

The Results of Conservative Treatment of the Uterus.

BY

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CONSERVATISM as a medical term has been defined as "the power or tendency to preserve in a safe or entire state" and, therefore, conservative treatment of the uterus may be considered to include all forms of therapy which tend to preserve life and to conserve the function and structure of the female sex organs. The conservation of the reproductive function has always been a matter of vital importance to the human race, and means of achieving this object have exercised the human mind since the dawn of civilization. The methods now available for this purpose have been evolved by a slow process of development which began and germinated in the mists of antiquity when primitive man first set himself to master his environment and subdue the brute creation.

The primitive struggle for existence demanded from each individual a constant effort towards the achievement of personal safety, and this daily discipline implanted deep in human nature the instinct of self-preservation, an instinct which has always exercised a dominant influence upon medical methods, and remains to-day the first principle of conservative treatment.

But individual safety had little evolutionary value apart from the survival of the family, because the process of evolution was itself dependent upon the propagation of the species, or in other words, upon the successful exercise of uterine function. Reproduction has always imposed a burden upon the individual and chiefly upon the female of the species, but the altruistic quality of this impulse has been concealed under the guises of sexual desire and maternal instinct, and as such, its influence upon the human mind has been second only to that of self-preservation.

In so far as primitive man based his conduct upon these instincts, he demonstrated that health and function are the supreme physical purposes of the human body; in his efforts to protect his women folk from violation, and to maintain an

adequate birth rate, we may discern a deliberate attempt to safeguard the functions of the uterus. He was primarily concerned with the survival of the fittest, his mode of life being incompatible with the survival of unfit or diseased persons, but he was unable to ignore the results of injuries received in combat with wild animals or the sequelae of wounds sustained in battle. His interest in such accidents was stimulated by the fact that they were incurred generally by the youngest, healthiest and most skilful members of the tribe and he was, therefore, compelled to devise some means of overcoming the effects of such disabilities.

Paleolithic man was peculiarly fitted to make simple clinical observations, because he was forced to pay constant attention to his natural surroundings, to keep a constant guard against the attacks of wild animals, and to maintain a daily watch upon the movements of his human enemies. Trained in this hard school where mistakes were always dangerous and frequently fatal, he was essentially a student of nature and a highly trained observer of natural phenomena. He must soon have learned something about anatomy and surgery from his experience of the slaughtering and cutting up of animals and from the study of battle wounds, thus developing a crude technique in which plants and herbs were applied as surgical dressings and hunting knives and war weapons were adapted for surgical purposes. No doubt his first attempts at surgery were limited to the treatment of injuries and were palliative or even ablative in character, but it was clearly quite early in the evolutionary scheme that attention was turned towards the conservation of the normal sexual functions by the performance of surgical operations upon the genital organs. Many of the initiatory ceremonies concerned with puberty are of ancient origin and they are of particular interest to the gynaecologist, because they represent the earliest attempts to influence the fertility of the individual by operative measures and thus may be regarded as the prototype of conservative operations upon the uterus. Moreover, it is interesting to observe that such tribal customs were intended to facilitate and to encourage the sexual and reproductive functions even at the cost of mutilating the structure of the genital organs, and here we discover the earliest acknowledgment of the principle that structure is subservient to function and must sometimes be sacrificed in its interest.

As civilization proceeded and personal and racial survival became more assured, the scope of primitive medicine was enlarged so as to include the simple investigation of disease and the treatment of diseased persons. The habits of mental concen-

tration and watchfulness imposed upon mankind by his pastoral existence would inevitably lead the paleolithic physician to associate the investigation of disease with the study of nature and to base his treatment upon simple and expectant methods. No doubt many of the drugs now in use were employed in prehistoric times and their therapeutic value was at least partially recognized. It is also quite easy to understand why disease and death should come to be associated with the great natural phenomena by which the life and destiny of primitive man were largely governed.

The powerful and inexplicable forces of nature aroused the wonder of savage peoples and formed the basis of those animistic practices which constituted the earliest form of religion. Out of these practices there arose a belief in mystery and magic and the cult of priestcraft. Men qualified for such transcendental office claimed to influence and control the mighty forces of nature and to possess jurisdiction over both the natural and supernatural lives of their clients. The medicine man was one of the earliest and most influential products of human progress, for he combined in his own person the faculties of both priest and physician, and for this reason was respected and indeed venerated by the less gifted members of the community. As the tribal doctor, he was a dispenser of herbs and other medicinal agents and the chief exponent of surgical methods, while in his capacity as priest, he posed as the servant and confidant of the tutelary deity and claimed to have access to secrets and mysteries which were hidden from ordinary mortals. His sacred office gave special sanction to his more human faculties and invested his medical knowledge with a peculiar significance and importance. The respect paid in the first place to the individual was later accorded to the office and thus the profession of medicine became an object of veneration and the practitioner the arbiter of tribal tradition and practice.

In this way, a new element entered the field of primitive medicine, namely the adoption of the empirical method and the establishment of the principle of medical authority. The value of independent thought and research is undeniable, however unorthodox the method or the conclusion may be, and the personal contributions of such original workers as Lister and Pasteur have been immense, but the employment of the empirical method cannot be restricted to the brilliant originality of the man of genius, nor to the valuable work of less brilliant but equally honest men and, therefore, the acceptance of this principle is not free from danger. If personal predilection is to be recognized as a guiding force in medical teaching, then any man may claim

the right to hold and express his own opinions however ignorant or dishonest they may be, and any quack or charlatan may evoke the spirit of empiricism in order to support his theories or bolster up his practice.

We may summarize this survey of the prehistoric development of the conservative method by saying that primitive man introduced four elements into the practice of medicine :

1. Simple sociological measures directed towards the propagation of the race and the conservation of the reproductive functions—the beginnings of preventive medicine.

2. The development of a crude surgical technique for the treatment of injuries, and later, the institution of ceremonial methods for conserving the sexual functions at puberty.

3. Primitive clinical observations and expectant treatment of disease.

4. The introduction of the empirical principle and the establishment of medical authority.

THE EFFECTS OF CIVILIZATION.

The crude methods employed by ancient man were modified and refined by the process of civilization, but, even in the golden age of Greece, the principles of treatment were clearly dependent upon the traditions of the past. The Greeks taught that nature was the great exemplar of health and that the treatment of disease should be based upon the study of nature and the close observation of the patient. They paid much attention to nursing and general supervision, the use of drugs and other simple remedies; they excelled at clinical medicine and are justly famous for the brilliant development of the expectant method of treatment. Moreover the Greek school advanced the art of surgery to a stage far beyond that reached by their ancestors; their surgical methods were not limited to the dressing of wounds and the treatment of injuries, nor were they restricted to ablative operations such as amputation and trephining, but they included the repair of herniae, the surgical treatment of cataract, and the removal of uterine polypi.

But most of their surgery must have been palliative or ablative in character, and it is obvious that little real progress could be made in the direction of conservatism in an epoch which knew nothing of antiseptics and anaesthesia and had little knowledge of anatomy and physiology. The veneration of the Greeks for physical endurance and beauty inculcated a reverence for the

human body which probably explained their reluctance to dissect the human subject, but it is nevertheless very difficult to understand how a race could achieve supremacy in sculpture and devote such ardour to the pursuit of physical perfection as to grant safe conduct to enemy athletes proceeding to the Olympian contests, and yet retain such false notions concerning structure and function.

In addition to their classical contributions to clinical work the Greeks introduced two new principles into the science and art of medicine; Aristotle initiated the experimental method of biological research when he investigated the anatomy of the dog-fish and described the placental attachment of the embryo. Hippocrates and his followers, by instituting the Hippocratic oath, laid it down for all time that the physician must be distinguished by the lofty ethical standard of his professional conduct and that he must consider his primary duty to be the conservation of the life and safety of his patients. The words—"I will give no deadly drugs to any, though it be asked of me, nor will I counsel such, and especially will I not aid a woman to procure abortion"—breathe the spirit of true conservatism and we may well recall them in an age which is confronted with the ethical problems associated with legalized abortion and eugenic sterilization.

The Egyptian school succeeded to the Hippocratic tradition, and in Alexandria was begun the study of those sciences which form the basis of modern scientific medicine. Herophilus in 200 B.C. was the first teacher of anatomy to practise public dissection, while at the same time Erasistratus was laying the foundations of physiological research. The latter is also famous for his contributions to preventive medicine, for he wrote a book on hygiene which enunciated the view that if prevention could be achieved, cure would be unnecessary.

After the decline of the Alexandrian school, Greek culture migrated to Rome. The Romans, as invaders, conquerors and colonists, had little interest in experimental medicine, but they were vitally interested in physical efficiency and with the development of a military and civilian organization competent to preserve the health of the army and the nation.

In addition to building roads, they founded hospitals and devoted much attention to practical sanitation. The Romans were also the first to study the physiological principles underlying the art of midwifery, and they have the right of priority in regard to the organization of a midwifery service, for whereas the Greeks were content to leave normal midwifery to the care of slaves and

women and reserve the attention of their physicians for difficult cases only, the Romans modified this custom by encouraging the practice of midwifery among men midwives. The writings of Celsus, Aetius, Soranus and other writers of this period show that the art of obstetrics had reached a comparatively high level and that conservative methods of treating the pregnant uterus were known and practised during the early part of the Christian era. There can be no doubt that the Roman obstetricians were familiar with the use of nets and fillets, and realized the value of rupturing the membranes, of version, and other simple measures for providing assistance to women in labour.

During the centuries which intervened between the fall of the Roman empire and the sixteenth century, medicine made little further progress, and much of the medical knowledge possessed by the Greeks and Romans was forgotten or remained in abeyance until the revival of learning. It would be a mistake to suggest that Greek culture was entirely lost throughout this period or that the practice of palliative surgery and wise expectancy fell into complete disuse. Proof to the contrary is furnished by the records of the medical school which flourished at Salerno and by the work of the Arabian physicians, of whom Rhazes, Albucasis and Avicenna were famous as obstetricians; but during this period the characteristic method of practice was an empirical one—at its best a feeble imitation of the Greek tradition, and at its worst, a combination of magic and mystery.

And yet the so-called dark ages had their bright intervals, and made two notable contributions towards the advancement of medical science. The monastic orders were concerned with the spiritual rather than the bodily welfare of their patients, but they did in fact establish hospitals and libraries where ancient manuscripts were preserved and copied, and they founded the first universities in Europe which still survive to bear witness to their industry and enthusiasm.

The medievalists also made an important discovery in regard to the control of infection. The mortality which was associated with the Black Death was an appalling commentary upon the state of preventive medicine in the Middle Ages, and yet the town of Ragusa found that it was possible to restrict the spread of infection by compelling strangers to remain outside the city for a period of 40 days (*quarantina*) of isolation. This discovery of the value of isolation established a principle of treatment that is still of vital importance in the twentieth century, and one that has a particular application to the conservation of uterine function.

THE RENAISSANCE OF MIDWIFERY.

From the obstetric point of view, the Renaissance began with Ambroise Parè, the famous surgeon who re-introduced internal version for the treatment of dystocia. Parè, according to Smellie, was the first to improve upon the teaching of the ancients, and we may acclaim him as the first of the moderns. Prior to his time, the art of midwifery had lapsed into the hands of ignorant women; the conservative methods of treatment employed by the Roman obstetricians had been largely forgotten and medieval obstetric work was limited to the performance of craniotomy and post-mortem Caesarean section. But the fame of Parè does not rest upon the invention of a new method, but rather upon the discovery of a new principle, for he demonstrated that it was possible to preserve rather than destroy the life of the child and the mother in cases of difficult labour, and thus he is clearly entitled to the honour of priority in regard to conservative midwifery.

Parè's work and teaching led to the foundation of the great school of midwifery in Paris, later associated with the names of Mauriceau and Gregoire, and to the appearance of the first textbooks which did much to spread the new teaching and to raise the standard of obstetric knowledge. The discovery of a new method for shortening labour and relieving the suffering of childbirth was bound to create a demand for professional assistance during labour and to encourage the development of a new type of surgeon especially interested in obstetric work. The acceptance of this innovation by the general public was greatly assisted by the publication of the secret of the midwifery forceps which at once gave an enormous advantage to the man-midwife. It became fashionable to call in obstetric surgeons for normal as well as for difficult cases, a custom which enabled the great obstetricians of the seventeenth and eighteenth centuries to study the physiological principles of normal reproduction and to devise those mechanical means of assisting women during delivery which remain in the forefront of conservative treatment of the parturient uterus.

The initiation of conservative surgical methods of treatment may be said to have preceded the Renaissance proper, and to have begun when Simon Nufer plunged his saw gelding knife through the abdominal wall and into the uterus of his courageous and long-suffering wife. The result of this historic operation demonstrated to the world, perhaps for the first time, that a woman suffering from one of the most dangerous

complications of midwifery could not only be cured by an abdominal operation, but that such treatment was compatible with the conservation of the whole of the sex functions of the uterus. It is unlikely that the operator himself was even dimly aware of the significance of this act, although he may have thought himself to be more capable of undertaking the operation than the numerous midwives and other attendants who had failed to achieve the delivery of his wife. As a sow gelder, he must have been familiar with the anatomy of the abdominal wall and the genital organs of those animals upon whom he was accustomed to operate. Very likely he was quick and dexterous and he may have argued that if he could so easily open the abdomen of a lower animal there could be no reason for thinking that the same operation could not be performed on the human female. The immediate result must have been very gratifying to all concerned, and the subsequent history of the patient doubtless surpassed the most sanguine expectations of the surgeon and his assistants. This operation is a striking example of empiricism at its best, because Nufer had not been trained in medicine and his capacity for dealing with the situation was entirely dependent upon his own observations and deductions. At the same time, his occupation as a sow gelder must have provided some insight into the functions as well as the anatomy of the female sex organs, and the result of his sow gelding operations must have impressed him with the fact that function is related to structure.

Nufer's operation was an epic of empiricism and no doubt a very lucky chance, but it was founded upon sound deduction and common sense, and the operator was in a peculiar way qualified to undertake this daring innovation. The successful result marked a splendid finish to an age of empiricism and heralded the dawn of scientific and rational surgery.

The brilliant effort of Nufer and the splendid contribution of Parè were notable preliminary events in the great revival of learning which recaptured the culture of the ancients and set in train those researches into all branches of knowledge which have transformed the world in the course of the last three centuries.

Leonardo da Vinci, anatomist and experimentalist, was the first to correct the erroneous views of the ancients by demonstrating the true structure of the lungs and disposing of the Galenic theory that the pulmonary veins carried air to the heart. His work was continued by Andreas Vesalius who became Professor of Anatomy at Padua at the age of 24, and published

in 1543 his great original work entitled *Fabric of the Human Body*, the quality of which is described by Singer in the following words: "It is a fair statement that the whole of the modern descriptive anatomy may be treated as a comment and correction and amplification of Vesalius."

Physiological research is essentially associated with the work of Fabricius who succeeded Vesalius at Padua and taught in that school for 50 years, and with the immortal name of Harvey who studied under Fabricius in Padua in 1600 and described the circulation of the blood in 1628. This epoch-making discovery revealed the essential unity of anatomy and physiology and it afforded a rational basis for conservative treatment by demonstrating the perfect correlation which exists between healthy structure and normal function. All medical research since the Renaissance has been concerned with the elucidation of the physiological and pathological problems which arise out of this relationship and with the provision of therapeutic measures for the repair of structure and the restoration of function.

It would be impossible to mention a tithe of the great men who, from Nufer and Parè to Pasteur and Lister, have been responsible for the transition in science and medicine, but we may well remember that our own profession has played an honourable part in this process. To-day we may recall with pardonable pride the names of Simpson for his pioneer work in anaesthesia, Semelweiss, Charles Clay and Oliver Wendell Holmes for their great researches into the problem of puerperal sepsis, and of Spencer Wells and Keith, who led the surgical vanguard in the pre-Listerian period which marked the close of the Renaissance.

During this transition period, gynaecology remained in the background of surgery and its practise was confined to the tapping of ovarian cysts, the removal of polypi and the application of various remedial agents to the accessible parts of the genital tract.

At the beginning of the nineteenth century, surgery was still faced with two of the major problems which had confronted the Greeks—the treatment of shock and sepsis. The discovery of chloroform removed one difficulty, but it added to the gravity of the other in so far as anaesthesia inevitably increased the number of operations without doing anything to reduce the suffering and mortality produced by post-operative sepsis and gangrene. It is true that Spencer Wells and Keith had developed a technique which was greatly superior to that of their predecessors, but they did not solve the problem and it remained for Pasteur and Lister to provide the real solution, and with their monumental work

we may justly regard the Renaissance as complete and the modern era as begun.

THE MODERN ERA.

The modern era has been characterized by the development of a surgical technique which has made every part of the human body accessible to the surgeon and amenable to surgical treatment. This technique has also provided a new medium for physiological and pathological research, and directly and indirectly it has been responsible for the discovery of our best methods of conservative treatment; these methods are well known and do not require any detailed description.

THE FUNCTIONS OF THE UTERUS.

Before the results of conservative treatment can be interpreted in terms of uterine function, it is necessary that the functions of the uterus should be discussed and evaluated. These functions are six in number: (1) reproductive, (2) menstrual, (3) sexual, (4) metabolic, (5) psychological, (6) sociological and legal.

Reproductive Function.

Reproduction is the supreme privilege of woman and the main function of the uterus. This capacity is present during a limited period of life, and even within this period, fertility progressively diminishes as age advances and, therefore, the loss of the reproductive function is less serious to a woman of 45 years of age than to a comparable patient who is 10 years younger. And since the exercise of this privilege is restricted to married women, the power of procreation is more valuable to a wife than to a spinster but, nevertheless, the possession of this faculty is of great importance to all women of the childbearing age whatever their age or status may be. In all cases it must be remembered that this function may have been impaired or destroyed by disease before the patient comes under observation and that it is clearly impossible to employ conservative treatment on behalf of a function which no longer exists. In such circumstances the capacity for childbearing must be discounted and attention paid to the possibilities of preserving the subsidiary functions of the uterus and its adnexa.

Menstrual Function.

Menstruation is an essential activity of the non-pregnant uterus

during the epoch of active menstrual life which coincides with the period of childbearing. From the physical and hormonal point of view, normal menstruation exercises a considerable influence upon the general health of the patient, and in addition it has a marked psychological value, in so far as a regular painless rhythm is believed to indicate the presence of healthy sexual and reproductive organs. Serious departures from the normal in regard to menstruation, whether they are the result of disease or the sequelae of treatment, are apt to induce feelings of defeatism and sex inferiority which are injurious to the mental and physical health. Many women dislike the process of menstruation, but are loath to part with it and, although for reasons of pain or excessive loss the patient may be willing and indeed anxious for menstruation to be suppressed, even then the loss of this function is generally regarded as a sacrifice.

Sexual Function.

The presence of the uterus complete in structure and healthy in function is essential to normal sexual relations. The removal of the cervix is stated to diminish the sensitivity of the patient and to induce a degree of frigidity, while the loss of the whole uterus interferes with the act of coitus by reducing the length of the vagina and substituting a fibrous and perhaps painful scar for the resilient and sensitive structures which normally form the roof of the canal. In cases of dyspareunia due to painful retroversion, Gilliam's operation or ventral fixation is obviously a conservative procedure and even hysterectomy may be regarded as conservative in its effect upon the sexual relations when the excision of a tender and functionless uterus removes an otherwise insuperable barrier to intercourse and renders coitus painless. In addition to the physical sequelae of radical operations upon the uterus, hysterectomy has a serious effect from the psychological point of view, since many women believe that the removal of the uterus will unsex or otherwise unfit them for marital relations. The significance and the severity of the psychological symptoms which follow this operation vary in accordance with the nervous constitution of the patient, the extent of the disease and the type of treatment, but they are rarely absent and their importance must never be overlooked. One woman will willingly sacrifice her uterus with all its functions in the hope of being restored to good health, while another will endure almost any degree of discomfort and even pain rather than part with this organ, however damaged and disordered its function may be.

Metabolic Function.

Little is known about the internal secretions of the uterus, but it is universally recognized that in conjunction with the ovary the uterus exerts a profound effect upon the balance of the endocrine system. It has been shown that the functional activity of the gonads and the endometrium are closely correlated and that the menstrual rhythm is determined by the internal secretion of the ovary and cannot continue when that organ is removed. It is also probable that the function of the gonad itself is dependent upon the activity of the endometrium and that withdrawal of the influence of the uterus is followed by disuse atrophy in the gonad. Moreover the operative technique necessary for hysterectomy is apt to inflict injuries upon the vascular supply of the ovary and to induce changes of a mechanical nature (such as cysts or adhesions) which have a directly injurious effect upon the structure and function of the ovary. Hysterectomy is generally followed by menopausal changes sooner or later even when the ovary is conserved or grafted, and although something may be done to relieve such symptoms by suitable hormone therapy, it is at present impossible to eliminate completely the metabolic effects which follow operative removal of the uterus or radiological destruction of the uterine function.

Mechanical Function.

The uterus has close surgical relations with the bladder, rectum, pelvic muscles and other structures, and many operations upon the uterus, conservative as well as radical, disturb these relations by leading to the formation of adhesions between the viscera or by interfering with the integrity of the pelvic floor and its associated ligaments and fasciae.

Uterine Function from the Sociological and Legal Points of View.

From the sociological point of view, the uterus is the source of man power, and as such is of national importance. The interruption of pregnancy and the practice of sterilization imply the inhibition of reproduction and involve a process which differs only in degree from the destruction of function which follows hysterectomy or the employment of radium; it is open to question whether the application of these operations for eugenic purposes has so far yielded any results of the slightest value to the community. It must also be remembered that since the reproductive function is a matter of national importance, the capacity to perform this function is a valuable personal asset to the individual

and conversely that its loss may sometimes be a matter for damages and compensation. In a recent case in Liverpool, an 8-para, 32 years old, eight months pregnant, stumbled while walking along an unfinished road and later sued the Corporation for damages. The patient was delivered prematurely of twins and the labour was complicated by ante-partum haemorrhage and followed subsequently by the symptoms and signs of subinvolution. This condition was treated six months later by the application of an amount of radium which implied the probable loss of the reproductive function. The patient received £375 in settlement of her claim and the legal advisor of the Corporation was well satisfied with this amount, for he feared the learned judge might assess the loss of the reproductive function at a much higher figure.

THE GENERAL PRINCIPLES WHICH UNDERLIE THE APPLICATION OF CONSERVATIVE METHODS.

1. If the preservation of life is the primary duty of the surgeon, then both structure and function must be sacrificed in the interests of life itself, and the merits of any therapeutic procedure must be judged primarily by the risk which it entails for the patient. It is, therefore, essential that the mortality of every conservative operation should be carefully investigated and recorded. Caesarean hysterectomy, for example, is less conservative than Caesarean section, but, in the presence of severe sepsis or trauma, the retention of the uterus in order to conserve its function may imply a risk which is quite unjustifiable.

2. The choice of method must be considered from the point of view of its effect upon the restoration of function. We must first try to determine the amount and type of function which has been destroyed by the disease and then estimate the possibility of conserving whatever function is left in the affected organ. For example, when serious pelvic infection has destroyed the reproductive function and transformed menstruation into a painful, pathological and perhaps unsupportable process, the only remaining function which is worthy of consideration is coitus, and in such circumstances, even the removal of the uterus may be regarded as a conservative operation if it relieves dyspareunia and restores the sexual function to normality.

3. The conservation of structure is admittedly the least of the three constituent parts of conservatism, but nevertheless it must always be taken into account. So long as the retention of a damaged organ does not increase the immediate risk or prejudice

the future health of the patient, there cannot be any justification for excision on the grounds of loss of function; otherwise it would be necessary to remove every parous uterus after the menopause. The observance of this rule acts as a safeguard against mutilation, for it emphasizes the fact that although structure is subservient to function and must sometimes be sacrificed in its interest, there should never be any unnecessary sacrifice of tissue.

4. Finally the physician should not allow himself to be carried away by personal predilection for a particular procedure, but should cultivate a broad outlook upon therapeutics and should adapt his treatment to the requirements of the individual patient, choosing that method which offers the best functional result with the least risk to the patient and with the minimal sacrifice of tissue. Very often the optimal result means making the best of a difficult situation and a decision as to the best method of treatment can only be reached after a full consideration of the extent of the disease, the severity of the functional failure and the age, status and personal requirements of the patient. For example, myomectomy for multiple fibroids in a recently married woman 40 years old may be followed by the happiest results, but it is open to question whether the additional risk is justified when the patient is unmarried or unwilling to face the prospect of a future operation.

THE GENERAL RESULTS OF CONSERVATIVE TREATMENT.

Bearing these principles in mind, we may endeavour to assess the scope of conservative treatment by considering the general value of the methods now available.

CONSERVATISM IN OBSTETRICS.

Among the simple expectant methods of conserving the function of the uterus, the practice of antenatal work in its broadest sense and the use of conservatism in the course of labour must take pride of place, but unfortunately the application of pre-natal care has been restricted to the period of pregnancy alone, and the opinion has gained ground that so long as pregnancy is properly supervised there can be little necessity for special care during labour. The truth is that the antenatal period does not begin at the first visit of the patient to the doctor, nor strictly speaking at the moment of conception, because the size of the pelvic bones, the growth of the uterus, and other factors concerned with reproduction, are determined by influences which arise during the intra-uterine life of the individual and come into action at and after puberty.

Moreover the antenatal period does not end with the termination of pregnancy or with the onset of labour, but continues throughout the act of birth, and is completed only with those final contractions and retractions of the uterus which follow the expulsion of the placenta.

The universal adoption of pre-natal care, conscientiously applied throughout the whole of pregnancy and labour is undoubtedly competent to reduce the maternal mortality and to remove a great deal of that morbidity which at present impairs and even destroys the function of the puerperal uterus. Unfortunately the erroneous ideas which have prevailed in regard to the scope of antenatal work have had very injurious effects upon the practical conduct of labour, for, as a result of the emphasis laid upon the value of the supervision of pregnancy (and the foolish conclusion that under such circumstances labour will not require any supervision) the art of obstetrics has undoubtedly declined and a new race of obstetricians have arisen who regard labour as a surgical operation and Caesarean section as the only means of dealing with any complications which may accompany the act of birth. Happily the recent and increasing popularity of the lower segment Caesarean section has set up a reaction in favour of conservatism by demonstrating that it is possible and indeed advantageous to give the natural powers a fair trial (trial labour) before resorting to surgical delivery.

Maternal morbidity, as distinct from mortality, with which of course it is intimately associated, has become a matter of grave concern to the profession and it has recently attracted the attention of the general public and the Government, who are beginning to realize that the mismanagement of labour is largely responsible for much of that avoidable disease and disablement which forms such a large proportion of gynaecological work. It can hardly be doubted that better midwifery will greatly affect the conservative treatment of uterine function by reducing the amount of puerperal morbidity and thereby rendering any form of remedial treatment unnecessary.

And if these strictures may fairly be applied to antenatal work, they may be applied far more forcibly to post-natal care which has been even more neglected and misunderstood. By common consent, the puerperium is generally disposed of in 14 days, or less, although it is well recognized that a much longer period must ensue before involution can become physiologically complete in a healthy woman. As a result of this misunderstanding, many pathological conditions are allowed to arise in the post-natal

period which may persist throughout the life of the patient, although it is well known that the application of appropriate treatment at the proper time would prevent their development.

Further research, better hospitals, higher standards of medical and nursing education and the cordial co-operation of all the public services are required before the urgently needed reform of antenatal and post-natal care can be accomplished, but there can be no doubt that such an achievement will vitalize the midwifery service and react with enormous benefit upon the health and happiness of the women of this country.

CONSERVATISM IN GYNAECOLOGY.

As a natural result of the introduction of the antiseptic system of surgery, gynaecological treatment became increasingly surgical in its technique and more radical in its method, until it had reached a stage at which expectant therapy was practically non-existent; in the course of this process, pessaries were replaced by plastic operations, and simple types of hysterectomy gave way in favour of the more radical methods which eventually culminated in the Wertheim technique for carcinoma of the cervix. But of recent years a reaction has set in, and the futility of irrational and ablative operations founded upon erroneous views of the causation of pelvic disorders has been generally realized.

The Treatment of Uterine Infection.

For the conservative treatment of infective diseases, truly specific or curative methods have yet to be discovered, and in spite of much immunological research, a great deal remains to be learnt about the fundamental questions of local and general resistance and the virulence of organisms; and until these problems have been elucidated, conservative treatment must continue to be palliative rather than curative. Moreover the peculiar morphology of the genital tract and the inaccessibility of its deeper parts to medicinal agents, the proximity of the bladder and bowel, and the constant presence of organisms in the canals which perforate the pelvic floor, are clinical factors which render any form of treatment both tedious and difficult. Another source of disability in connexion with the control of uterine infection and the conservation of uterine function in the presence of infective disease, arises from the frequent exposure of such patients to the risk of re-infection when they return to their ordinary activities and to the source of their primary infection.

In spite of these handicaps, depletion, rest and simple uterine drainage are still the most successful methods for the treatment of

acute uterine infection, but their employment has a much less satisfactory effect upon the sub-acute and chronic cases. Palliative methods such as the application of heat, diathermy, vaccines and hydrotherapy are competent to relieve symptoms in milder cases, but even here they frequently have little effect upon the restoration of those functions which have been impaired by the infective process. In the most inveterate cases, non-operative methods are rarely successful, and sooner or later it is necessary to substitute radical for conservative procedures if the patient is to be preserved from the evils of chronic ill-health or complete invalidism.

The Treatment of Innocent Tumours of the Uterus.

Conservative methods may sometimes be applied with advantage to innocent tumours, which can be excised without interfering with the structure and function of the uterus; the scope of this method will be considered later.

Mention must also be made of the advantages and disadvantages accruing from the conservation of the cervix when performing the operation of hysterectomy for simple tumours and other lesions in which malignancy can be excluded. There can be no doubt that since carcinoma of the cervix is restricted almost entirely to the parous uterus, the presence of the cervical stump after sub-total hysterectomy is a potential source of future carcinoma, and that on this account the sub-total operation involves some risk to the patient. There are also obvious disadvantages in leaving an infected cervix *in situ* when performing hysterectomy for pelvic infection and on these grounds it has been urged by many influential writers that the sub-total method is a bad one and that it should be given up entirely in favour of pan-hysterectomy.

It must be admitted that there is much to be said for this point of view and that it is unwise, if not unsafe, to perform the partial operation when the cervix is infected or shows changes which are in any way suspicious of present or future carcinoma. At the same time, this principle should not be pushed too far, particularly in regard to the risk of neoplasia, because it has been shown in the most recent paper on this subject that while the incidence of carcinoma is approximately 0.3 per cent, the actual additional risk involved by the performance of the larger operation is about 2 per cent.

If Fahnrich's figures are correct, it would appear that a patient upon whom a total hysterectomy is performed for an

innocent lesion must incur an immediate additional risk of 2 per cent in order to avoid a future hypothetical risk of 0.3 per cent.

In Liverpool, however, the incidence of stump carcinoma appears to be greater than 0.3 per cent and the differential mortality between total and subtotal hysterectomy to be less than 2 per cent, so that our experience suggests that Fahndrich's deductions from mass statistics must be accepted with some reserve.

The Treatment of Malignant Disease of the Uterus.

Conservatism has so far played little if any part in regard to the control or cure of malignant disease, although it is stated that the practice of pre-natal care has reduced the incidence of carcinoma in those clinics which have devoted special attention to the repair of cervical injuries sustained during labour.

But so long as the pathogenesis of cancer remains unknown it must be impossible to prevent the onset of this disease or to employ rational measures for its control and treatment. At present specific methods are not available and the best results are due to the employment of radical methods at the earliest possible moment, preferably during the pre-malignant stage of the disease. When dealing with pre-cancerous or doubtful lesions, procrastination may be fatal to the patient, and for this reason expectant treatment must be very carefully controlled when it is being used for conditions which are in any way suspect of malignancy.

It would be impossible to pass over this subject without some reference to the brilliant investigations of the late Professor Blair-Bell and his fellow-workers into the aetiology and treatment of cancer. These researches have shed a new light upon this dark and difficult problem, and they have led to the discovery of a form of treatment which may some day prove to be the basis for a curative and conservative method of dealing with malignant disease.

The Treatment of Uterine Displacements.

The post-war period has seen an increase in the number of operations performed for prolapse of the uterus with a corresponding improvement in the functional results of such treatment, and the same period has witnessed a marked diminution in the number of the operations which were formerly undertaken for the treatment of retroversion. Both these changes must be regarded as conservative in the best sense. In the first place the Manchester operation for prolapse has greatly extended its scope

and influence, because it has been found to be free from risk, curative in regard to the mechanical defect, and at the same time conservative in its action upon the function of the genital tract. And secondly, the tendency to discard operations in favour of expectant methods for the treatment of retroversion is a conservative movement of the most necessary kind, because it implies a declension of a type of operation which has been performed far too readily in the past.

New Methods in Gynaecology.

Surgical methods have declined in number for a more reputable reason than the mere suppression of unnecessary operations, namely on account of the discovery of better methods, such as radium and X-rays, which have largely displaced hysterectomy in the treatment of intractable uterine haemorrhage, and have undoubtedly reduced the mortality which was previously associated with such diseases. X-rays and radium therapy may rightly claim to be conservative in type from the point of view of structure, but it must be remembered that the gamma-rays set up destructive tissue changes which inevitably impair and sometimes destroy the menstrual, reproductive and metabolic functions of the uterus. Such effects are admittedly negligible when malignant disease is in question, but they assume a serious importance when radium is applied for the relief of simple functional disturbances in young women, and they will, therefore, be considered more fully later.

Hormones have attracted much attention for a considerable time, but they are still regarded with suspicion by many clinicians; happily the old days of blind empiricism have given way to a more enlightened epoch in which the therapeutic application of these substances has been placed upon a rational and scientific basis through the medium of much valuable research into the physiology of the endocrine system and its influence upon the sex organs. Sufficient progress has already been made to warrant the hope that hormone therapy will soon replace radium and X-rays for the treatment of many functional conditions of the uterus and will render surgical methods obsolete.

The Empirical Method in Gynaecology.

In spite of all our modern researches, many pathological problems remain unsolved and we are compelled to fall back upon empirical methods.

We are still unable to control the spread of infection or to

promote a physiological type of healing in tissues recovering from inflammatory reaction. The nature of intractable uterine haemorrhage is still obscure in spite of the interesting work on hormone therapy, and it remains to be shown how much can be achieved by this method.

It is difficult to treat dysmenorrhoea on a rational basis, because the sources of uterine pain are largely unknown. The routine employment of many operations such as dilatation for dysmenorrhoea, and curettage for endometrial thickening, the exhibition of hormones for uterine malfunction, and the use of serums for the control of infection are frequently carried out on purely empirical grounds.

It would be foolish to suggest that empirical methods are necessarily unsatisfactory, indeed it is obvious that much of our best treatment is empirical in character and that it is bound to retain this quality so long as our knowledge of the natural history of disease remains incomplete; but it would be equally foolish to shut our eyes to the fact that claims are made on behalf of new remedies, and new operations, by those who introduce them which are not substantiated by the subsequent experience of other less prejudiced observers.

The enthusiasm displayed for Apostoli's electrical methods, the application of *accouchément forcé* for the treatment of eclampsia, and the success of Potter's advocacy of internal podalic version, demonstrate that irrational and even dangerous forms of therapy may enjoy a short-lived fame or rather notoriety, and show that we are just as credulous as our predecessors and almost as prone to mistake propaganda for proof, and to confuse fact with fancy.

This paper upon the general results of conservative treatment of the uterus has been written in conjunction with the work of four colleagues who have devoted their attention to the study of four particular problems, namely myomectomy, endocervicitis, radium treatment for intractable bleeding, and hormone therapy. Individual contributions incorporating the results of these investigations were presented to the British Congress of Obstetrics and Gynaecology at Belfast, in April 1936, by Dr. A. A. Gemmell, Dr. S. Herd, Mr. P. Malpas, and Dr. T. N. A. Jeffcoate.

We desire to express our most grateful thanks to the distinguished gynaecologists throughout the world who have answered our *questionnaires* and favoured us with their personal com-

munications. We are also indebted to many of the Fellows and Members of the British College of Obstetricians and Gynaecologists for their advice and help, and we gladly acknowledge a special debt of gratitude to our colleagues in Liverpool for their generosity in placing their clinical material at our disposal.

[The discussion on this subject at the Congress of Obstetricians and Gynaecologists at Belfast is on page 764.]