when touched. He asserts that this condition is only observed in those who have long ceased to menstruate, and is very gradual in its onset; the urine being voided with increasing pain and in a gradually diminishing stream. Nitrate of silver or sulphate of copper have in his hands been completely curative.

The sympathy between the urinary organs and the lower bowel during the rectal excitement due to piles is a matter of common observation. It is seldom that hæmorrhoids cause complete retention. I believe that some of the cases of retention of urine after an ordinary labour are due entirely to reflex action of the piles, swollen, stretched, and torn during the second stage of labour. Piles and fissure of the anus are certainly much more common in women than men, and perhaps the pressure of the head on the rectum may be a more frequent cause of post-partum retention of urine than is commonly recognised.

The retention of urine occasionally met with in lying-in women, when it occurs immediately after labour, is no doubt in many cases due to paralysis of the bladder, or direct contusion of its neck, the result of a tedious labour; sometimes also to the development of inflammatory action in its neighbourhood. In many cases, however, of normal labour neither paralysis, contusion, nor inflammatory action will account for the retention, for none of these are present. In the cases which have come under my own observation, the retention has occurred most frequently

[1] "Clinical Lectures on Diseases of Women," *Medical Times and Gazette*, 2d April 1859.

[2] *Medicinisch-chirurgisches Centralblatt*, No. 40, 1876.

in primiparæ, and seems to occur just as often after a normal labour as after a tedious or instrumental one.

In these cases of natural retention of urine where labour has taken place it has always been associated with a more or less extensive rupture of the perineum. It appears very probable, therefore, that the raw, torn perineum may reflexly cause retention of urine much in the same way as fissure of rectum or hæmorrhoids. The following case seems to be particularly instructive on this point:—In February 1875 I attended Mrs I. in a tedious labour, resulting from a face presentation. Forceps were used. Owing to the non-rotation of the chin considerable difficulty was experienced. The perineum was torn up to, but not through, the sphincter. It was carefully stitched immediately on delivery, and united almost completely. There was complete retention of urine, requiring the use of the catheter for five days. Her next labour took place last June. It was rapid, almost precipitate. The patient was delivered before she could undress and get into bed. The point of union of perineum gave completely up to the sphincter. It was not stitched, and united very slowly. There was retention, requiring catheter for three days. The comment is obvious—while the contusion and pressure of a tedious face case may have been the cause of the retention in the first case, no such cause can be assigned for the retention in the second. In the absence of contusion, paralysis or inflammative reflex irritation of the torn perineum seems a very probable explanation. Dr Macculloch, one of the present residents in the Maternity Hospital, has noted for me the cases where retention of urine has occurred after perfectly normal primiparous labour during the past two months. Five such have occurred, and in each there has been a more or less extensive rupture of the perineum. Indeed, the duration of the retention seems to be in proportion to the extent of the rupture, for while in four cases the rent varied from $\frac{1}{2}$ to $\frac{3}{4}$ inch, the retention lasted two days; in the fifth, where retention lasted for a week, the rent was to the verge of the anus.

I have not met with retention of urine requiring the use of the catheter in hysterical women. Perhaps the less this instrument is used in such women the better. It may be that the following case had an element of hysteria in it; certainly it taught me a useful lesson.

Helen H,. æt. 30, unmarried, was placed under my care in connection with a charity, for which I act. She was supposed to be suffering from an ovarian tumour. She had led a very dissolute life—in fact, had been for some years little better than a common prostitute. She had been twice in the Lock Hospital, had aborted frequently, but never had a child at term. On examination I found the abdomen distended by a regular, even, dull tumour, extending from the pelvis to an inch beyond the umbilicus. It was inclined

slightly to the left side. Patient said she had noticed it on the left side six months before, and that it had gradually increased since that date. Per vaginam there was considerable leucorrhœa and a large, probably syphilitic, erosion, including both lips of cervix uteri. The patient's urine, which was very scanty, was examined, and found to contain albumen. From the patient's history, and the account given to me by the matron of the institution, as well as my own examination, I arrived at the conclusion that the patient suffered from an ovarian cystic tumour. I wrote a note to the lady who sent her in to that effect, recommending that she should be placed under Professor Simpson's care in the Hospital. Two days after I was sent to see her, and found her suffering much pain in back and loins, and the tumour increased in size and tender. What further diagnosis I might have arrived at I cannot say. Fortunately for me, the patient asked me to draw off her water with a catheter. This I did, and relieved her of several pints of very turbid, highly offensive urine; at the same time the abdominal swelling gradually and entirely disappeared. She afterwards calmly informed me that she had been under the necessity of having a catheter passed repeatedly both in the Edinburgh and Glasgow Infirmaries. Probably the sore on the cervix may have had something to do with the retention to begin with. My conviction is that the woman retained her urine for the purpose of deception. She was well up in tumours of various kinds, and had frequently received charity as a sufferer from an internal tumour. Now and then she overdid the retention, and had to go to hospital to have it relieved. Cases have occasionally occurred in which the distension of the bladder has been mistaken for something else. The present case affords a good illustration of making sure of the condition of the bladder before settling the nature of a similar tumour. It further serves to show that the bladder may be partially emptied from time to time, and yet the retention remain. Though in this patient the retention was so far voluntary, and done with intent to deceive, yet in some cases the dribbling away of urine from an over-distended bladder may deceive the patient. How often is this the case during labour.

Retention of urine from actual stricture of the urethra is, so far as I know, extremely rare, probably, no doubt, owing to the relative shortness and great dilatability of the female urethra. Dr Adams[1] mentions a case occurring in the practice of Mr Curling, in which puncture of the bladder was necessary. The disease had arisen from the contusion to which the urethra had been subjected during a tedious labour twenty-eight years before. Sir Benjamin Brodie[2] met with a case of stricture of the female urethra which would not admit the finest probe.

[1] *Cyclopædia of Anatomy and Physiology*, vol. iv. part ii. p. 1266.
[2] *Ibid.*

Most of us are familiar with a form of partial, sometimes complete, retention, resulting from the impaction of a calculus in the urethra, easily enough diagnosed, and, from the dilatability of the tube, as easily removed.

It would thus appear that the causes leading to retention of urine in the female may be thus conveniently grouped:—

1. Injuries or contusions during labour acting directly or by subsequent inflammations.
2. Pressure of displacements or tumours acting mechanically on urethra or neck of bladder.
3. Injuries or growths acting reflexly.
4. Diseases of nervous system.
5. Direct obstruction within the tube of the urethra, as from stricture or foreign bodies, such as a calculus.

In drawing this paper to a conclusion there are one or two points which seem worthy of note.

1. In all cases of retention of urine a vaginal examination is necessary.
2. A gum-elastic male catheter of medium size, without the stilette, is the best form of instrument to employ.
3. In retention from displacement it is important to remember the altered position of the urethra. In retroversion of the gravid uterus the vagina is drawn upwards and forwards, the meatus is drawn upwards, and the direction of the upper part of the canal is backwards and downwards.
4. When any difficulty exists in accounting for the retention a visual examination should be insisted on.
5. It is a safe rule, before giving a definite verdict on any pelvi-abdominal tumour, to empty the bladder.

ARTICLE V.—*Notes of a Case of Extroversion of the Bladder and Epispadias.* By DR HENRY W. LAING, Bridge of Earn.

MRS E., æt. 42, on 21st February, gave birth to a male child having extroversion of the bladder and epispadias. The parents are both healthy, and this is their tenth child; one died in infancy, the other eight are reported to be healthy. The mother enjoyed very good health during the earlier months of pregnancy, but not quite so good during the later months.

The child was born at the full time, and, with the exception of this rare abnormality of the uro-genital system, appears well developed. A tumour projects from the hypogastric region, and extends from the umbilicus to where the symphysis pubis ought to be,— measuring transversely one inch and a quarter, and about an inch vertically. The tumour, which forms an irregular oval slightly flattened on the surface, projects about half an