finding it, I turned the sac inside out over a ball of cotton-wool soaked in glycerine, smeared its everted surface with the same substance, and, covering it piecemeal with a thin glass, I carefully examined it over its whole extent by reflected light. I never found anything I thought was an ovum.

I cannot reconcile this discrepancy between my observations and those of Dr. Ritchie otherwise than by supposing that, having been one of the discoverers of ova in a certain kind of ovarian tumour, he was too anxious to apply his principle of explanation to all; or he must have had a plan of examination more successful than mine.

The fact that I never found ova in any of the sacs of these multicystic tumours, even the smallest or in those with the most limpid contents, led me to entertain the opinion that in this we have an explanation of their formation. The function of the ovary is one of cyst-formation from its earliest existence to its latest, and in its pathology we need not go far away from its physiology. It seems to me, therefore, *à priori*, very unnecessary to resort to the ingenious explanations of cyst-formation advanced by Dr. Wilson Fox, though they may be fitted to exceptional cases. Experience in the examination of the growths themselves has strengthened this view; for my wonder is greater the more I see of them, that they do not occur more commonly, and with more complexity than they do, considering the apparently reckless amount of ovarian cyst-production that goes on throughout life.

The aim and object of this cyst-formation is the production, maturation, and discharge of the ovum. But if the ovum be not formed, or if it be produced only to a rudimental extent, may it not happen that the cyst will not be ruptured, but go on aimlessly expanding? Whatever be the source of the change, we know that it does not affect one ovisac alone, but may influence them in great numbers, whether it be in a tumour where the ova have been matured and subsequently prevented from escaping by sclerosis of the coat of the ovisac, or in a growth where the ova are not to be found. There is a great clinical difference between these two kinds of tumour; for in the one the growth is very limited and slow, and in the other it may be, and often is, extremely rapid, and is practically unlimited in extent. In fact, the growth of these cysts without ova partakes somewhat of the character of malignancy, assigned to them originally by Bright for clinical reasons. Malignancy, apart from any association with cancerous structure, is always indicated histologically by a tendency to the production of a form of tissue which is young and immature, and this is certainly the condition of these ovaless ovisacs.

There is in fact a reversion to the premoliminal condition of the ovary, as far as the ova of the affected ovisacs are concerned. The whole ovary does not, of course, become simultaneously implicated, and matured ova may be given off by some ovisacs still unaffected and within reach of the Fallopian fimbriae. Impregnation may thus occur from a degenerated ovary, though it is, of course, much more likely to occur from the one which remains healthy.

We have in these facts the reason that these adenoid tumours occur with greatest frequency during menstrual life, if indeed a future experience may not yet show that they do so exclusively. The menstrual congestion and excitement induces a dropsical distension and growth of a cell which would not be so perverted during childhood or senility, when its blood-supply would be sufficient only for passive nutrition.

The growth of cysts in the wall of the major sacs, appearing sometimes outside and sometimes within in great numbers, depends wholly on the relation of the original adenoid tissue to the cyst-wall; and, as that wall grew primarily in that tissue and surrounded by it, it would be indeed surprising if it did not carry along with it in its expansion some of the cells of the *couche ovigène* from which it sprang. These displaced cells have in their turn a stimulus for development, prematurely, perhaps, on account of the increased hæmic activity of their abnormal surroundings, due to the growth of the sac. They also go through the process of dropsical distension, developing no ovum, not rupturing, but becoming secondary cysts, perhaps ultimately to rival, or even to excel, that which has preceded them, on which they grew, and of which they have been supposed to be the offspring.

The views which I have here advanced are such as do not admit of detailed evidence in support of them within the limits of such an essay as this. They are the results of some years of study and much personal investigation, but even still they are so crude as to be unlikely to meet with general acceptance.

There are, I know, ovarian growths to which none of my explanations would be, in their present form, applicable; and, as my experience grows, I know I may have to alter or altogether abandon them. As they are at present, I submit them for criticism with a faint hope that I may receive encouragement to continue in a line of investigation and practice to which I have devoted myself.

THE LOCAL TREATMENT OF CYSTITIS IN WOMEN.*

By J. BRAXTON HICKS, M.D., F.R.S., etc.,
Obstetric Physician to Guy's Hospital.

IN choosing the heading of my paper as I have done, namely, "The Local Treatment of Cystitis in Women", I have been guided by the results of my own experience; because, although I do not altogether ignore the benefit of drugs given by mouth, nor the advantage of lulling the system by anodynes, particularly by opium, nor the benefit of rest and improvement of general health, yet, comparatively, their influence is very feeble, tedious, and disappointing.

When I speak of cystitis, I mean the more severe forms; not the trivial mucous irritation which subsides in a few days, but rather that severe form which, amongst other causes, arises from the effects of labour-retention, from malignant disease of the organ, or from paralysis, etc. I have seen internal remedies tried in these cases for a long time, till one has been tired of using them; and, beyond the use of anodynes and those remedies which correct any excess of an acid or alkaline condition, I have no faith in any; I mean as direct means of cure. But, with regard to the local treatment, I can speak far otherwise; and I may say, in view of the benefits thus resulting, that to temporise with the constitutional plan is only to allow a very distressing malady to harass our patient when the relief lies in our hands, if we will use it. With regard to the correctives of the state of the urine, according as it is more acid or alkaline than normal, we should always examine it, so as to make out this point. If, as far as we can make out, the urine enter the bladder overcharged with lithates, then a cautious use of alkalies coupled with opiates will assist; taking care that the alkali be suspended as soon as the urine becomes natural in this respect. Again, should we find it alkaline, it may be advisable to employ some mineral acid for a time, also coupled with an opiate. With regard to an opiate, there is no doubt that this remedy is the most valuable of all internal remedies, partly because it lessens reflex sensitiveness, and thus the bladder is not so frequently hurting itself by its forcible contractions, and partly because it gives relief from pain.

Now I will suppose we have a case of severe acute cystitis, with much pain and frequent or constant desire to micturate; severe scalding along the urethra during micturition; the bearing down constant and intolerable; irritative fever; urine loaded with mucus, purulent and bloody. The first point to make out is, whether the urine be still acid or have become alkaline. I may here add, that it is seldom acid in a case such as here supposed; but at the early stage it may be, before pus has appeared. Generally, it is very alkaline, and commonly also ammoniacal. Supposing it is alkaline and ammoniacal, then proceed in this way. Take a catheter—gum elastic is best, and still better if open at its end instead of the side, as usually made—let it be well greased or oiled and passed gently just into the bladder. Draw off the urine. (The open-ended form is of great advantage in many cases where the mucus is copious and very ropy.) Be careful to enter the bladder the least distance possible, and withdraw the catheter just without the neck when the bladder is on the point of being emptied. This saves the mucous membrane from flapping down on the end. Then, with a syringe, throw up through the catheter warm water slightly acidulated with either nitric, hydrochloric, or acetic acid (vinegar does very well); if nitric or hydrochloric acid, about two drops of the strong to the ounce of warm water. As soon as the patient complains of desire to micturate, allow it to flow away again. More of this acidulated water may be used, till the bladder seems clear of the phosphates and mucus. About half a pint of acidulated water will generally suffice.

Then inject also through the catheter about one grain of morphia dissolved in about one ounce of water; quickly withdraw the catheter from the urethra, and instruct the patient to retain it as long as possible. It is a very rare instance if this single application do not produce very marked benefit. In the very acute cases, the passing of the catheter requires tenderness and care, because of the great sensitiveness of the urethra and lower bladder. But, if the precaution be taken of not introducing the catheter just within the bladder, much pain is saved. The exact distance can, at the first passing, be marked on the instrument. But to avoid the contact of the catheter with the bladder during the washing out, as much as possible, I always pass the injections into the bladder without entering its cavity. This can be readily accomplished by employing an open-ended catheter; a little extra force on the syringe will drive the fluid past the sphincter. If the injections are to be withdrawn, then the instrument can be made to enter, but only, as above mentioned, so far as may be necessary to allow the fluid to flow.

* Read before the East Kent District of the South-Eastern Branch.

This treatment should be repeated twice daily, if the case be very severe, and especially in the case of retention, because of the ammoniacal decomposition of the urine; and, as the urine must be drawn off at least twice a day, there will be no additional distress given by passing the catheter.

In regard to the frequency, there is one point to be considered—viz., the irritation to the urethra caused by catheterisation. Of course, it is undesirable that we should pass the instrument more frequently than needful; yet it is to be also noted that frequent micturition itself causes soreness or abrasion of the urethra; so that, if we succeed by our treatment in mitigating the frequency of urination, we shall compensate for this; and this is in accordance with my experience. By the treatment above described, we do very quickly lessen the frequency, and more than entirely compensate for the irritation of catheterisation.

Where the urine has not become markedly alkaline, we may content ourselves by simply injecting the solution of morphia; yet, if we first of all wash out the bladder with warm water or warm solution of permanganate of potash, we shall much expedite the cure. The strength of the lotion should be three times that generally in use, as it is very rapidly decomposed by the urine. When this has been allowed to flow away, we may inject the morphia solution.

After some days of this treatment, I sometimes employ, instead of the permanganate of potash, a solution of chlorate of potash, about three or four grains to the ounce; using plenty, drawing it off after a few minutes, according as it gives pain, and then injecting the morphia.

Regarding the dose of morphia, I may add that, if there be no blood in the urine and the patient feel no constitutional effects from a grain, I increase it to two grains. If blood appear in the urine, it is a sign of some abrasion, in which case the morphia is more likely to be absorbed; yet I have never seen any unpleasant symptoms even from two grains. The more we use, without affecting the system much, the better; locally subduing the nerve-irritation and the tenesmus of the bladder, and the crushing of the mucous membrane which the contraction produces.

As the acute symptoms subside, we may employ more astringent washes; such as two or three grains of tannin in each ounce of warm water, or three or four drops of solution of perchloride of iron, using morphia immediately afterwards, as before mentioned. Our choice depends upon the amount of pain caused, the object being not to cause more than necessary. If the urethra be very tender, and catheterisation seem to produce irritation, I omit all treatment for a day or two, after which we can resume it with much benefit. If after a fortnight the main symptoms be subdued, but the urethra seem very tender, I apply an astringent directly to it. A bougie or catheter, covered with tannin, made very smooth, and dipped in gum-water before introduction, is not very painful, and answers well. A probe, on which a film of nitrate of silver has been fused, may be tried. Of course, pain succeeds; but, on its subsidence, patients have expressed much relief. However, in the more acute stages and forms of cystitis, one should avoid this, unless the urethral irritation be very marked. Later on, this may be freely adopted and other remedies tried, as passing a stick of fused anhydrous sulphate of zinc, or even mopping over the urethra with solution of perchloride of iron, carried up by a probe covered with cotton-wool or similar material. This irritation of the urethra is the cause generally, in cases with frequent micturition, of much additional suffering, and, by its reflex action, keeps up the irritation of the bladder; so that we may say they play into each other's hands. The urethra bears active treatment better than the bladder, and I have even dilated it and mopped it over with solution of perchloride of iron, with great relief the next day.

But, when cystitis has become chronic before we see it, or we have arrived at the same condition, but much earlier, by our treatment, we sometimes find it troublesome to completely cure the complaint. I have found, at this time, the injection of a solution of nitrate of silver of much service—from five to ten grains to the ounce. I have even used it up to fifteen grains to the ounce. This causes some rather severe pain for a short time, but much relief afterwards. Of course, two grains of morphia are left in afterwards. This may be repeated a week later. Or, instead of the nitrate of silver, I have employed perchloride of iron stronger than before mentioned (ten minims to the ounce). Now and then, for a few days together, it is well to leave off treatment in the chronic stage, to see how far the local interference may be rather keeping up irritation. I may be thought rather to be condemning local treatment by thus remarking, but really it is not so; we can, by local treatment, soon make a most distressing malady a bearable one; yet, at the same time, we know that frequent passing of the catheter may cause irritation, but slight only compared with acute severe cystitis. It is only when we come to the end of the case that we have to note the possibility of keeping up a slight irritation by our too frequent action.

I may add that, in the acute stages, the warm hip-bath, and warm sponge to the genitals, are not to be omitted, together with perfect rest in bed; the bowels must be kept gently relaxed; the dietary should be very simple and light, such as will naturally commend itself to our judgment upon common principles. But on no account should any kind of alcoholic beverage be permitted; and this rule should be observed rigidly during the whole period of the complaint, excepting only in such cases as it is imperatively necessary from other conditions of the patient's health.

I have thus only rather shortly sketched out the plan which I have used and would strongly recommend to your notice. The benefit of such management is very marked in cases of paralysis, where, from retention or the rapid ammoniacal decomposition of the urine, the distress and constitutional irritation are very distressing; and thus we can often lessen the chance of the extension of the irritation to the kidneys. Again, in malignant disease, the simple injection of acidulated warm water gives amazing comfort, removing the phosphates and ammonia, and, when to this is added the morphia, a wonderful comfort is felt. Indeed, so much relief is obtained, that, with a large calculus in the bladder, its presence is almost entirely unfelt if morphia be daily injected.

I would recommend the extension of this treatment to inflammation of the male bladder. The same precautions can be taken regarding the entry of the catheter. I have found that it is not needful to pass the end through the sphincter; but, if an open-ended catheter be employed, the fluid will find its way through readily. If the catheter be only passed about three or four inches, even then the fluid will find its way into the bladder; and this is an advantage for the male, as the area of urethral irritation by catheterisation is thereby lessened.

After cystitis has lasted some time, irritability generally exists for some considerable period afterwards. This is much lessened by occasional morphia injections; but it may very possibly be due to the contracted state of the bladder, which cannot be quite overcome by the will, although the exercise of the power of retaining urine increases the power of the sphincter, and consequently the capacity of the bladder. In this case, we may often succeed with a plan which I have some time ago, and again more recently, advocated, namely, gently distending the bladder with warm water by means of a syringe, which frequently overcomes the difficulty in a few days.

CASE OF ANEURISM, WITH PARALYSIS OF THE LEFT RECURRENT LARYNGEAL NERVE.

By EDWARD T. WILSON, M.B., F.R.C.P.,
Physician to the Cheltenham General Hospital and Dispensary.

A CASE which was recently in the Cheltenham General Hospital so fully bears out the observations of Mr. Norton in the JOURNAL of June 20th, that I think it may be worth recording.

A labourer, T. D., aged 48, was admitted as an in-patient under Dr. Abercrombie early in May last, suffering, as he said, "from a beating in the chest and hoarseness". This man's own account was, that he was carrying a heavy ladder about two years ago, when he felt something tear and give way between the left clavicle and the shoulder-blade of the same side. He was not disabled from work, nor did he suffer much pain; but shortly afterwards he began to feel the pulsation in his chest, which had lately been more troublesome. He had been doing his work, however, and was very anxious to return to it. The general health was good, and he complained chiefly of his hoarseness and an uncomfortable feeling as if something were out of place in his throat. On examination, a pulsating tumour was discovered, deep, but easily defined, behind the inner third of the left clavicle. There was dulness extending upwards to the apex of the lung, but not inferiorly beyond the lower margin of the first rib. A to-and-fro murmur was heard over the tumour, and a soft systolic *bruit* over the apex of the heart. No pulsation could be felt in the left carotid artery, and in the left radial it was barely perceptible. He had suffered from time to time from headache, and, for some time after admission, complained of a numbness in the left leg. No difference, however, could be detected between the right and left femoral arteries.

The origin of the aneurism was somewhat uncertain. This man's own sensations at the time would seem to point to the subclavian. What I wish to notice, however, is the result of pressure upon the recurrent laryngeal nerve.

The man's throat was a peculiarly favourable one for observation, and tolerant of the instrument, so that the most perfect and prolonged views were obtained by artificial illumination and by sunlight—the