Remarks

ON

THE TREATMENT OF RETROVERSION OF THE GRAVID UTERUS.*

By G. ERNEST HERMAN, M.B., F.R.C.P.,

Consulting Obstetric Physician, London Hospital.

BEFORE considering the treatment of retroversion of the gravid uterus we have first to ask why it needs treatment. It needs treatment because it causes retention of urine. If it is not treated the patient will very likely die from the effects of retention of urine. The most common mode of death is by extension of the inflammation from the bladder up the ureters to the kidneys, producing what is known as "surgical kidney." This differs not from surgical kidney produced by retention independently of pregnancy. It may lead, like other forms of destructive kidney disease, to uraemia. Thus the patient may die from the effects of the displacement, weeks or months after it has been replaced.

It is not usual for cystitis to bring about death after the retention has been relieved, but the patient may die from hectic fever due to the condition of the bladder and kidneys, the bladder symptoms being the more conspicuous. In some cases there is exfoliation of the mucous membrane either as a complete sac¹ or in large pieces. This has been called "gangrenous" cystitis, "pseudo-membranous" cystitis, and "diphtheritic" cystitis. The latter term is a bad one, because this condition has nothing to do with the disease produced by Loeffler's bacillus. In some cases in which a membrane cast off from the inside of the bladder has been examined microscopically, it has been found to be not simply mucous membrane, but to contain also some muscular fibre. The membrane is generally encrusted with phosphatic salts so as to be rough, sometimes almost like sand paper.

Exfoliative cystitis is due to acute and prolonged retention of urine, and retroversion of the gravid uterus is its commonest cause. Next to that in frequency comes retention following delivery. It may occur in men from enlarged prostate, or other cause of retention. One of the specimens in the Museum of the Royal College of Surgeons was an exfoliation removed by Mr. Liston by suprapubic incision from the bladder of a man, in whom retention had occurred as a result of injury. Exfoliation has been produced experimentally in dogs by causing retention of urine. There is a specimen in the museum of Guy's Hospital in which the vesical mucous membrane is raised into nodular elevations by blood effused beneath it; this probably is the first step towards its complete detachment. It has been suggested that the pressure of the urine on the stretched mucous membrane may cause gangrene, but the cutting off of its blood supply by haemorrhage beneath it is a more satisfactory explanation. On *post-mortem* examination the mucous membrane has been found detached everywhere except at the neck of the bladder, so that it seems that it is here last separated, and that detachment begins at the fundus, the place farthest from the blood supply.

Recovery may take place after exfoliation of the vesical mucous membrane, but we know as yet nothing about the reparative process in the bladder after sloughing of the mucous membrane. In some of the cases the bladder has remained contracted. I know not whether this is the rule, but should think it probable.

Hurry² observed that for several weeks after exfoliation the urine contained a quantity of albumen larger than could be accounted for by the amount of pus, while there was no sign or symptom of Bright's disease. He suggests that there may be a serous exudation from the surface left bare by the exfoliation. This has been observed also in the London Hospital.

Exfoliative cystitis is not more painful than other kinds of cystitis. But instead of tending to recovery after retention has been relieved (as does cystitis which has not lasted long enough for exfoliation to take place) the cystitis continues until the dead mucous membrane is expelled or removed from the bladder. If nothing is done, the membrane will in time be passed by the urethra. The date of this will depend upon the size of the slough. It may be passed during the first week or not till the end of the third week.

The bladder may give way and extravasation of urine may take place, and in this way speedy death may result. This is not a simple mechanical bursting or tearing open (unless external force has been applied); it is a perforation of the vesical wall by destructive inflammation. In some cases inflammation spreading through the bladder wall to the peritoneum may lead to the formation of adhesions. But if this is not the case, the separation of a slough may lead to extravasation of urine either into the peritoneal cavity or into the cellular tissue according to the situation of the slough; or the wall being thinned by the sloughing of part of the bladder wall, it may rupture at the weak spot.³ This event has been studied by Krukenberg.⁴ He says that gangrene of the vesical wall has never yet been seen when the catheter was used before the sixth day of retention, and that if the catheter is used before the tenth day rupture of the bladder need not be feared.

Death may take place from peritonitis. This is not a frequent, but may be a cause of very speedy death. Rasch has published⁵ a case in which peritonitis appears to have been the cause of death. The patient had had retention for 36 hours, and there was severe cystitis; the bladder was full of blood, and the bladder wall gangrenous at places. In this case it would seem as if the micro-organisms causing cystitis had spread through the injured bladder wall to the peritoneum. Peritonitis is not a common cause of death in these cases. A case has been recorded⁶ in which the patient died from peritonitis twenty days after reposition. But in this case I regard it as doubtful whether the peritonitis was caused by the displacement.

It is commonly stated that when the retroverted gravid uterus is not replaced, sloughing of the uterus and slow discharge of its contents by fistulous openings into the vagina, rectum, or bladder may take place. This statement seems to have gained currency from its having been made by Dr. Arthur Farre, in his great article on the uterus in the *Cyclopædia of Anatomy and Physiology*. Dr. Farre was so accurate in his statements that his name alone was regarded as a guarantee of fact. But in this instance his statement is a mere general assertion; he relates no cases nor refers to any. I can only find one case recorded in which this is supposed to have happened, and as to this, I agree with Robert Barnes and with Tarnier and Budin in thinking that the case was one of ectopic pregnancy. It is recorded by Guichard.⁷ The retention of urine occurred in March, when the patient was two months pregnant, a date too early for the pregnant uterus to cause retention of urine, and fetal bones escaped in the following December. This can hardly be spoken of as "gangrene of the uterus." So far as my knowledge goes, this alleged danger of gangrene of the retroverted pregnant uterus is a mere figment; it is an event which has never yet been known to occur.

An important case is reported by Dr. Macleod, of Kilmarnock.⁸ It is authenticated by a necropsy. The gestation sac, which is said to have been the uterus, was adherent everywhere—in the pelvis, to the abdominal wall in front, and to the bowel above which communicated with the cavity. When such universal adhesions are present it is not always easy to determine the anatomical relations of the parts involved, and for this reason I think it just possible that this pregnancy may have been ectopic. But accepting the record as it stands, it must be pointed out that in this case there were repeated attempts at pushing up what was thought to be the uterus, and also at emptying it; and in 1857 antiseptics were unknown. The case, accepting the interpretation given in the report, is unique; but it only proves that pregnancy may take place in an adherent uterus, and that by septic infection suppuration may be set up. These cases are the only evidence that I can find in support of Dr. Arthur Farre's statement. They afford no ground for apprehending that suppuration is likely to occur in a retroverted gravid uterus that is properly treated, even if the displacement be not corrected.

It is said that the vagina may rupture and the uterus protrude. In one case mentioned by Charles this was the result of violent attempts at reposition. In another case the usually accurate Spiegelberg says, on the authority of Halbertsma, that the fetus made its exit through the anus. I have referred to the original record of this case,⁹ and all I understand Halbertsma to say is that the uterus (covered by the anterior wall of the rectum) bulged at the anus, and that fetal parts could be felt through the uterine wall. Two other old cases have been quoted, the records of which I have not been able to see. I cannot say that this may not happen,

* Read before the Ealing Division of the Metropolitan Counties Branch of the British Medical Association.

but I do say that it is an event of the extremest rarity, which should never happen in the practice of any one provided with a catheter and an anaesthetic. It is so rare an accident that the possibility of its occurrence need not be taken into account.

It is commonly said that retroversion of the gravid uterus brings with it danger of abortion. This is a statement without foundation. On the contrary, by the time the uterus is large enough to become incarcerated under the sacral promontory, the patient has gone past the time at which abortion is most frequent, and hence there is little tendency to abortion. If retention of urine is allowed to go on long unrelieved, so that cystitis and pyelitis have been brought about, and the patient is dying of uraemia, abortion will probably precede death. And if the uterus is roughly handled in violent attempts at replacing a retroverted gravid uterus, such misusage may bring about abortion. But retroversion of the gravid uterus is not itself a cause of abortion. Let me give you some figures in illustration. Before considering them, remember, please, that taking all pregnancies together, about one out of every five ends in miscarriage; if, therefore, retroversion of the gravid uterus brings with it a special tendency to abortion, this should take place oftener than in 1 pregnancy out of 5. Busch,¹⁰ out of 74 cases, found that in 69 of them the uterus spontaneously righted itself; and of these only 4 aborted, or 1 in 17. This shows remarkably little tendency to abortion. In the other 5 cases the uterus had to be manually replaced, and all these aborted. Charles¹¹ has analysed 138 cases. In 8 of these abortion was induced. In 88 the displacement was forcibly reduced, either manually or instrumentally, and in 11 of the cases abortion took place, or 1 in 8—that is, twice as frequently as among Busch's cases, in which the uterus was allowed to right itself, but not as often as among pregnancies generally.

Among his 138 cases, Charles reports abortion in 47; but in 8 of them the abortion was induced. Of the 39 who spontaneously aborted, no less than 20 died. This illustrates the association of abortion with the dangerous effects of unrelieved retention of urine.

During the years from 1885 to 1903 inclusive, there were admitted into the London Hospital 79 cases of retroversion of the gravid uterus. My general instruction to the resident accoucheurs has been to treat such cases by keeping the patient in bed and having the catheter frequently passed, but I have not objected to the uterus being at once replaced when this could be done easily. In 5 of the 79 cases the notes are imperfect; of the 74 that remain, 40 spontaneously righted themselves when the patient was kept recumbent with the bladder empty; in 33 the uterus was manually replaced. Only 2 aborted, both of them cases in which the uterus was manually replaced; 2 died, both of them from uraemia. In 1 case a water-bag was used to effect reposition but took several days about it. I think the uterus would probably have gone up without the bag.

Dr. Champneys has kindly given me permission to use the records of St. Bartholomew's Hospital; and I wish to thank Dr. Eric E. Young for abstracting the notes from the registers. During the years 1881 to 1892, inclusive, 42 cases of retroversion of the gravid uterus were admitted into that hospital. One of these had not had retention of urine, but was admitted because she was aborting. The remaining 41 were all admitted because the uterus was incarcerated, and was causing retention of urine. In 25 of them the bladder was emptied, and the uterus easily replaced. In 2 cases attempts at reposition failed, but the bladder was frequently emptied, and the uterus afterwards spontaneously righted itself. In 8 others the treatment was limited to the frequent use of the catheter; and the uterus in each of them spontaneously went up. In one case the uterus was pushed up by a water-bag in the vagina, and in another case by an air-bag. In two cases the uterus was pushed up by Aveling's repositor. In 2 cases abortion was induced, and 3 cases aborted spontaneously. In one of these abortion did not take place till a fortnight after relief of the retention. Two cases died both from the effects of retention of urine on the bladder and kidneys. One of the abortions did not take place till a fortnight after the uterus had righted itself; and another, in a fatal case, preceded death by two days. Here we have, occurring in the two largest hospitals in London, 115 cases, with but 5 abortions, or 1 in 23, a frequency about one-fourth of that in pregnancies generally.

Looking over the clinical history of this condition it will be seen that the whole and sole danger of retroversion of the gravid uterus in the fourth month comes from its action as a

cause of retention of urine. There is no evidence that retroversion of the gravid uterus produces any ill-effect upon the organ itself. Its only importance arises from its effect upon the bladder; its only dangers are those which directly or indirectly spring from retention of urine: cystitis, peritonitis, rupture of bladder, pyelitis, uraemia. The one necessary treatment is the catheter. This, if used in time, is sufficient to relieve all symptoms and prevent all danger. Keep the bladder empty and the patient recumbent, and in over 90 per cent. of cases the uterus will right itself. If it does not, pregnancy will still go on. The uterus will enlarge, its anterior wall rising in the abdomen to accommodate the growing fetus. After a few days the bladder, urethra, and cervix uteri gradually accommodate themselves to their altered position, and retention of urine ceases. But unfortunately it does not spontaneously cease soon enough to prevent harm from continued retention; and therefore the possibility of its cessation should never be a reason for omitting or postponing the use of the catheter. The catheter must be used early and often, and if it is so used there will come a time when its use is no longer required. The pregnancy will in all probability go to full term, and when the full term has been reached, the uterine contractions will, while they dilate the cervix, pull it down into its natural position, and effect natural delivery. This has happened in every case in which the accoucheur in attendance has allowed it.¹²

The catheter, and the catheter alone, is therefore all the necessary treatment for retroversion of the gravid uterus, and reposition is in the strict sense of the word unnecessary, for the patient will do perfectly well with the uterus in its abnormal position if only retention of urine is prevented.

But reposition, though unnecessary, is yet often desirable. In a few cases, although the bladder is kept empty and the patient recumbent, the uterus does not spontaneously go up. In such cases it is better to push the uterus up, and thus obviate the necessity of frequently passing the catheter for several days. In many cases it will be found easy, after the bladder has been emptied, to push the uterus up with the fingers in the vagina; and if so it is well to do it, and thus relieve the patient of the necessity for further use of the catheter.

I have never seen a case of retroversion of the gravid uterus that could not be pushed up. In most such cases, after the bladder has been emptied—it is no use to attempt reduction while the bladder is full—the uterus can be pushed up by pressure applied through the vagina. But if the uterus is large, or the promontory much overhanging, the attempt to do this may fail, because the shortness of the vagina prevents the pressure from being applied far enough back. When the retroverted uterus is incarcerated the knee-elbow position has no special advantage; the uterus is prevented from going up, not by the intra-abdominal pressure, but by the sacral promontory, and this obstacle to reposition remains the same whatever the position of the woman, and is not removed by making the intra-abdominal pressure negative.

If there is difficulty in replacing a retroverted gravid uterus, the best way of doing it is with two fingers in the rectum under anaesthesia. By the rectum pressure can be applied at the fundus of the uterus, a part that cannot be reached by the vagina. With two fingers in the rectum you can press $\frac{1}{2}$ in. further up than with one finger. The presence of two fingers in the rectum is disagreeable for a patient who is sensitive; but when done under anaesthesia the slight stretching of the sphincter which it involves leaves behind no unpleasant effects. With the two fingers applied to the fundus it should be pressed upwards and towards the side on which the larger half of the uterus lies. By pressing towards one side the resistance of the overhanging promontory will be evaded. I have seen the advice given to pull down the cervix with a hook or volsella; but this is unnecessary; push the fundus up, and the cervix will take care of itself. Instruments have been devised for the special purpose of pushing up the uterus, but no instrument can press so accurately upon the right point in the right direction, and with such economy of force, as the tips of the fingers. It has been sometimes advised to effect reposition by placing a dilating bag in the vagina. I have known with such a bag in the vagina a week to elapse before the uterus went up, and I suspect it would have gone up as quickly if no bag had been there. Such a bag cannot very powerfully press upwards, because the perineum is its only point of support below. Therefore I believe a dilating bag to be as ineffective as it is unnecessary.

It has been said that it may be necessary to empty the

bladder by suprapubic puncture. I cannot understand how a competent man, with an elastic male catheter, the use of his eyes, and a good light can fail to pass a catheter in these cases. The figures I have read to you show that in twenty years, in the two largest hospitals in London, not a case was met with in which the catheter could not be passed; and therefore, suprapubic puncture of the bladder was never done.

I have spoken of this subject at greater length and with more emphasis than I should have done had it not been that in some textbooks, meritorious in many ways, abdominal section is recommended for retroversion of the gravid uterus. But when one finds that it is apparently not known that a retroverted gravid uterus will nearly always right itself within forty-eight hours if the patient is kept recumbent and her bladder empty, the force of the advice to do abdominal section is considerably weakened.

I can see no reason for performing abdominal section. The only cases in which it can possibly be beneficial are those in which the uterus is fixed by adhesions in a position of retroversion: and as adhesions generally lead to sterility, such cases will always be of extreme rarity. And in such cases the breaking down of adhesions and replacement of the uterus will be attended with more hæmorrhage than usual, owing to the greater vascularity of the pelvic organs brought about by pregnancy. Nevertheless, I think in a case of retroversion fixed by adhesions it would be better to free the uterus by manipulating within the peritoneal cavity than to try to break down adhesions by pressure from below. Death has been caused by injuries inflicted during such manipulations. The operator who tears through adhesions by pressure from below cannot know what pus cavities he may open or what vessels he may tear across. The operator who opens the abdomen can at least tell if he liberates pus or if there is hæmorrhage, and in the latter case he can do something to stop it. But if there is no other indication for abdominal section other than retroversion of the uterus causing retention of urine and not easily replaceable, it is not necessary to replace the uterus. Either the pregnancy will go to the full term, the uterus enlarging at the expense of its anterior wall or else spontaneous abortion will take place. If the gestation goes to full time, in the course of pregnancy the adhesions will get looser, softer, and probably in time will be absorbed.

Abdominal section is not free from risk. The case of an adherent pregnant uterus is just the one in which oozing from severed adhesions is likely to be free and difficult to stop. The danger of abdominal section is greater than that of a week's frequent use of the catheter, and greater than that of letting pregnancy go to term with part of the uterus in the hollow of the sacrum.

It has been proposed and recommended in some textbooks to puncture the uterus by the rectum or by the vagina, draw off the liquor amnii in order to reduce the bulk of the uterus, and thus make reposition easy. This proposal ought to be respectfully considered because it was made by William Hunter. It will prevent too much weight being attached to the fact that Hunter thought the uterus was sometimes irreducible if we remember that Hunter had no anaesthetic. If the uterus is really irreducible it may seem a reasonable thing to do; but before doing this it is desirable to be sure that the uterus is really irreducible. We should remember not only that in the great majority of cases the uterus will go up if the patient is kept recumbent and the catheter frequently passed; but that even in cases in which attempts at reposition had failed, when the patient was kept lying down with her bladder empty the uterus went up, to use an expression I often find in the notes, "of its own accord."

It is also sometimes recommended to induce abortion. When the cervix is high up it is not an easy thing to get a sound or tent into the cervix. But looking at the facts, that in the large majority of cases the uterus will right itself if the patient is kept recumbent and the catheter frequently passed, and if the uterus does not right itself the pregnancy may go to term and natural delivery take place in spite of the displacement, provided retention of urine is avoided, the induction of abortion seems to me unnecessary.

REFERENCES.

- ¹ There are several such sacs in the Museum of the Royal College of Surgeons of England. Nos. 3,681-2,3,552-6. ² *Edin. Med. Jour.*, 1883-4, p. 100. ³ There is a specimen in the R.C.S. Eng., No. 3652, showing this. ⁴ *Arch. f. Gyn.*, Bd. XII, 1881. ⁵ *Obst. Trans.*, vol. XXII, p. 129. ⁶ *Med. Times and Gazette*, 1857. ⁷ *Gaz. Méd. de Paris*, 1856, p. 20. ⁸ *Glasgow Medical Journal*, January, 1857, p. 412. ⁹ *Monats. f. Geb.*, xxiv, p. 414. ¹⁰ *Das Geschlechtsorgan der Weib.*, Bd. III, s. 583. ¹¹ *Des Déplacements de la Matrice en Arrière pendant la Grossesse*. ¹² *Lancet*, May 21st, 1893, p. 1397.

EXTRAUTERINE PREGNANCY.

By A. E. HIND, F.R.C.S.,
Jersey.

THE following case of extrauterine pregnancy, in which rupture occurred at the third month, and death took place on the tenth day after an operation from pulmonary embolism, presents points of interest.

History.—Mrs. L., aged 31, had had three children, youngest aged 6, but no miscarriage. On September 23rd she called in Dr. O'Connor, of Gorey, who found her suffering from abdominal pain. She had vomited several times. She had not been feeling well for some days, and had felt pain more or less for a week. She was lying in bed on her back. The abdomen was distended and hard. The pain was referred chiefly to the right iliac fossa, and she could not bear the slightest pressure in that region, no dullness could be detected. She declared that menstruation had occurred every three weeks and that she was not pregnant. The bowels had not acted for more than a week. Pulse 110, feeble. Temperature 101.8°. Heart sounds normal. Urine normal. The patient was ordered to remain in bed. Diet: milk and beef tea only. An enema was given with satisfactory result. Her condition gradually improved and when seen on October 18th she said she felt quite well. There was then no pain on pressure, but the abdomen was still distended. Pulse 80. Bowels very obstinate. Eight days later she again called in Dr. O'Connor. He found that she had been downstairs every day, and that whilst in the kitchen that afternoon she was suddenly seized with violent abdominal pain and fell unconscious.

When seen she was in a state of collapse. She lay on her back, knees drawn up, face pale and pinched, running pulse, respirations feeble and rapid, abdomen most painful.

State on Examination.—On the following day, October 27th, I was called by Dr. O'Connor to see the case, and decided to open the abdomen without delay. The patient was breathing very quickly. Pulse rapid and less tension. Face very pale. Abdomen distended and immobile, especially over the lower half; painful and tender all over. She was too ill to be removed to the hospital four miles away. In the attic of a poor labourer's cottage, with the help of Mr. Tweedie we set to work with such precautions against sepsis as we could command.

Operation.—The abdomen was opened by a 4-inch incision through the sheath of the right rectus, and the lower part of the abdomen and the pelvis were full of blood, mostly clotted and dark. Some difficulty was found owing to the distension of the intestines, and while washing out the blood there was a sudden rush of water from the pelvis, and a fetus about 3 inches long appeared, still attached by its umbilical cord to its torn and anæmic placenta. There was only one definite adhesion between bowel and sac, and the sac was apparently continuous with an enlarged portion of the fimbriated extremity of the Fallopian tube, distal to the ovary. The fetus and sac were easily removed and the Fallopian tube ligatured. After clearing out the abdomen as completely as possible the wound was closed and dressed, and a large hot water and salt enema was given and retained.

Progress.—The patient passed a good night after the operation, with the exception of some vomiting, which was relieved by a dose of calomel. After this there was slight diarrhoea, but the wound healed and convalescence was uninterrupted till the tenth day. On November 7th the patient was cheerful and wanted to get up. She seemed quite well, except that the breathing was rather more rapid than one would wish and the pulse still rather feeble. There was no pain or tenderness over the abdomen. Ten minutes after I left her she suddenly collapsed and died.

Necropsy.—Wound perfectly healed. Pelvis contained some blood-stained fluid (? post mortem). No injection of peritoneum. Slight sign of a localized peritonitis between two coils of intestine in one place. The remainder of the peritoneum quite healthy. Stump of tube firmly held by silk ligature partially imbedded. The pulmonary artery contained a large clot, which, although branched, was not altogether fixed. It was laminated on section and in parts hollow. Its laminated structure and variegated colour suggested that parts of it were not of recent formation.

REMARKS.—I have no doubt that death was caused by the clot described becoming detached and causing a complete block. It had doubtless been slowing forming. There was also some engorgement of the posterior parts of both lungs, which I do not think was a post-mortem change, but probably due to the obstruction of the pulmonary arteries. How long that clot had been in the pulmonary artery before getting moved and causing death one can only surmise. The rapid breathing had been a prominent feature of the case from the first time I saw her, namely, before the operation. Such an accident is apt to follow any operation, and I cannot see how it can be guarded against. I do not think that sepsis has anything to do with the causation. Twice previously have I had similar trouble. Once on the tenth day after removal of a large fibroid, and once after ovariectomy (on the fourteenth day). In neither case was there the slightest sign of any septic infection at any time of the case.

An anonymous offer to defray the cost of the erection of an operating theatre for the High Wycombe and Earl of Beaconsfield Memorial Cottage Hospital has been accepted.