Uterine displacements are commonly found in early pregnancy, during the period of involution and on routine gynaecological examinations. This finding often leads to unnecessary manipulations and operations. Throughout the years I have encountered this phenomenon on innumerable occasions. Reflection on this problem has been interesting and the observations made might prove to be of value both to those actively engaged in practice and to those who are about to enter the world of medicine.

**RETROVERSION IN OBSTETRICS**

If 100 women are examined before the 10th week of pregnancy the uterus will be found to be displaced backwards in at least 8%. The question of whether the incidence of abortion is higher when the uterus is retroverted has been the subject of controversy for many years. Certainly a retroversion cannot be regarded as an important aetiological factor—it is possible that there is a slightly greater tendency for abortion to occur—but statistically it is difficult to prove.

When the practitioner encounters retroversion in early pregnancy he can replace the uterus, insert a pessary and leave it *in situ* until the 16th week, or he can disregard the displacement and give his patient the following instructions:

1. Be most careful to pass water every 6-8 hours.
2. Refrain from coitus until the end of the 4th month.
3. Assume the knee-chest position for a few minutes after having passed water, 3 or 4 times daily.
4. Report any undue frequency or difficulty of micturition.
5. Rest during the period in which menstruation would normally occur.

I have carried out this simple treatment for many years and have no reason to regret it. Replacement of the pregnant uterus may entail considerable manipulation and sometimes it is impossible without an anaesthetic. Such procedures may in themselves excite the uterus to expel its contents.

The psychological effect on a woman when she is told that her womb is displaced may be considerable, therefore care should be taken to avoid unnecessary apprehension.

If the patient gives a history of 2 or more miscarriages the retroversion should be corrected, but the correction should be carried out in the interval between the pregnancies, not when the patient is pregnant. The result of this prophylactic measure is somewhat disappointing, which is not surprising considering the large number of unknown factors causing abortion.

The diagnosis of retroversion rarely presents difficulty. Very occasionally an ovarian cyst may be mistaken for the pregnant uterus and *vice versa*. This is an important matter; if in doubt examination under an anaesthetic is indicated. A post cervical fibroid may be mistaken for the gravid uterus but in the absence of urinary symptoms observation is all that is necessary.

Dextroversion of the pregnant uterus combined with retroversion is not as common as dextroversion when the uterus is in the anteverted position. Sometimes the deviation to the right is very marked. Unless the practitioner is aware of this physiological displacement he may regard the uterus as an extra-uterine condition such as an ovarian cyst, or, if the patient complains of pain in addition, he may diagnose ectopic pregnancy. I have seen this mistake made on several occasions. I have made it myself and with humiliation and sorrow closed the abdomen.

Incarceration of the retroverted gravid uterus is a comparatively uncommon condition; nevertheless, its recognition is of vital moment and prompt treatment is imperative. Urinary symptoms usually manifest themselves between the 13th and 15th weeks—frequency, increasing difficulty in emptying the bladder and dysuria, then retention. In many cases the patient will only call for medical aid when retention has supervened.

On abdominal palpation a tumour will be felt which may closely resemble the pregnant uterus but it is somewhat tender and considerably larger than the period of amenorrhoea would warrant. Vaginal examination shows the fundus lying low in the pelvis and pushing the posterior vaginal wall downwards. Difficulty may be experienced in feeling the cervix because it is drawn upwards and lies beneath the symphysis and on occasion even above it. Examination in the left lateral position may prove helpful in locating the external os.

Catheterization is of course an urgent necessity, but it may present difficulty owing to the elongation and displacement of the urethra. In addition, the urethral orifice is occasionally difficult to visualize. The introduction of a catheter may often be facilitated by traction upon the cervix with a ring forceps and pushing the fundus forwards *via* the rectum. The catheter must be long and soft and decompression should be slow. The best treatment is the insertion of a self-retaining catheter. Attempts to rectify the position are best avoided for a week. At the end of 48-72 hours, spontaneous rectification will almost invariably have taken place. If not, the catheter should be left in the bladder for
another few days. Urinary antiseptics should be prescribed and a mild purgative administered if necessary. If the uterus remains retroverted at the end of a week or 10 days, an anaesthetic is administered and a pessary inserted. This is seldom required. I have seen only one case in which laparotomy was necessary. In this case a post-cervical fibroid complicated the picture.

Puerperal Retroversion

About 1-5% of patients examined 6 weeks after delivery will have this condition. If involution is good and mobility unimpaired, no treatment is necessary, but if symptoms such as backache and a heavy feeling in the pelvis are present and no orthopaedic or other explanation can be discovered, particularly when subinvolution is found, a Hodge type of pessary should be inserted after replacement.

Sometimes puerperal retroversion is regarded as a reflection on the management of labour and the puerperium. Certainly sepsis will favour the development of subinvolution, and lack of care in seeing that the patient empties her bladder completely at regular intervals will increase the incidence of backward displacement. Generally speaking, however, it is unfair and unjust to blame the doctor for its occurrence.

RETROVERSION IN GYNAECOLOGY

The uterus is not fixed in its normal position of anteversion and anteflexion. It is free to rotate about a transverse axis through its fixed supports, the cardinal ligaments and paracervical tissues. It is only when the uterus is found beyond the range of mobility, which is less than half a circle, that it may be said to be displaced.

Opinion regarding the significance of backward displacement of the uterus has changed during the past 30 or 40 years. Formerly a retroversion was regarded as a condition which required active treatment either by operation or pessary. This unreasonable and evil outlook was gradually superseded by the view that only those cases in which the symptoms were due to the displacement justified treatment. This, then, is the crux of the matter, namely to decide when the complaints are definitely caused by the retroversion. The majority of cases of retroversion give rise to no symptoms and when there are no symptoms the woman should be left alone. The displacement in itself can do her no harm.

The symptoms that may be associated with backward displacement of the uterus are numerous. The following are the commonest: (1) Low backache, (2) bearing-down feeling, (3) menorrhagia, (4) dysmenorrhoea, (5) sterility, (6) leucorrhoea, (7) dyspareunia and (8) chronic left-sided pain.

These symptoms may or may not be caused by the displacement. In most cases associated conditions are mainly responsible. Of these various symptoms, backache is probably the commonest. The causes of backache, whether the uterus is in normal position or not, are legion. Before blaming the position of the uterus for the complaints, careful consideration should be given to other possible causes, particularly orthopaedic causes, of which sacro-iliac joint strain should not be overlooked; endocervicitis, vaginal or uterine descent, chronic pelvic inflammation and urinary tract infection. It is also well to remember that some women appear to be born 'with a back'. A mobile retroversion is a most unlikely cause of backache in young unmarried women. Nurses, shop assistants and others whose work entails standing for long periods every day, frequently complain of this symptom. Examination of the feet should not be overlooked.

The part played by retrodisplacement in dysmenorrhoea in single girls is very difficult to assess, but it is certain that the displacement is seldom the whole factor. The majority of the severe cases are encountered in girls when they leave school and start earning their living. The girl finds herself in an entirely new world. The treatment is largely psychological. In addition, the importance of exercise and regulation of the bowels should be stressed. However, there are a few isolated cases in which, all other measures having failed, an operation for correction of the position of the uterus brings relief. Pessary treatment is unsuitable.

Dyspareunia, in most cases, has nothing whatever to do with backward displacement. Ignorance of sex and marriage on the part of the husband and wife is certainly the most important cause. There is one associated condition which demands suspension of the uterus, namely prolapsed tender ovaries.

Sterility may be due to an uncomplicated retroversion. All the same, a high percentage of women with this displacement do conceive without treatment. If a patient has been married for a year and has not become pregnant, the husband should be examined. If he is within normal limits, the tubes should be tested and the cervix dilated. This simple treatment is often successful. A ventri-suspension may be justified after all other possibilities have been diligently explored.

Pessary treatment is not suitable for the congenital type of retroversion. On the other hand, pessary treatment should be given a trial in parous women. An existing endocervicitis should receive attention; not infrequently this is the real cause of the secondary sterility.

A fixed retroversion is the result of adhesions due to previous pelvic inflammation or endometriosis. The symptoms are mainly due to associated conditions, although the displacement may aggravate the disability. If conservative treatment fails to bring relief, operation may be justified, but it will be required for the associated conditions rather than the actual retroversion.

Sometimes it is difficult to say whether the uterus is fixed or not. The fact that the uterus is tender on examination and movement causes pain, is not necessarily evidence that it is held down by adhesions; examination under an anaesthetic may be the only way to decide.

A common triad of complaints in multiparae is pain in the back, dragging in the left iliac fossa, and leucorrhoea. Careful examination will often show a degree of uterine or vaginal descent in addition to the retroversion. Cervicitis is frequently present. Cauterization of the cervix followed later by a colporrhaphy will usually give a good result. Ventri-suspension alone will not benefit the patient.

It is difficult for men to appreciate the depressing effect on the average woman's mind when she is told that her womb is displaced. Her reaction may be even worse when she is informed that her womb is 'lying on her backbone'. Therefore, it is important to reassure her and allay totally unnecessary fears. I tell patients that about 15% of women have a displaced womb and that the displacement cannot possibly shorten their lives or prevent them from having a baby. In some cases it might seem wiser not to inform the patient of the displacement, particularly if she is a young
unmarried woman, but if the practitioner refrains from mentioning it, he is liable to be discredited at some future date by another practitioner.

Professor James T. Louw has kindly supplied me with the following figures. In the 5-year period from 1953 to 1957, 16,740 operations were performed in the Department of Obstetrics and Gynaecology, Groote Schuur Hospital. Of this number 5,060 were major operations. 40 ventriculotomies were carried out, i.e. a fraction less than 8 per 1,000 of the major operations. The suspensions for backward displacement without associated conditions, such as myectomy, ovarian resection or endometriosis, averaged 5 per annum, i.e. 5 per 1,000. These figures are impressive and worthy of careful consideration.

CONCLUSION

When symptoms are present in a patient in whom a backward displacement of the uterus is found, a thorough investigation should be made to exclude other possible causes for her symptoms. The more thorough the interrogation and examination, the less will retroversion be found responsible for the complaints.

OTOGENIC MENINGITIS WITH CAVERNOUS SINUS THROMBOSIS

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Since the introduction of antibiotics cavernous sinus thrombosis has become a rare condition especially in association with an otogenic purulent meningitis. Two cases were seen in a paediatric department within 18 months; they are presented here to call attention to the therapeutic problems involved.

CASE REPORTS

Case 1

In December 1955 a 9-year-old boy was admitted with a history of headache, otalgia, fever and vomiting for 2 days. Two months previously the patient had received an injection of penicillin for otitis with recovery and no subsequent complaints. On admission the patient was severely ill, delirious, restless, vomiting, and with a high fever (40°C) and marked meningeal signs, including opisthotonus. There was marked reddening of the right ear-drum, while a purulent discharge welled up from the left ear. On the left side proptosis, chemosis with an oculomotor palsy and a peri-orbital inflammatory swelling were present. Cerebrospinal fluid was purulent with 17,800 polymorphonuclear cells per c.mm., 600 mg. % protein, and 8 mg. % sugar. Cultures from the cerebrospinal fluid, blood, and pus from the ear were all sterile.

A short while after admission, severe convulsions occurred; and the patient lapsed into a deep coma. An electro-encephalogram showed a severe disturbance, especially marked over the left temporal area.

Massive antibiotic therapy (streptomycin 1 g., chloramphenicol 1 g., aminocycline 600 mg., intravenous sulphanadiazine 1 g. per day) was given together with blood and parenteral fluids. A right mastoidectomy was performed within 24 hours of admission. Severe destructive changes were present at operation. The clinical condition remained serious, with high fever and deep coma. On the 4th hospital day, the patient returned to the operating theatre for a left mastoidectomy. Only a mild inflammatory lesion was found. In order to assist in the aspiration of the secretions which were pooling in the hypopharynx and causing 'secretional anoxia', a tracheotomy was performed.

On the 8th hospital day, with the patient still comatose, a right spastic hemiplegia with a left facial palsy developed. A persistent disturbance over the left temporal area was found on electroencephalography. The inflammatory lesion of the left eye continued to be severe with the development of ulceration requiring cortisone eye-drops.

The patient was in a coma for 10 days, and then gradually improved. By the 15th hospital day the administration of intravenous fluids was stopped. Decannulation was achieved without disturbance.

The child however remained with a spastic hemiplegia, persistent abnormal findings on examination of the cerebrospinal fluid (25-32 cells per c.mm., and 95-140 mg. % protein) and a localized area of disturbance on the electro-encephalogram. In addition, on return to consciousness, he was found to be completely aphasic. The possible existence of a temporal lobe abscess was strongly considered, and the advisability of neurosurgical intervention hotly debated. As the child was improving steadily a conservative approach, with continued use of antibiotics, was carried out. After 130 days of treatment pneumo-encephalography showed cerebral atrophy on the left side, with a compensatory hydrocephalus. The patient was discharged with the hemiplegia and dysphasia still present.

Four months later he was admitted with generalized convulsions, which were controlled with anticonvulsant therapy. At present the patient walks with a hemiplegic gait, and still has a marked motor and sensory dysphasia. The child is simple and euphoric. His electro-encephalogram still shows a marked disturbance over the left temporal area. Despite treatment, convulsions (often beginning with a 'gustatory phase') occur 6-10 times each month. Despite the remarkable physical improvement and the mental progress thus far achieved, the attainment of satisfactory cerebral function seems to be unlikely.

Case 2

In June 1957 a 3-year-old boy was admitted in coma. For the previous 6 months intermittent therapy for discharging ears had been given. Two days before admission the patient became apathetic after a fall, and began to vomit. This was followed by high fever and coma.

The child was seriously ill on admission, being restless, comatose, and feverish (38-2°C) and emitting now and then a high pitched 'cerebral cry'. Marked meningismus was noted. Signs of cavernous sinus thrombosis were present on the left side. There was no definite evidence of acute inflammation of the ears. Fundal examination was negative.

On lumbar puncture turbid cerebrospinal fluid under pressure was found with 1,000 cells per c.mm., and sugar 10 mg. %. Culture of the fluid grew pneumococci. X-rays of the skull showed a marked widening of the sutures. E.E.G. showed a severe generalized disturbance. Massive combined antibiotic therapy, similar to that used in the first case, was instituted with no effect on the clinical condition. Despite the negative findings on otoologic examination, it was decided to carry out bilateral mastoidectomy. Operation on the 4th hospital day revealed a marked inflammatory lesion with pus present which was sterile on culture.

After operation the patient's coma deepened with the onset of generalized convulsions. Signs of 'secretional anoxia' became apparent, and led to tracheotomy on the 6th hospital day to avoid respiratory complications.

The patient's general condition improved with removal of the carotids after 19 further days. The child, however, remained in a state of decerebration with spasticity of the limbs, difficulty in feeding, early optic atrophy and a persistently abnormal electroencephalogram. Pneumo-encephalography, carried out after 34 days in hospital, showed a marked hydrocephalus. Shortly afterwards the patient was discharged at the parents' request.

DISCUSSION

In considering these 2 cases, certain points are worthy of note:

1. Cavernous sinus thrombosis is a rare complication of otogenic meningitis. Infection may spread along 3 possible routes: (a) From the ear via the lateral sinus to the inferior