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Editorial

Chiropractic and Medicine

TWO successive Bills have been introduced into the Legislature, one in 1954, the other in 1957, to give authorization to the practice of Chiropractic in Nova Scotia. Both have been rejected by the Legislature. On both occasions representations were made against their passage by the Provincial Medical Board and The Medical Society of Nova Scotia as representing the medical profession of this Province. During the past Session and during the Debate on the Bill a comment was made by an Honourable Member that the Medical Profession and the Chiropractors should in some way compromise their differences. It is in respect to this remark that we respectfully comment:

The Medical Act provides for the regular licensing of Chiropractors who have undergone a course of education of the type and with the standards required of any regular practitioner of medicine, plus a special examination by proponents of their own discipline. This has been in force since 1923 and in that period no chiropractor has offered himself for examination for a license. These facts speak for themselves: the present practitioners of chiropractic do not choose to qualify by the means open to them in the Laws of Nova Scotia.

The events which have transpired since 1923 make this appear strange. As chiropractic literature clearly indicates they have endeavoured to improve their standards of education by using medical text book and giving their students courses along the lines followed in medical schools. It is also strange, that in 35 years not one of them has sought the extra and admittedly superior training that is necessary for a preliminary medical degree. It is suggested that the reason for this is twofold:

1. That they feared that the knowledge gained in an orthodox medical course would divert the individual from the ultimate goal as a chiropractor. In fact this is abundantly clear when we learn that anatomy which is surely an objective study, if anything is, must be taught in their schools by chiropractors.

2. Their candidates for training were and usually are insufficiently educated to enter medical schools. Chiropractic training and a doctor's degree with the privilege of caring for the sick at a price is a much easier way than attempting the more difficult medical course.

For the moment assuming that the chiropractor has taken the training provided in the best schools of the cult in America it still falls short of that given in an accepted medical school. Thus, if that point of view is legitimate it must be logically concluded that in making chiropractic a legal procedure, two standards of medical practice are established, a medical one in first place and a chiropractic one in second place.

The chiropractor reacts to this logic with some bitterness and defends his position on two fronts:

1. He excludes surgery and sometimes midwifery and drugs from his endeavours.

2. He narrows all his treatment to chiropractic.

In thus defining his position he at once admits that although he limits his field of endeavour and narrows his means of treatment, he must first diagnose *all* disease. Allowing first rate training and experience his means of doing this are inferior to those employed some sixty years ago by the medical profession. On this very humble basis he determines the nature of an illness and decides, (a) does it require surgery, (b) does it require the use of drugs, (c) does it relate to the practice of obstetrics. If he decides these questions in the negative he goes on to treat the case. So that from the start he is faced with two major chances of error:

- (a) In diagnosis,
- (b) In the measures used to determine whether or not he can properly treat the patient.

In practice, allowing for his unavoidable mistakes in diagnosis, he does not confine himself to the original and defined concept of chiropractic in his treatment. He uses all the physiotherapeutic machines and "gadgets" he can afford. We fear and we have good reason to know that regardless of whether a patient needs surgery or needs medication he will give chiropractic treatment as long as he possibly can. This may be an act of faith or a deliberate attempt at malpractice—we would not know.

We submit, therefore, that there are no bases on which chiropractors and physicians can find a common agreement. The chiropractor refuses to follow the requirements of the law established to set forth a minimum standard of qualifications for those who treat the sick. By his daily acts he is breaking the law; he is employing inferior training and methods. How can any compromise be possible.

This naturally raises two questions:

1. Why has the medical profession done little or nothing about it? The answer is simple: prosecution is interpreted by the public as persecution. It advertises a martyr and gives him an undeserved crown of laurel. It would be as wise and as effective to denounce Dodd's Kidney Pills as a cure for kidney ailments. The only difference lies in the fact that these pills are harmless. For all that the profession has on two occasions in the past four years tried its best to demonstrate to the legislators of this Province the fallacies and detriment to the public health inherent in the practice of this cult. It has been difficult at times to confine remarks to a degree of moderation which is necessary to carry conviction to reasonable and tolerant minds. If in any degree this has been lacking it is from a deep sense of belief that the proponents of this enabling legislation were acting from the most selfish motives possible and not from a sustained desire to aid the sick and afflicted.

2. The second question, and one which has troubled many legislators and good citizens trying to see through this controversy is this: "Why are people suffering from a variety of complaints benefitted by chiropractic? Why do they get relief from this when medical treatment fails to provide it?"

To answer this it is first necessary to say that most doctors in a busy day encounter patients who have been treated by another doctor with little success, but a new approach, a different point of view and the enlistment of inherent though latent forces for cure in the patient himself effects "a miracle." This is commonplace. Unfortunately such occurrences are not shouted from the housetops. The patient thinks he has secured a "better doctor," that is all,

We have no doubt that people also find "better chiropractors," and most general practitioners see patients frequently who say, "I tried a chiropractor first but he didn't help me."

Physical contact of the hands of an operator with the body, manipulation and forceful suggestion, are potent curative measures in the hands of any person regardless of training. Chiropractic is no mysterious cure. It is as old as mankind himself, the influence of mind over matter.

Contributed

FOREWORD

Obstetrics and Gynaecology Issue

The papers included here are based on talks given by members of the Department of Obstetrics and Gynecology—under the aegis of the Dalhousie Post-graduate Division—at their last Refresher Week. Of course, it is a far cry from reading these lucubrations in the cold blood of the study, to hearing the golden words in the actual shining presences. However, it is our hope that these few baked meats from the post-graduate table will give some sustenance to those of the Bulletin's readers who search humbly after truth. If they should be the cause of bringing in two or three such to join us in that search at our next Course, we will be more than repaid—and more than glad to see them.

H. B. A.

Difficult Labor

W. G. COLWELL

THIS condition is rarely met with in the woman with a normal pelvis. Most of the difficulties that arise in those women, who have either some abnormality of the bony pelvis, or who have a baby just a bit too large for what would ordinarily be considered an averaged sized pelvis.

In dealing with this subject it might be as well to divide it into different classifications:—

- (1) Those which might arise because of some abnormality of the bony pelvis.
- (2) Anomalies of uterine contractions.
- (3) Structural abnormalities of the uterus or pelvic organs.
- (4) Interference too soon in the conduct of labor.

(1) **Abnormalities of the Pelvis:**—Probably the most common abnormality of the female pelvis that one encounters, is the mid-plane contraction, in which the transverse diameter, or the distance between the ischial spines, is shortened. For practical purposes the lower limit of normal is $9\frac{3}{4}$ cm. This pelvic abnormality can be detected clinically, on pelvic examination, by noting that the spines are prominent and in marked cases jut inwards towards each other. This is the type of pelvis in moderate or marked degree in which we get the so-called transverse arrest. Probably the most frequent circumstances under which this occurs is where the baby enters the true pelvis as a posterior, and being a posterior there is only slight deflection of the head and late engagement. This results, in many instances, in a long first stage of labor because of the poor fit of the foetal head to the cervix in it's deflexed attitude, resulting in slow and unequal dilation. Where there is obvious narrowing of the transverse diameter of the mid-plane this should if possible be checked by X-ray examination and, if the degree of narrowing is confirmed by X-ray, it is probably better, particularly in a primipara, to handle the case by Caesarian section.

The next most common abnormality is the inlet contraction, which is seen in the flat pelvis and which is designated by the term platypelloid pelvis. This is a narrowing of the anteroposterior diameter of the inlet and results in the failure of engagement of the foetal head. There are, of course, degrees of this and where there is only a mild shortening of the AP it is wise to allow a test of labor, because in many instances the foetal head will mold itself sufficiently to become engaged, and once engaged, the rest of the pelvis usually offers no difficulty.

The other abnormality with which we need to concern ourselves is the outlet narrowing which occurs in the male, or funnel, type of pelvis and which, if it holds up labor, requires Caesarian section. This type of contraction however is, in our experience, quite rare.

(2) **Anomalies of Uterine Contractions:**—Under this heading we consider uterine inertia of which there are two types: (a) Primary and (b) secondary. (a) Primary uterine inertia is in most instances not true labor, because we find here that the pains or contractions are weak, ineffectual, and irregular. As we all know, true labor is a steady progression, whereas in so called primary uterine inertia there may be relatively long periods of absence of pains or con-

traction. This being so it does not offer much difficulty in the handling of labor.

(b) Secondary uterine inertia is fairly common and usually makes its appearance because of difficulty experienced by, in one or more of the three components of labor, the passage, the passenger and the force. If you analyse your cases of secondary uterine inertia you will find some abnormality existing which will come into one or more of these categories, the most common of which is a pelvic abnormality, or abnormal position or presentation of the foetus during labor.

(3) **Structura, Abnormalities of the Uterus or Pelvic Organs:**—Under this heading we have to consider fibroids of the uterus, particularly those occurring in the lower uterine segment, which result in the mechanical blockage of the descent of the foetus; ovarian growths which may block the head from entering the true pelvis and the cervix uteri which may be stenosed due to previous cauterization or repair which may result in slow dilation and finally we have all undoubtedly seen the cervix in multipara which will dilate almost completely but still have a thick anterior lip.

(4) **Interference too soon in the Conduct of Labor:**—In this category may I respectfully remind the readers that the average duration of labor in primipara is 18 hours, of which the first stage is 12 and the second 6 and in multipara 12 hours, the first stage being 10 hours and the second stage two, so that one should not interfere too soon because the labor seems unduly long unless there is a good indication, either foetal or maternal. In short, a lot of the difficulty which may arise during the conduct of a labor may well be man made.

The Handling of the Difficulties Which May Arise During Labor:

First stage: The woman with weak, irregular and seemingly ineffectual pains is more likely to be of what we call a nervous temperament, that is, high strung and apprehensive. Those of us who advocate natural childbirth find that the consequent removal of fears and inhibitions from the woman's mind, overcomes to a large extent this type of difficulty in the first stage of labor. If, however, you are faced with this problem it must be dealt with, and reassurance to the patient and eliminating family interference, and if necessary the giving of a mild sedative will, in most instances, help tremendously.

In secondary uterine inertia, for which no obvious cause can be found, and where there is no foetal distress, thorough sedation is the treatment of choice and by this I mean the giving to that individual a good rest of 2 to 3 hours by means of morphine or one of its derivatives. Of course, if the cause is obvious then steps must be taken to correct or overcome the cause of the difficulty. Patience is a virtue and in no other circumstances is it more necessary than in the handling of a long labor. Interference too soon has gotten many a doctor into difficulty which all too often has resulted to severe trauma both to mother and child.

With respect to the handling of relative disproportion, a trial of labor is perfectly justified. By a trial of labor is meant, several hours of good strong regular contractions—at least three or four hours. Then if no progress has been made, Caesarian section must be considered. In the absolute disproportion case, Caesarian section is the treatment of choice, although one can, if one chooses, allow a few hours of labor to enable the lower segment to thin out. This makes the operation somewhat easier in respect to blood loss.

Delays in the latter part of the first stage of labor without an obvious abnormality except slow dilation, can quite often be overcome by rupturing the membranes if the cervix is dilated two or more cms. By so doing the head is enabled to fit the cervix more snugly and one is surprised to find how much more quickly the labor progresses.

Second stage delay is seen most commonly where there is some narrowing of the transverse diameter of the mid-plane resulting in a degree of transverse arrest. Here patience is vital, because in the majority of cases, if the patient is allowed to continue with adequate rest and not allowed to get over tired, most posteriors will rotate anteriorly, although a few will rotate posteriorly, and deliver themselves spontaneously. If, however, after a reasonable time this does not come about then something has to be done. If the degree of narrowing is below the lower limit of normal, and despite a fair trial, labor has not progressed satisfactorily, then that patient should be sectioned. With less marked narrowing, there are other ways of handling this, however, and they are as follows: manual rotation, followed by forceps application and delivery. If manual rotation is not successful, either anteriorly or posteriorly, then rotation may be done with forceps in one of four ways. (1) The Melhado manoeuvre in which the head is disengaged, rotated manually above the brim of pelvis and then forceps applied. (2) A variation of that in which the forceps are applied in the mid pelvic position, the head disengaged with the forceps in place and then rotated and delivered. (3) The key in lock manoeuvre in which a pelvic application of the forceps is made to the baby's head and the head rotated by rotation, readjustments of the blades being made until it has been gotten around anteriorly. (4) The Scanzoni manoeuvre, which is alright in expert hands, but is a dangerous procedure otherwise because of possible damage to the maternal structures and the baby's head.

Breech presentations may offer some difficulty during labor. Because of the tendency of the membranes to rupture early due to the poor fit of the breech to the cervix, the first stage may be unduly long and it is as well to remember this. By far the most common presentation of the breech is the full, or frank, or breech with extended legs constituting, certainly in my experience, about 90% of breech deliveries. During the second stage it is advocated by some that the breech presentation by the buttocks be undone by bringing down the legs. This is, in my opinion, unnecessary with a normal pelvis, and not without danger to the baby because of the handling which may cause the baby to inspire and because of the possibility of breaking a limb. This manoeuvre, however, has a very definite place in marked degrees of outlet contraction in which the breech is forced down into a gradually narrowing area as in the marked android pelvis. I have only had to do this once. It is far better to allow breeches to deliver themselves until the legs are born, with a slight assistance perhaps when the buttocks crown, than it is to interfere before this phase of the second stage is completed. With respect to delivery of the after coming head, the majority of men will probably, outside of hospital, have to use the Mauriceau-Smellie-Viet manoeuvre. The secret of success in this procedure is to keep the after coming head out of the narrowest diameter of the inlet, namely the AP, and keep it in one or other of the oblique diameters of the inlet. The after coming head is pushed out from above, not pulled out from below, when you are using the manual technique. In hospital, with assistance, if there is any difficulty with delivery of the after coming head, forceps delivery is the best method of handling it and, as you know, there is a special forceps for that, called the Piper.

Diabetes Mellitus (Melituria) in Pregnancy

K. M. GRANT, M.D.

PRIOR to insulin the association of diabetes and pregnancy was unusual and of those who did become pregnant some 25 percent died, and more than 50 percent of the babies were lost. With present day methods of treatment, however, most diabetic women marry and have children. The disease is now encountered about once in every five hundred pregnancies.

Many studies have indicated that deranged carbohydrate metabolism, which characterizes the pregnant diabetic patient may produce various obstetrical complications such as, early intra-uterine fetal death, large fetal size, congenital anomalies, maternal toxemia, hypo-glycemia and coma.

The early recognition of the diabetic patient, or even the unsuspected pre-diabetic is important, and continuous, routine examination of the urine for sugar is an essential part of proper prenatal care. Although an occasional case of innocent glycosuria due to changes in the renal threshold may be encountered, diabetes mellitus must be suspected, until proved otherwise, whenever a positive test for sugar is found during pregnancy. One must not forget, however, that lactosuria may appear and give a positive Benedict's test, especially in the latter part of pregnancy in the preparation for lactation. However, I do not think lactose is a common finding in the urine and glucose should always be suspected. The differentiation has become much easier of late by the use of enzyme impregnated test papers (Tes Tape and Clinistix), which react specifically with glucose, thereby making the test for it simple enough for office screening.

When glucose is found on repeated urine examinations, including a.c. specimens, and especially if acetone is also found, and the clinical signs of diabetes such as thirst, polyuria appear, she should be thoroughly investigated, in hospital, and whenever possible the aid and advice of an internist should be obtained. Fasting blood sugar determinations may be inadequate in making the diagnosis, as they may be well within normal limits early in the development of diabetes. Postprandial blood studies, on the other hand, will reveal the diagnosis in most cases. However, the glucose tolerance curve is more sensitive and a more accurate indication of carbohydrate metabolism and should be carried out where any suspicion of diabetes exists, and preferably repeated at intervals during all three trimesters. During the first week of the puerperium further studies may give much help in future management.

Course of Pregnancy:—Generally speaking diabetes is more difficult to manage in pregnant than in non-pregnant women. During the first trimester, proper dietetic control may be difficult owing to the nausea and vomiting, and frequent readjustments in diet and insulin may be necessary to keep the diabetes under control. In the second trimester there is a lowered renal threshold, hypoglycemia is more common, and there is an increased requirement for food. Changes in insulin requirements should be based on blood sugar analyses in preference to urine examinations. In the third trimester, acidosis and toxemia are more common and one must exercise constant vigilance for early signs of these. Labor increases the likelihood of the complications mentioned in the third trimester, and if prolonged glycogen stores may be seriously depleted. It, therefore, becomes necessary to supply additional carbohydrate, intravenous

glucose has to be given not infrequently with insulin added to take care of such, and fluid intake should be kept at a fairly high level, especially if the labor is prolonged. Coma is a very real possibility during labor and constant vigilance must be maintained throughout its course.

The incidence of toxemia runs as high as 40% to 50% in diabetic women, and even higher in those with degenerative changes in the vascular system. One should be constantly on the watch for impending signs of toxemia, and hospitalization of such patients advised early, as toxemia superimposed on diabetes renders the risk much greater to both mother and baby. Where toxemia exists, the use of regular insulin instead of P-Z insulin is preferred, as it is better handled by the damaged liver and is more easily controlled.

Intrauterine death, congenital anomalies and polyhydramnios are all increased in the diabetic and should be kept in mind during the management of the pregnancy.

It is well known that babies of diabetic mothers tend to be much larger than average, some attaining rather large size even several weeks before term. It has been observed that women giving birth to babies above average weight, are more prone to develop diabetes in later years. This is a point well worth keeping in mind.

Prognosis:—Any pregnancy in any diabetic woman will likely result in failure unless she is given adequate diabetic and obstetric care. With such supervision, the maternal risk is but slightly increased, but becomes much more serious in those patients showing albuminuria and hypertension (toxemia) in early pregnancy especially. The risk is also greater in those with essential hypertension.

While proper care has done much to reduce the risk to the mother, and unless the diabetes is mild, the risk to the baby is still great, carrying a mortality of about 25 percent or even higher. It may well rise to 50 percent in cases inadequately managed. Many of these babies die in utero in the last three to four weeks of the pregnancy.

The incidence of hydramnios is considerably increased, one series reporting 48 percent of single pregnancies showing it. When present, there is a higher risk of fetal death, especially if it increases rapidly. Since congenital defects are more common in diabetes, it should be kept in mind especially when hydramnios is noted.

Management and Treatment:—Any patient with diabetes should be admitted to hospital early in pregnancy for study and stabilization. It should include examination of the fundi and the status of renal function. When severe retinal or renal disease is found, the prognosis is so poor that termination of the pregnancy should be advised.

Ordinary prenatal care has to be extended in these patients and they should be seen every two weeks by both the internist, wherever possible, and the obstetrician for the first five months, and every week thereafter, and any changes in urine, blood pressure (toxemia) carefully noted.

While the diet may have to be altered from time to time, it should generally provide not less than 200 grams of carbohydrate daily and 2 grams daily of protein per kilogram. Salt should be curtailed to four or six grams daily. Abnormal weight gains should be carefully checked.

Hormone therapy, favored and advised by some workers, does not seem to affect fetal mortality to any marked degree. The favorable results obtained would seem to be due to other factors, including careful diabetic and obstetric care.

Admission to hospital should be advised in all patients in whom the diabetes is difficult to control, for those who develop toxemia, if increasing hydramnios is noted, and when the pregnancy has reached approximately 35 weeks.

If the diabetes is mild and well controlled, if the X-ray at the 36th week shows a normal size baby, and if the patient can be kept under close observation preferably in hospital, delivery may be delayed until term. Such patients should not be allowed to go over term, however, and labor should be induced. If the cervix is ripe and other conditions are suitable for induction, rupture of the membranes will suffice in most cases. The pitocin drip may be necessary for those slow to start in labor following rupture of the membranes. Some prefer the induction with the pitocin drip first, then rupturing the membranes if such is needed to maintain good labor. Either method is satisfactory in the properly chosen cases.

It is a well established fact that most fetal deaths in utero occur during the last three or four weeks of pregnancy. Therefore, delivery at, or before, this time must be considered unless the diabetes is mild as noted above. This becomes more urgent if toxemia develops and cannot be easily controlled, if hydramnios increases, and especially so in patients who have already lost a baby by intrauterine death, then delivery prior to the date of such a catastrophe must be considered. The risk from prematurity in these cases is usually less than death in utero. Where the pelvis and cervix are suitable for vaginal delivery, and the baby not excessively large, induction of labor as mentioned in the previous paragraph should be tried. If, however, conditions are not suitable for induction when termination is deemed necessary, Caesarian section should be done without delay. A very high proportion of primigravidas will be managed best by section, and the properly timed Caesarian will salvage many babies who would otherwise be lost.

The number of women with diabetes requiring forceps delivery (especially mid-forceps) and manual removal of the placenta is definitely higher. These complications are associated with the higher incidence of larger babies predisposing to dystocia and malpresentation. The reluctance of the placenta to delivery spontaneously suggests some abnormal placental physiology and attachment.

The changes in insulin requirements are best based on blood sugar analyses rather than urinalyses. The regular type of insulin, rather than the P-Z insulin should be utilized whenever complications arise, as it is more easily handled by the liver and a better degree of contact is maintained. Hence, during labor, or delivery by Caesarian section, regular insulin should be used to maintain blood sugar values between 150-175 mg. While in labor, glycogen depletion may become serious and can be prevented by giving sufficient glucose by intravenous therapy to which has been added enough insulin to take care of the glucose used. In the severe diabetic, loss of control following delivery must be carefully watched for, especially if any infection develops.

Diabetes is hereditary, and since the incidence of diabetes developing in a baby of diabetic parents is about one in four, large families in such parents should be discouraged. Similarly, pregnancy should be avoided in women with advanced diabetes, in those who have had toxemia superimposed on the diabetes, and those with vascular lesions of any significant degree.

The Infant:—The newly born infant of a diabetic mother requires more than the usual amount of care in the immediate neo-natal period. Even though of large size, it is advisable to keep it in the incubator and treat as a premature

until satisfied it can carry on as a normal infant. These babies need glucose as a rule, and 5 percent glucose in water should be given several times during first day especially, to offset the hypoglycemia which these babies have in greater degree than those of non-diabetic mothers. Hyaline membrane disease is a definite complication in these babies, and may explain the relatively sudden death of some of these babies a few days after birth.

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Survey of Cord Blood Haemoglobin Levels in Normal Infants

The diagnosis of anaemia in newborn infants may be based on blood samples obtained from the umbilical cord, or on venous or capillary samples from the infants. Samples obtained directly from the infant's circulation have proved unreliable, since the haemoglobin level rises rapidly by varying amounts immediately after birth, as a result of transfer of placental blood into the infant's circulation. The additional plasma obtained in this way is removed from the circulation, so that there is little change in total blood volume; but an increase in haematocrit and haemoglobin level takes place. If the cord is clamped or tied early, this transfer is prevented (DeMarsh, Alt, Windle and Hillis, 1941).

In addition, there is usually a considerable difference between venous and capillary levels, the latter being higher (Mollison and Cutbush, 1949). For these reasons, anaemia is best detected in cord blood.

Normal values for the haemoglobin concentration in cord blood have been published by a number of workers, but many are based on a small number of observations. However, Mollison (1951) found a mean value of 16.6 g. per cent (S.D. 1.5.) in a series of 134 cases. Marks, Gairdner and Roscoe (1955) on 221 cases, reported a mean of 16.9 per cent (S.D. 1.62). In the latter series, no correlation was found between foetal maturity and haemoglobin level, which is in accord with these results. Earlier work (Walker and Turnbull, 1953) had suggested that abnormally high levels were associated with post-maturity.

The cord blood haemoglobin level of 280 healthy infants was estimated. The levels ranged from 115. g. per cent to 21.0 g. per cent, with a mean of 15.45 g. per cent.

No correlation was found between the haemoglobin level and the sex of the infant, birth weight, maturity, maternal age, parity or a history of previous miscarriages.

The results are compared with those of similar surveys performed elsewhere.

The Practical Application of the RH Problem

CARL TUPPER, M.D.

A BABY becomes jaundiced within 48 hours of birth. This is an erythroblastic baby and unless treated immediately, may die or end up as a mentally defective. Today there is no excuse for either of these things occurring—prompt treatment will in the majority of cases, result in a healthy baby. To give this prompt treatment, we must understand the situation and be prepared to act as soon as the baby is born.

Why does the situation arise? In addition to the A B O grouping there are six known RH factors in the blood which are classified as C D E, cde. These are antigens and can give rise to antibody formation. For practical purposes the only one of importance is the D factor. Those containing it are Rh positive and not Rh negative. If blood cells containing this factor are introduced into the blood stream of another not containing it—antibodies will be produced against it and we say the person is now sensitized. Let us suppose an Rh negative mother (that is, her blood does not carry the D factor) is carrying an Rh Positive baby (that is, its blood does contain the Rh factor inherited from the father), the Rh positive cells by means of some break in its placental system escape into the mothers blood stream (this has been proved), immediately an antigen antibody re-action is set up and antibodies are formed. These antibodies escape back into the babies circulation and re-act against Rh positive cells resulting in hemolysis giving rise to anaemia and bilirubinemia in the baby.

What are the chances of this occurring? 15% of the population are Rh negative. If we take the Rh negative women who marry Rh positive men we find that of this ideal set up for the above re-action to occur, only 1 in 22 ever have an effected baby. There are various reasons for this. Most of these women never become sensitized because there is no break in the placental system or if there is, no antibodies are formed. If antibodies are formed they do not get back into the baby. Some Rh positive fathers are heterogeneous, i.e. can father either an Rh positive baby (with the D factor) or an Rh negative baby (without the D factor), in brief, about 1 in every 250 pregnant women will have an affected baby so that every doctor doing obstetrics will have to face this problem at some time in his career.

How can we be forewarned? A good obstetrical history is essential. All pregnancies must be discussed in detail. Abortions can sensitize a mother more readily than a full time pregnancy. Stillbirths, early neonatal deaths and jaundiced babies should be suspected as resulting from a sensitized mother.

Personal histories may reveal the patient as being recipient of blood either in the form of transfusions or intramuscular blood. Blood should be taken from the pregnant woman for the Rh determination *early* in pregnancy. The following should be noted:

A. Blood is Rh Positive—no further testing is necessary.

B. Blood is Rh Negative with no antibodies—the blood should be repeated six weeks from term. If possible, the husbands blood should be determined. If he is Rh Negative, no further testing is necessary, but if he is Rh Positive we should note the genotype, i.e., whether he is heterogeneous or homogenous.

C. Blood is Rh Negative and antibodies of varying titres are noted. This early presence of antibodies may mean previous sensitization (by full term pregnancy, abortion, or transfusion) or actual sensitization by this pregnancy. Husbands Rh and genotype is very important here. A blood should now be taken every visit to determine degree of antibody formation as indicated by titres.

What can we learn from antibody titre?

In general, a titre means an affected baby whether titre is high or low—begins early or late, and demands we be ready to treat the baby. We may get a pleasant surprise and find a normal unaffected baby but more often than not, a baby is affected.

The experts may use the titre to prognosticate the outcome but often they too get fooled—so in general the best rule is **that antibodies mean be ready.**

When do we deliver these patients in whom we suspect an affected baby? Certain factors must be considered:

A. We must not add prematurity to an affected baby. This may be difficult to determine, so a wise rule to follow is to allow the woman to go to term or near term.

B. A history of previous jaundiced or dead babies would suggest a **pre-term** delivery, i.e. at approximately 38 weeks.

C. A vaginal delivery is the best method we know to date. There may be an exception to this in the case of a sensitized woman with a homozygous father and several dead babies. We might in this case consider a pre-term delivery by Caesarian Section.

What preparations do we make before delivery when we suspect we are to be faced with an affected baby?

A. Blood for the baby must be available. This should be: (1) fresh; (2) Rh negative, and preferably the same grouping as the baby. A safe procedure is to send a specimen of the mother's blood to be cross-matched against the proposed blood. This is safe, and by this means blood can be available to give immediate treatment to the baby. If one has to wait for the baby to be born and then send it many miles to a Red Cross Station for cross-matching—much valuable time will be lost.

B. Be prepared to proceed immediately with the replacement transfusion. This is a specialized technique and if not properly done, babies will die. There is no excuse for a baby dying as **a result** of this procedure, yet they do. I feel strongly that since they are done so infrequently that teams should be organized in various centres in Nova Scotia, and all affected babies brought to these centres for replacement transfusions.

C. Know what to look for when baby is born:

(1) Yellow tinged amniotic fluid (2) Jaundiced baby (3) Early palpable spleen and liver (4) cord is tinged yellow (5) placenta is large and greasy in appearance. All these signs suggest an affected baby requiring immediate treatment.

A baby may appear perfectly normal—yet in a few hours may be jaundiced and in imminent danger. For this reason, certain procedures are essential in all cases of Rh negative women—particularly those who were showing a titre in their prenatal tests,

Rh Negative women with no titre—blood taken from (1) cord for Rh factor of baby and evidence of involment (2) from the mother to check for sensitization.

Occasionally even though the blood taken during her prenatal visit may show no evidence of sensitization, that taken at term will show late involment. As a rule these are mild but the last one I had required replacement transfusion for the baby.

Rh Negative women with titre—strongly suggesting an affected baby, the following tests are essential:

(1) Blood from mother to check state of sensitization, i.e. the titre.

(2) Blood from baby to determine Rh factor.

(3) Blood from baby for Coombs test, i.e. to determine whether antibodies have reached baby's blood. If even mildly positive, it suggests an affected baby.

(4) Blood for Hemoglobin of baby—the average baby is 120%.

(5) Blood for Bilirubin. This is very important and a Bilirubin above 15 mgm% is dangerous as it is the Bilirubiseamia which causes the kernicterus.

When do we treat babies?

A. A history of several dead or affected babies suggest immediate treatment unless baby is Rh negative. If jaundiced, do not wait for tests but proceed with treatment.

B. A history of sensitization but baby appears normal—Treatment is given in the following cases:

(1) a rising bilirubin—

(2) a falling hemoglobin

(3) a rapidly developing jaundice in first 48 hours.

These should be checked at regular intervals. It is better to treat these babies, even if occasionally it is not required, than not to treat and be sorry.

What is the treatment?

For anaemia, **simple transfusion** is all that may be required. For rising bilirubin (bilirubineamia) **replacement transfusion** is essential to avoid the death of the baby or worse, damage to brain resulting in a mentally defective child.

The technique of replacement transfusion is not a subject for this paper. Suffice to say anyone undertaking this treatment should know and understand the dangers and the means of preventing them. Babies should **not** die as a result of the treatment.

In a small percentage of cases other factors may result in erythroblastosis. One of the rare minor Rh factors not checked by its proper antisera or occasionally (in 20% of the cases) the A B O incompatibility may be responsible. The treatment is the same.

Fetal Distress

I. A. PERLIN, M.D.

DESPITE the gradual improvement in Neonatal care and the great strides being taken towards prevention of premature delivery, fetal distress resulting in fetal loss still accounts for a large share of perinatal mortality. It is, therefore, imperative that it be anticipated, recognized and promptly treated.

Etiology:

Essentially, the direct cause of fetal distress and death is interference with the oxygen supply through the placental circulation.

(A) **During Pregnancy:** A number of different causes may result in distress and death of the fetus:—

- (1) Interference with circulation through the cord by knots, pressure or prolapse (latter two perhaps more commonly during labor).
- (2) Decreased oxygen coming to the placenta because of profound anemia in the mother and hence diminished oxygen-carrying capacity of her blood.
- (3) Where there is high fever such as in acute infectious diseases.
- (4) In some chronic infections like Syphilis or Tuberculosis.
- (5) Toxic conditions such as in Uremia or Eclampsia or Chemical Poisoning—lead, arsenic, etc.
- (6) Congenital Abnormalities—these babies frequently show signs of distress.

Where these causative factors arise early in pregnancy the fetal salvage of course will be negative, but in the late months, anticipation of distress with prompt steps taken toward remedying the situation may well save the baby.

The question of post-maturity as a cause of fetal distress should also be considered. There is a considerable difference of opinion here. Several articles from Great Britain show a higher percentage of distress and loss among this group, while other centres, particularly in the U.S., do not show the same picture. We are now reviewing our own cases to see what effect post mature delivery had on our babies. In the 12,000 consecutive cases reviewed in which there were 964 post-matures, we have found that the problem of fetal distress among the post-matures is not much different than among the mature group.

(B) **During Labor:** There are two general causes of distress:—

- (1) Conditions responsible for the direct cutting off of the supply of oxygen.
- (2) Those in which the neuro-respiratory system is depressed.
 - i (a) Prolonged and strong labor pains recurring so frequently that the blood in placental sinuses cannot be renewed—observed often at the end of second stage in women with rigid pelvic floor, in contracted pelvis. The fetal mortality in protracted labor increases in proportion to the length of labor.
 - (b) Cord complications—prolapse, around the neck or other parts.

- (c) Separation of placenta—either partially or complete.
- (d) Narcosis and asphyxia of mother.
- ii (a) From compression of the brain—either internal from hemorrhage or fracture or external from contracted pelvis or rigid perineum—causes slowing of pulse and anoxemia because the blood is hindered from reaching the placenta. Breech with rapid delivery of head may result in tentorial tears. Persistent delay of second stage with vertex results in oedema of the brain and anoxemia.
- (b) Drugs (Morphine and barbiturates) or anaesthetics paralyze the respiratory centre or render it unresponsive to the natural stimulus of labor and of external life.

Recognition

Knowing when fetal distress is likely to occur, a strong effort must be made to detect the first signs of fetal difficulty so that proper and prompt therapy might be carried out without further jeopardizing the baby.

Deprivation of oxygen is quickly felt by the fetus—the pulse rate usually increases first, then slows down and finally disappears. The slowing is probably due to stimulation of the vagus centre by anoxemia and increase of CO₂. Sometimes the fetal heart becomes irregular both as to rhythm and quality.

With the anoxemia and increased CO₂ the fetal movements increase and the bowel is stimulated to discharge its meconium. Further, the respiratory centre may be sensitized and respiration may be started, the fetus gasps and fills its lungs with amniotic fluid, vernix and meconium.

So, the first important symptom of intra-uterine fetal distress is the change in fetal sounds. There may be change in frequency, regularity, strength or rhythm.

Normally the heart rates range between 120-160, with a slight slowing during a contraction and complete recovery in the intervening interval. When these limits are exceeded, it is a warning and frequent observations should be carried out—listening both during and between contractions.

A persistent slowing to below 100 is certainly evidence of distress, as is a persistent tachycardia of around 180. Also, too, if the heart sounds drop to below 100 during a contraction and come up to normal or higher between them, there is good possibility of cord pressure. Passage of fresh dark green meconium in vertex presentation is significant although may precede upset in heart action by a long period of time. When such meconium is passed it is certainly time to be alert to the heart tones frequently.

Other signs are described but are less readily observed—e.g., extreme activity, funic souffle.

Management

Having anticipated and then recognized the presence of fetal distress, decisive action must be taken. This will, of course, be dependent on other conditions present: the stage of the pregnancy, parity, condition or dilation of cervix, nature of contractions and station of presenting part. Suspicions of fetal abnormality may be confirmed by X-ray. Is the mother's condition good—does she need blood or fluid—are the fetal distress signs due to a tired mother or tetanic uterus requiring rest which in time might improve the fetal condition? Oxygen to the mother raises the gradient of exchange with the relatively un-

saturated fetal blood resulting in better fetal oxygenation especially where fetal oxygen lack is intermittent or partial. It may be possible to carry the mother through labor to delivery on this therapy.

A vaginal examination will help to determine the state of the cervix and station of presenting part or presence of the cord. If membranes are intact artificial rupture discloses meconium or the cord. Sometimes the fetal irregularity improves after rupture of the membrane, especially if the latter was particularly tough.

Vaginal Delivery

When the patient is deliverable she is given oxygen by face mask and prepared. Pudendal block anaesthesia is given, preferably, but general anaesthesia may be necessary.

If delivery involves mid or high forceps and if the degree of distress is not marked or has responded to O₂ therapy, forceps application may be delayed until further progress is made.

If delivery from below is not possible and signs of fetal distress are definite and irreversible, labor must be terminated by Caesarean Section. This is easily decided where there is something definite to go on like prolapsed cord or premature separation of placenta; but a problem where distress occurs in apparently normal labor. Nevertheless, delay in decision with the signs of distress present, means fetal death.

Retrolental Fibroplasia

Of the factors considered, this controlled study shows that the length of time the premature infant is kept in an oxygen-enriched environment is the important factor in the production of retrolental fibroplasia.

Limiting the duration in oxygen to that deemed necessary to meet clinical emergency was shown to be without effect on the survival rate of the premature infant.

For all practical purposes there is no concentration of oxygen in excess of that in air that is not associated with risk of developing RLF.

Infants of multiple births appear to be significantly more susceptible to RLF than infants of single births.

Rate of withdrawal from oxygen does not appear to play a primary role in the pathogenesis of RLF.

The length of time a premature infant, particularly an infant of multiple births, is kept in an environment containing oxygen in concentration in excess of that of air should be kept to an absolute minimum, consistent with the clinical indications of anoxia. When oxygen therapy is clearly required, it should be prescribed on an hourly basis and the concentration should be as low as possible.

Minor Complaints In Pregnancy

J. McD. CORSTON, M.D.

DOCTORS who undertake pre-natal care are continually confronted with the everyday minor complaints of this group of the population. Too often we tend to shrug off these complaints and ascribe them to that mysterious condition known as pregnancy. The patient herself often does not tell her doctor about many of these minor aggravations because she believes that they constitute the "normal" in the pregnant state.

The commoner of these complaints may be classified under four main headings, viz.

- (A) Digestive System Upsets
- (B) Pain in Pregnancy
- (C) Displacements of the Uterus
- (D) Conditions affecting the Skin.

(A) Digestive System Upsets:

1. Pink Tooth Brush

A pink tooth brush and sore gums may denote a lack of Vitamin C. However, during pregnancy it is a well known fact that there is a hypertrophy of the tissue of the gums. This may be seen as redundancy of growth in between and round about the teeth. This hypertrophy may be even more excessive and localised so as to form a reddish purple "tumour" which sometimes attains the size of a walnut,—the so called "pregnancy tumour." This disappears spontaneously after delivery. Because of this tendency on the part of the gums for excessive growth during pregnancy food particles become lodged between the teeth and gums and oral hygiene is more difficult. Gingivitis is, therefore, more prevalent than in the non-pregnant state.

Treatment:

- (a) Cleansing the teeth with a **soft** tooth brush using salt and water or a tooth powder after each meal.
- (b) Massage of the gums with a finger with or without a linen cloth to keep the gums firm.
- (c) Referral of the patient to her Dentist should gingivitis ensue.
- (d) Large doses of Ascorbic Acid, e.g. 100 mgms. t.i.d.

2. Heartburn

This troublesome condition usually appears about the second or third month, but it is most severe between the sixth and eight months of pregnancy. It is probably due to many factors, e.g.—

- (a) Upward displacement of the stomach due to the increasing size of the gravid uterus.
- (b) Atony of the smooth muscle in the walls of the oesophagus probably due to the action of progesterone.
- (c) Reverse peristalsis in the oesophagus causing a regurgitation of semi-digested food from the stomach into the lower end of the oesophagus. All of these factors probably play a part and the result may be an oesophagitis.

Treatment:

Belladonna in some form and the antispasmodics. Some success has been found with Prostigmine injections.

Pro Banthine 15 mgms. before each meal and at bedtime combined with Amphojel has been tried on the recommendation of Dr. Robert Dickson, Dalhousie's Professor of Medicine, and has been found to be useful.

If all therapy seems to fail then some anomaly of the oesophagus should be suspected and the patient oesophagoscoped.

3. Hyperemesis (mild)

Most women have some degree of "morning sickness" in the early months of pregnancy. That there is no *sine qua non* as far as treatment is concerned is borne out by the fact that the drug drummers have a new "cure" for this unpleasant side effect of pregnancy every few months. By the time the patient has been submitted to the many "anti nauseants" in turn and her purse has been markedly depleted she has, in the course of events, passed into the fourth month of pregnancy and the nausea and vomiting have stopped of their own accord. Until we know the **cause** of this vomiting in pregnancy we shall go on prescribing the various pink pills and capsules and even give intramuscular "shots" of a fancy vitamin with varying success. The time honoured advice of frequent small dry feeds alternating with fluids and dogmatic reassurance do seem to help the patient over this unpleasant phase of her pregnancy.

We must always be on guard with these patients so that we may not miss the "associated vomiting" of pregnancy due to gastric ulcer, obstruction, red degeneration of a fibroid, ovarian cyst with twisted pedicle or appendicitis.

(B) PAIN IN PREGNANCY**1. Acroparathesia:**

This condition is common and is confined to the upper limbs. The chief symptoms are numbness and prickling or tingling of the hands and fingers; pains in the arms; possibly difficulty with the hands in finer movements.

The aetiology is not definite but it is probably due to the sagging of the shoulders as the abdomen gets progressively larger and more protruberant. This sagging of the shoulders causes a stretching and irritation of the brachial plexus which in turn interferes with the median, ulnar and radial nerves.

Treatment:

No treatment is necessary in most cases because of the mildness of the symptoms. If, however, the symptoms are more severe then sedatives and analgesics may be prescribed. To relieve the stretching of the roots of the brachial plexuses a shoulder brace in the form of a firm figure of eight bandage will help to keep the shoulders raised.

The condition subsides within a few days following delivery and the patient can be definitely reassured on this point.

2. Pain in the upper right quadrant of the abdomen.

This is a fairly common finding and may be due to muscular stretching in this area especially in the later months of pregnancy. Breech presentation with the foetal head pressing up against the lower border of the right rib cage may cause a marked "soreness" and pain in this area. Cholecystitis may be a cause and it should be remembered that cholelithiasis is commoner during pregnancy due to stasis because of atony of the sphincter of Oddi.

3. Postural Pain in Pregnancy:

Often a pregnant patient complains of lower abdominal pain which may be uni- or bi-lateral. This pain is more marked at the end of a day's work. The pain appears to be superficial—in or under the skin. The stenographer with a poor posture at her desk or the waitress or house-wife with a poor stance and of necessity on her feet most of the day are typical examples of patients who may complain of lower abdominal pain during pregnancy. It is probable that abnormal posture over a prolonged period of time causes nerve root irritation which affects the distribution of the ilio-hypogastric and the ilio-inguinal nerves. To gain some relief in these cases the patient should be instructed to lie down with the legs slightly flexed for twenty minutes t.i.d.

4. Pelvic Girdle Pain

This is probably the result of excessive softening of the ligaments of the pelvic joints. Localised tenderness over the symphysis pubis and sacro-iliac joints with abnormal mobility and X-rays showing widening at these joints support the diagnosis. Relief can be obtained by prescribing a firm elastic pelvic girdle support. The pelvis may be encased in firmly applied Elastoplast.

5. Muscular Leg Cramps

These are extremely common to a greater or lesser extent. That Calcium deficiency is not the cause has been shown in pregnant women suffering this condition and yet in whom the calcium absorption has been normal. Although common table salt and pregnancy don't mix too well, successful treatment of some of these cases of troublesome leg cramps has been achieved by giving NaCl grs. 15 t.i.d. for a week or so. Tolserol Gm. 0.5 also seems to help if a tablet is taken at bedtime.

(C) DISPLACEMENTS OF THE UTERUS

1. Complete Procidentia

This is a most uncomfortable condition at any time but in the early months of pregnancy the symptoms are exaggerated. The treatment is insertion of a large ring pessary which should be changed every two weeks. No douching should be allowed during pregnancy because of the danger of an air embolism. After the fourth month the uterus has become an abdominal organ and is too large to descend down to the introitus. The ring pessary may therefore be dispensed with after the fourth month.

2. Retroverted Gravid Uterus

If the pregnant retroverted uterus becomes incarcerated in the pelvis—and less than 5% do—then the patient may have as her first symptom—"frequency." This is actually overflow incontinence.

The treatment is simple viz. continuous bladder drainage and lying in the prone position. This may be augmented with the knee-chest position for five minutes b.i.d. The very rare case which does not come forward with this regime of treatment may have to undergo laparotomy because the uterus is probably held in the retroverted position by adhesions (a rare bird in those who become pregnant.)

(D) CONDITIONS AFFECTING THE SKIN

1. Pruritus Vulvae

In any case of pruritus vulvae the urine must be examined to exclude diabetes. One specimen which is negative for sugar should not be taken as the final answer. The commonest cause of pruritus during pregnancy is moniliasis. The treatment is easy but the cure may be delayed until the pregnancy is over. The symptoms can be kept in abeyance by Soda Bicarbonate Sitz baths (4 tablespoons to 1 quart of warm water) two or three times daily for the first two days. Gentian Violet, although "messy" is probably the most effective therapeutic agent against the *oidium Albicans*. Pregnancy seems to pre-dispose to the parasite probably because of the increased acidity of the vagina at this time.

If the pruritus is due to trichomonad infection then any of the anti trichomonad vaginal suppositories may be prescribed but douching should be omitted.

2. Varicose Veins

Although strictly speaking this is not a disease affecting the skin it may be conveniently dealt with in this section. About 20% of pregnant women have varicose veins of the vulva and/or the legs. Varicose veins of the vulva may be helped by using a sanitary pad held firmly in place by a T bandage. If the veins are very prominent and troublesome they may be injected with 1 c.c. of sodium morrhuate either side separated by one week. Varicose veins of the legs may be controlled by elastic stockings or if the veins are very large and painful with or without ulcer formation surgical treatment may be carried out. There are no contraindications to surgical treatment of varicose veins during pregnancy except that the results may not be as good as in the non-pregnant state.

3. Herpes Gestationis

This condition may appear any time from the fourth month onwards. The lesions are erythematous patches varying in size from a 10 cent piece to a 50 cent piece. Vesicles appear at the margins of these patches which in due course break and crusts form. These crusts are itchy. The crusts should be bathed and cleaned off. An antibiotic ointment can then be applied.

4. Generalised Itching of the Skin

This is sometimes seen during pregnancy and is believed to be due to a circulating toxin the origin of which is unknown. This condition is treated with sedatives and anti-pruritic lotions after diabetes and sub-clinical jaundice have been excluded.

The minor complaints in pregnancy which have been outlined represent much discomfort. Possibly the basis of many of these complaints is psychosomatic in nature. If this be so then as the ignorant primipara or the nervous multipara is taught the physiology of pregnancy and what to expect in labour she will become a better adjusted, self-confident, happier and healthier individual. The overall basis of prophylaxis and treatment of many "complaints" during pregnancy is the mental preparation of the patient for her confinement.

Maternal Mortality Study

M. G. TOMPKINS, M.D.

RECENTLY the doctors and hospital superintendents of the Province of Nova Scotia received a letter outlining two proposed studies: one into peri-natal mortalities and the other into maternal mortalities. It is with this latter programme that we are concerned.

The study of maternal mortality has been advised by the Canadian Medical Association and by the Nova Scotia Medical Society. It is hoped that this programme will begin January 1st, 1958. No doubt the brochure sent out has raised some questions in the minds of the practising physicians of the Province. The purpose of this paper is to clarify the plan.

This study will be one of the most progressive steps to be made in Obstetrics and Gynaecology in the Province.

Maternal mortality studies have been undertaken in different regions of the United States for 20 years. A great deal of help has been obtained from such studies, with marked improvement in the maternal mortality rates. The purpose of this maternal mortality study is to try, if possible, to analyse every maternal death which occurs in the Province. By a maternal death we mean—any death which occurs in a woman from the time of conception to thirty days post-partum. It is hoped by such an analysis, to prevent maternal deaths in the future; first of all, by education of the laity, hospital members, communities in general and eventually the profession itself.

The simplest way to explain the mechanism of this study would be to quote a case from the Maternal Mortality Reports which appear periodically in the Obstetrical and Gynaecological Survey. This report is from Vol. 12, October issue, No. 5, 1957. The case was No. 133.

"This patient was 38 years old, white, para V, abortus I, who died three hours postpartum. Her past history was not remarkable; the first two pregnancies went to term and were delivered without event except that both were monstrosities and were born dead. The third pregnancy was spontaneously aborted at 12 weeks, while fourth and fifth went to term and were delivered normally, alive and without abnormality.

The last (sixth) pregnancy was uneventful; prenatal care was considered adequate with nine visits. Serologic test for syphilis was negative. Rh-positive, both tests taken in the fourth month. Labor began spontaneously at 42 weeks gestation and the patient was admitted to hospital when the cervix was almost completely dilated; on admission she was markedly excited, nearly to the point of hysteria. Demerol 100 mg., and scopolamine 1/150 gr. were administered; later nitrous oxide-oxygen anaesthetic was instituted along with 6 cc. of a 2½ per cent solution of sodium pentothal intravenously. The excitement continued and she was given another 6 cc. of sodium pentothal slowly. Before the injection was finished the patient had apparently aspirated an appreciable amount of gastric juice and solid material. She was cyanotic and apneic; some of the substance was removed, and delivery was accomplished hurriedly (low forceps and episiotomy) delivering a living 8 pound, 7 ounce baby.

Details of the third stage of labor were not reported. Although the patient's color improved (postpartum), she failed to respond. An internist and chest surgeon were called in consultation. A considerable amount of frothy fluid continued "to escape"; a laryngoscope and bronchoscope were inserted to remove additional material, but the frothy liquid continued to run out of the instrument in abundance. Her condition grew progressively worse until her death, hours later. There was no autopsy.

Cause of Death: Delivery, anaesthetic for; pneumonitis secondary to aspiration of vomitus; live birth.

Comment: The Committee voted this case a preventable death. It was felt that there was a definitely poor choice of agents, which combined to produce anything but a desirable anaesthetic effect upon the patient. Apparently no effort was made to ascertain the time and/or quantity of food last ingested. Although no definite chronologic sequence of events was stated, it was also felt that there was delay in the bronchoscopic procedure and effort to establish an adequate airway."

"Pentothal is not a good anaesthetic agent for delivery. Regurgitation, aspiration and laryngospasm, as well as respiratory depression may occur. When used, pentothal should be given in doses of 1 or 2 cc. at a time, not 6 cc. as was done here. The description of abundance of frothy liquid makes one think of pulmonary edema, but the likelihood is that aspiration of gastric contents can account for all of the difficulty. After the trouble began, treatment was inadequate and resuscitation was delayed, so that chronic anoxia finally caused the death. When an acute respiratory emergency arises due to anaesthesia, the anaesthetist must be able to give adequate treatment immediately. Calling a consultant may be good for one's conscience, but it does the patient no good since it is usually too late."

It is honest, unbiased reports, such as the above quoted that will improve our maternal care in the Province of Nova Scotia. How is this going to be accomplished? First of all by studying all maternal deaths in the Province we will have an accurate picture of maternal mortality as it does exist in Nova Scotia. In the October issue of the Nova Scotia Medical Bulletin two articles appeared on the hazards in the recording of deaths in Nova Scotia. One statement that almost 600 burials take place in the Province each year, without a Physician's certificate as to the cause of death, certainly makes one realise that an adequate picture, particularly regarding maternal mortalities does not exist. Oftentimes too the cause of death as signed on the death certificate is inaccurate and incomplete. That alone is one reason why this study should be conducted.

In the March, 1957, Obstetrics and Gynecology, Barno et al report on Maternal Mortality as follows: "Maternal mortality in this series of 282 cases includes all deaths associated with pregnancy and the 3-month post-partum period. Had death certificate information alone been used, 28 per cent of the deaths would have been missed because pregnancy was not mentioned on the certificate. Analysis of the maternal death certificate showed that only 35 per cent were complete and correct.

The second important feature to be obtained from this study will be that once an accurate death rate and cause of death is established, more stress could be applied in these fields with resultant lowering of maternal mortality in the communities involved. For example, in some States there is a higher maternal mortality rate associated with anaesthetic deaths than from the old triad of

haemorrhage, toxæmia and infection. These are important factors to know, not only for teaching at the University level but also as an educational means to the general public.

The third great advantage that will come from this study is that maternal deaths will be prevented. In a recent article which appeared in "Modern Medicine" Doctor Rees made the statement that maternal deaths since 1933 show a reduction of 85%. True, maternal mortality studies have not been totally responsible for this dramatic change in that other agents such as antibiotics, adequate blood replacement, newer techniques, etc., have done a great deal. Certainly the maternal mortality study has helped. In States where this study has been in effect for some period of time, the preventable factor has dropped dramatically. Usually in the first year of the study 90% of the deaths would be preventable or have a preventable component. With each subsequent year this preventable factor diminishes and in those areas where the programme has been in effect for a period of time it drops to an exceedingly low figure. This is the main indication for the study in Nova Scotia.

Again quoting from Barno "The gross mortality (per 1,000 live births) fell from 0.89 per cent in 1950 to 0.49 per cent in 1954, and the corrected "obstetric" mortality from 0.62 per cent to 0.33 per cent (compared with the U.S. mortality figures of 0.83 and 0.52).

The leading causes of death were haemorrhage (27.1 per cent), toxæmia (20.3 per cent), infection (14.1 per cent), heart disease (7.3 per cent), anaesthesia (5.7 per cent), and amniotic fluid embolism (5.1 per cent)."

How is the study going to be undertaken? Under your Chairman of the Maternal and Child Welfare Committee a Board has been formed which is made up of two obstetricians, two paediatricians, a pathologist, an anaesthetist and a general practitioner. This Board will review all maternal deaths that occur in Nova Scotia. How will the Board receive notification of such deaths? It is hoped that sufficient interest in maternal care will prompt the doctors and hospital superintendents to report to this Committee all maternal deaths which are under their care or come to their attention. This is the first important part of the study. Once the Chairman of the Committee receives notification of a death the doctor associated with the case will be contacted. With his assistance the case will be studied as outlined in the plan. The greatest diplomacy and discretion will be exercised throughout. A report similar to the one presented in this paper will then be prepared.

At the monthly meeting of the Maternal Mortality Board this case will be discussed totally, freely and completely and a decision will be reached as outlined in the excerpt. They will decide the cause of death, whether the case was preventable or non-preventable, and if preventable, the preventable components. A complete summary of the proceedings with the decision of the Board will be sent to the doctor. Except for this, no further identification of the patient will be allowed. Every effort will be made to prevent identification of the material and certainly the physicians will be protected on all scores.

Following the yearly completion of this study a complete analysis of the material will be presented by your Committee and periodic excerpts will be in your Bulletin with case reports.

We trust that every doctor in Nova Scotia will give us his complete support in this project. That is, after January 1st, 1958 all maternal deaths, whether associated with a miscarriage, or delivery, or with any type of medical or surgical procedure, should be reported to "The Chairman, Maternal and Child Welfare Committee," c/o the Grace Maternity Hospital, Halifax, N. S.

Case Report

J. R. BOULAY, M.D.

MRS. J. B. is a 65 year old white female who was admitted to the Victoria General Hospital on October 9th, 1957 with chief complaint of bleeding per vagina since September 26th, 1957. Bleeding was slight and spotted her underclothing only. An added complaint of lower abdominal pain, a dull ache to be exact, was elicited during the questioning. The duration of this pain dated back to September 26th, 1957 and lasted about an hour a day.

Her family history, gynecological history, were non-contributory—menopause age 45. In her personal history she states she had rheumatic fever in 1915, pelvic floor repair in 1934, pleurisy in 1952, investigation of low back pain in 1954 and finally had her bladder stretched in 1955.

Functional inquiry revealed some dyspnea on exertion and ankle edema at night. On physical examination the following positive findings were found:

- (1) Rales in her left chest with dullness at the base.
- (2) Moderately loud systolic murmur at the apex.
- (3) A large firm mass with tender areas filling most of the left lower quadrant and extending above umbilicus. There was some motility to it.

On Pelvic Examination.

Vulva showed areas of irritation, more marked in perineal area. There was a large rectocele with a beginning of enterocele. The cervix appeared as a small dimple at the vaginal vault and looked normal. The uterus could not be distinguished from the mass found on abdominal examination. It was felt also that the aforementioned bleeding was due to irritation of the vaginal mucosa over the rectocele which protruded through the vulva when patient strained or stood in the upright position.

Our impression following examination was that the large mass in the left iliac area arose from the pelvis and was ovarian in origin. We felt that it might be malignant, and should be considered as such because of the pain and soreness in the abdomen.

With these considerations in mind a metastatic series, I.V.P. and loosening doses of X-ray were carried out before laparotomy. The I.V.P. and metastatic series were negative. The patient received a course of 6 treatments of deep therapy to pelvis.

Following this a pelvic laparotomy was done and a large loculated cyst of the left ovary was found with papillary changes invading recto-sigmoid colon and omentum. There was also a large lemon-sized mass growing in the mesentery of the ascending colon. Some small implants were found on the bladder reflexion and on the utero-sacral ligaments.

A total abdominal hysterectomy, bilateral salpingo-oophorectomy and total omentectomy was done. The patient's post-operative course was uneventful.

The pathology report revealed that the excised tumor was a papillary serous cyst adeno-carcinoma with metastases to the omentum, the right ovary and vaginal fornix.

On removal of her stitches she received a further course of deep therapy.

SUMMARY:

A case of ovarian malignancy has been presented and the routine treatment followed on the gynecological service of the Victoria General Hospital is outlined as follows:

- (1) I.V.P. and metastatic series to eliminate any distant lesions which would render surgery useless.
- (2) Loosening doses of X-ray therapy which causes edema of the pelvic tissues allowing a better plane of cleavage.
- (3) Total abdominal hysterectomy, bilateral salpingo-oophorectomy and total omentectomy is the surgical procedure of choice. Anything less than this is considered inadequate.
- (4) Deep X-ray therapy to the pelvis, post-operatively, completes the treatment. This is given in daily treatments to attain a total tumor dose of 3,000 R.
- (5) The patient is then followed closely by regular visits to our Tumor Clinic.

Full-Term Abdominal Pregnancy

In 1953 Frachtman reviewed the literature and listed a total of 74 cases of full-term tubal pregnancies, including nine instances in which both mother and infant survived. Gustafson, Bowman and Stout have subsequently reported another case.

It is the author's belief that the case reported constitutes the 11th such case where both the mother and infant survived.

That this pregnancy was tubal is inferred, inasmuch as it was not possible to demonstrate ciliated columnar epithelium in the inner lining of the sac. Smooth muscle, however, was identified, and the left tube could not be found elsewhere. The left ovary was present in the wall of the sac but was not involved with it. Had it not been for the presence of degenerating fibroids in the uterus, it would have been possible to deliver the child by salpingectomy.

Certain features common to advanced extra-uterine gestation were present, notably a high and abnormal foetal life and a soft-tissue mass in the pelvis demonstrated by X-ray. However, the usually-mentioned signs of readily-palpable foetal parts and an abnormally loud foetal heart were absent.

Hysterography and sounding of the uterus are fraught with danger in the presence of a live infant, transverse lie, and intact membranes. There is also the danger of being misled in the event the tubal lumen is patent and the dye spreads upwards around the amnion. A uterine sound may well perforate the softened uterus, result in haemorrhage or infection, and have little diagnostic benefit.

The classic method of management advocated for advanced extra-uterine gestation is to leave the placenta *in situ* and close the peritoneal cavity without drainage. When the placenta is implanted upon various viscera, this unquestionably remains the procedure of choice. However, in the rare instances where the placenta lies in a self-contained sac and its blood supply can be controlled by ligation, the consensus favours resection as was effected in this case.

A Case Report of Carcinoma of the Cervix the Handling of the Terminal Case

T. L. CREAMER, M.D.

CARCINOMA of the cervix is one of the commonest forms of cancer. Curtis¹ says "cancer develops in the cervix of the uterus with greater frequency than in any other part of the body, with the possible exception of the female breast. Novak² claims that "no less than sixteen thousand women in the U.S.A. succumb to carcinoma of the cervix each year."

Clinical Summary:

A 44 year old married woman was admitted to the Victoria General Hospital on May 24th, 1955. She complained of a watery, brown vaginal discharge which was non-irritating but had a foul offensive odor. This discharge was first noticed approximately four months previous to this hospital admission. She had also noticed a small amount of postcoital bleeding on six occasions dating back two or three months. Associated with these symptoms was a weight loss of about ten pounds in the two months before she was admitted to hospital.

This woman began her menstrual periods at the age of sixteen. The cycle was 3/28-30, with 3 pads daily. There had been no history of change in the cycle or in the amount of menstrual blood passed. The only change noticed was that she had a low back pain associated with her menstrual periods for ten months previous to her admission.

Apart from a Caesarian section with her last child in 1947, her personal and family history were non-contributory.

The functional inquiry was negative except for a history of bronchitis, and a burning sensation with frequency of urination for five months.

The routine physical examination did not reveal any abnormality.

The vaginal examination showed an ulcerated lesion which involved the whole upper vagina and had completely eroded the whole cervix. A thin, watery, brownish discharge with a foul odor was noted in the vagina. The stick test was positive. The uterus was anteverted and seemed to be mobile. A Papanicolaou smear was taken, which on later examination showed malignant cells. A wet smear of the discharge showed many erythrocytes, pus cells and desquamated epithelial cells. Rectal examination gave the impression of marked extension of the growth on the right side into the parametrium and reaching the side wall of the pelvis. Extension on the left side was not so marked and it did not reach the pelvic side wall.

A diagnosis of Carcinoma of the cervix, Stage III, was made (the stage was based on the degree of extension and spread, rather than on the quality of cell differentiation). Biopsy showed the lesions to be a squamous cell carcinoma with poor differentiation of the cells.

Subsequent to this, other investigations were made including sigmoidoscopy, cystoscopy, metastatic series, and intravenous pyelogram. All were negative. Her haemoglobin was 10.9 G.

She was given a total of 6100 mgh. of radium, intrauterine and to the vaginal vault in two treatments, six weeks apart. The first radium treatment was

followed by fifteen treatments of deep X-ray which delivered a total tumor dose of 2560 R.

She was followed at the Gynecological Tumor Clinic at intervals of four months. On her first examination following radium and X-ray treatment, the vaginal vault had epithelialized well and there was some scarring. Thickening was noted in the right parametrium at each visit which seemed to be smooth fibrosis. Her weight remained constant at 188 and her haemoglobin stayed between 12-13 G.

On September 10, 1957 her weight had gone down to 162 and she complained of severe lower abdominal and low back pain which on occasions radiated down the left leg. There was marked tenderness in the iliac fossae especially on the left and there was considerable pain and tenderness in the left lumbar region. On pelvic examination the vagina was closed off and a large mass filled the whole pelvis. I.V.P. and retrograde pyelogram showed a bilateral hydronephrosis and hydroureter more marked on the right side. A large oval shaped soft tissue mass was seen above the bladder shadow and to the right of the midline.

She complained of frequency, nocturia and dysuria and a urinalysis revealed pus cells, red blood cells and a few granular casts. Cystoscopy showed an ulceration on the posterior bladder wall in front of a mass which seemed to be invading it from the outside. Biopsy of this lesion was negative for malignancy but rather revealed an inflammatory reaction of the wall of the bladder.

Obviously this woman had a frozen pelvis with extension of the cancer throughout the pelvis and involving both ureters. She had also cystitis and pyelitis.

In an effort to afford this woman some measure of relief, appropriate antibiotics were given after organisms in the urine were cultured. Both ureters were catheterized and the catheters left in place for several days to relieve the obstruction and allow continual kidney drainage. These measures failed to relieve her of any of the pain and pelvic discomfort.

On September 25th the neurosurgical unit performed a bilateral tractotomy of the spinal cord. This was successful and she was discharged to her home completely free from pelvic pain.

DISCUSSION:

This case illustrates well many of the problems that are met with in carcinoma of the cervix. It is not, however, the purpose of this paper to go into details of the symptomatology, pathology or therapeutic treatment of carcinoma of the cervix. Rather, I would like to discuss briefly the management of the terminal carcinoma case.

More often than not the far advanced carcinoma of the cervix with its extension throughout the pelvis and perhaps with distant metastases, is accompanied by a great deal of pelvic pain. There may also be pain in the low back, pain in the lumbar region and often radiation of the pain down the legs. The location of the pain and often its severity will depend on what structures have become involved in the growth of the carcinoma. A commonly involved structure is the ureter and, if it is, hydroureter and hydronephrosis on the affected side will usually result. The pain in this case will be in the lumbar region with radiation to the superpubic area and often down the leg.

The treatment here resolves itself into one of adequate palliation, in order to try to keep the patient as comfortable as possible until death removes her from her misery.

The most common method in use to relieve the pain is the use of morphine or pantopon. The disadvantage with drugs of this nature is that the dosage has to be increased often and it has to be given at shorter intervals as time goes on and as the patient's tolerance to the drug becomes greater. We make use of a preparation called the 'Carcinoma Cocktail', to which can be added increasing doses of tincture of opium. This cocktail (it's formula will be given below) is easily prepared and is made use of in these women who are not likely to live more than a few weeks and on whom, therefore, a tractotomy would hardly be justified. Our results with the mixture have been excellent. It relieves the woman of her pain and has the added advantage of keeping her in a fairly happy frame of mind.

If the patient is likely to live longer than two months, a tractotomy may be considered. This is a neurosurgical procedure useful for the relief of marked pain. It consists of severing the spinothalamic tract of the spinal cord which carries the pain fibres. The ideal time for performing this operation is when the codeine tablets by mouth fail to give relief from pain, and before it is found necessary to use injections or morphine or pantopon. Once hypos have been started, the results from tractotomies are not nearly as good. If the pain is unilateral, the tractotomy is usually unilateral. However, if the pain is more wide-spread a bilateral tractotomy is done.

Tractotomy is sometimes accompanied by some degree of bladder paralysis necessitating the use of an indwelling catheter. This is usually only necessary for several weeks. In other cases, especially if the tractotomy is bilateral, the paralysis will be permanent. If the pain is visceral in origin the tractotomy will not be very effective.

If a far advanced case of carcinoma arrives on our service in such a state that we can offer nothing in the form of therapeutic treatments, we send the referring doctor the following instructions on the handling of the terminal carcinoma case:

(1) If the patient develops severe pelvic pain she can either (a) return for a tractotomy or (b) if she is not likely to live long, be given increasing doses of opiates. We find the carcinoma cocktail very useful in keeping such cases happy. It consists of Gin—2 ozs.; Paraldehyde—2.5 drams; Chlorpromazine—25 mgs; to which add Tr. opii with a glass dropper starting with 15 mins. and increasing as needed for pain. Mix this dose with equal parts of grape juice or other fruit juice and give often enough to keep the woman free of pain and slightly doped. If the paraldehyde upsets her stomach it can be left out.

(2) If she requires any preparation of opium for pain—and we believe Tr. opii, as given in the carcinoma cocktail, to be the best opiate—it will have to be given in steadily increasing dosage as the patient develops tolerance against it. But given with the other ingredients of the cocktail, less opiate will be required, and the woman will be in a happier psychological state.

(3) With carcinoma of the vulva or cervix there may be a very foul and pervading odor. Spraying ozium or ozogermo about the bedroom and rest of the house will help better than anything else we have tried.

(4) Dressings can be obtained free from the Canadian Cancer Society, 151 South Park Street, Halifax.

(5) Some patients with tractotomies have to have an indwelling catheter. This should be changed every week or ten days if it becomes blocked.

(6) Apart from a tractotomy there is no more that we can do for this patient. There is, therefore, nothing to be gained by returning her to this hospital, but we would like very much to hear what happens to her.

1. Curtis, A. H. "Textbook of Gynecology", 6th Ed., W. B. Saunders Co., Philadelphia, 1950, P. 294.

2. Novak and Novak. "Textbook of Gynecology", 5th Ed. Williams & Wilkins Co., Baltimore, 1956, P. 238.

The Conservative Management of Placenta Praevia Appearing Early in the Third Trimester of Pregnancy

F. J. CONKLIN, M.D.

MRS. E. C., a 40 year Old, G. IX P.VIII white female, registered with the Dalhousie Public Health Pre-Natal Clinic on November 9, 1956 in the twelfth week of her ninth pregnancy. Her last menstrual period had begun on August 17th, 1956 giving her an expected date of confinement of May 24, 1957. She is Rh positive, and has always had a negative Kahn reaction. Her previous pregnancies had all been quite normal, although she had frequently shown antenatal glycosuria unassociated with either fasting or p.c. hyperglycaemia. Her labors had been short and uncomplicated, ending at, or shortly before term, with the spontaneous delivery of healthy normal infants weighing between six and eight pounds. Her post partum course had also been uncomplicated in each case. Her eighth child was born at home.

Mrs. C's antenatal course during this pregnancy, too, remained unremarkable until it's twenty-eighth week, when on March 4th, 1957, she first noticed fairly profuse, painless, vaginal bleeding.

The patient was admitted to the Grace Maternity Hospital in good general condition, forty minutes after the onset of bleeding. On admission her Blood Pressure was 82/50, and her pulse was full and regular, at 96 beats/minute. Her colour was good; and there was no active bleeding at the time but her legs and feet were blood stained and her clothing was soaked with blood.

Further examination revealed that her uterus was about the size of a seven month pregnancy, and was of the usual consistency. It was not tender. Infrequent, irregular, painless contractions were felt. The fetus was in the vertex presentation and was not engaged. The fetal heart tones were of good quality and rhythm, at a rate of 140/minute.

The patient's haemoglobin level was 12.5G/100 c.c. Her urine was free of sugar and albumin. Blood was drawn on admission for immediate grouping and cross-matching.

No rectal or vaginal examination was performed.

The diagnosis of placenta praevia was made. This was confirmed by a placentagram taken later (in the 31st week of pregnancy) which showed the placenta to be on the posterior wall of the uterus extending into the lower segment and over the cervical os.

Within an hour after admission the Blood Pressure had risen to 115/70 and the pulse became stable at 80/minute. These levels remained. The fetal heart tones remained satisfactory. No further frank bleeding ensued.

Because of the early status of this pregnancy, and the patient's good condition, it was elected to treat her conservatively, and a programme of watchful expectancy was begun. Of the subsequent eight weeks preceeding delivery, from March 4th to April 24th, the patient spent five weeks in the hospital, being discharged twice for periods of three days (March 12th-14th) and seventeen days (March 26th-April 13th). After each discharge she was re-admitted with the story of sudden, profuse, painless, bright red, vaginal bleeding and at

each admission she and her fetus were and remained in good condition. Her haemoglobin level remained relatively good, improving with oral iron treatment from a low of 11.5 Gm. on March 15th to 13.5 Gms. on April 20th. At no time did she display albuminuria. Throughout her last stay in hospital, she was noted to have occasional painless uterine contractions, and to 'spot' occasionally without further frank bleeding.

On the morning of April 24th the patient stated that her contractions were harder and were becoming noticeable. That evening, at 9 o'clock, she began to pass bright red blood, with some clots, per vaginam. Since at this time the fetus was considered to be quite viable, it was decided to perform a vaginal examination to determine the true state of affairs, anticipating delivery thereafter.

With all preparations for an operation made, and with an anaesthetist on hand, the patient was taken to the operating room and, following abdominal and perineal preparation, a careful vaginal examination was performed. This revealed the cervix to be long and almost closed, the vertex to be presenting, but high, and the placenta to be partially covering the internal os.

Accordingly, a low cervical Caesarian section was performed, and at 11.58 p.m. of April 24, 1957, one month before term, a five pound, six ounce, female infant was delivered in good condition. The position of the placenta was again confirmed.

The infant fared well. The mother, unfortunately, suffered dehiscence of her abdominal wound on her ninth post-operative day, which necessitated secondary closure and further prolongation of her hospital stay. Both she and her daughter were discharged well on May 17th, 1957 and have remained so since.

DISCUSSION:

This case exemplifies the expectant treatment of vaginal bleeding early in the third trimester of pregnancy. Such conservative management has been encouraged in the past decade by the reports of greatly improved fetal survival rates with its use by Macafee¹ in Great Britain and Johnson² and Williams³ in the United States.

The essence of this treatment lies in the immediate transferral of the patient to the hospital at the first sign of serious vaginal bleeding in the third trimester of pregnancy, the absolute avoidance of digital rectal or vaginal examination until the decision to effect delivery is forced, the preparation for blood transfusion in case of need, and the establishment of the diagnosis of placenta praevia by other clinical examination and by placentography.

The most important of these tenets is absolute avoidance of any digital examination, rectal or vaginal, of any woman bleeding vaginally in the third trimester of pregnancy, until she is in the operating room and ready to be delivered immediately should the examination cause massive haemorrhage.

This principle is based on the observations, agreed to by all authorities¹⁻⁴, that the spontaneous haemorrhage of placenta praevia is very rarely—IF EVER—fatal, and that digital examination can cause awesomely massive haemorrhage which **will** be fatal unless measures are immediately—in terms of minutes—available to deliver the child and the placenta.

Thus, accurate diagnosis must be delayed until the woman is in a hospital, and if expectant treatment is planned, must depend on the other means of investigation mentioned. The presence of a soft or normally contractile, non-

tender uterus, of the expected size and remaining so, and of persistently normal fetal heart tones, and the absence of such signs of toxæmia as hypertension or albuminuria, are important in distinguishing placenta prævia from abruptio placenta. Chassar Moir⁴ stresses the importance of persistent displacement of the fetal head in diagnosis and further, believes that "the position of the fetal head with regard to the pelvic brim is of more practical importance in deciding appropriate treatment than is the exact position of the placenta with regard to the os uteri."

In the case presented, placentography proved diagnostic, as it has in the vast majority of cases at the Grace Maternity Hospital.

When the diagnosis of placenta prævia early in pregnancy has been made, further treatment consists only in careful observation of mother and fetus, preferably in the hospital. If, during the hospital stay, bleeding stops, and does not reappear when the patient is moderately active, and if she lives reasonably close by, she may be allowed to go home, being warned to avoid strenuous activity, straining at stool, sexual intercourse, or douching; and to return immediately to the hospital should bleeding recur. Under these circumstances delivery can frequently be postponed until close to term.

Should further bleeding ensue after the fetus has reached such an age and size as to make viability probable, delivery may be planned, and at this time, diagnosis of placenta prævia may—if necessary—be confirmed by vaginal examination, performed in the operating room with the stage set for immediate operative delivery. This was the situation in our case. Serious hæmorrhage, even before the stage of viability, would, of course, force operative interference whenever it occurred.

Labor, if it supervenes, may also force operative delivery, particularly in the more advanced degrees of placenta prævia. If, however, in cases of marginal, or of low-lying placentas, bleeding is not excessive, and if the cervix is soft, or dilating rapidly, simple rupture of the membranes may serve in bringing the presenting part against the offending placental edge, to inhibit bleeding and allow vaginal delivery. Again, excessive bleeding may force one's hand toward Caesarian section regardless of other considerations.

SUMMARY:

A case of placenta prævia is presented, with hæmorrhage first occurring at the beginning of the seventh month of pregnancy, treated successfully by the conservative method. The essentials of this treatment are listed and discussed.

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How To Treat 'Em

BARTHOLIN'S ABSCESS

By the time a woman with a Bartholin's Abscess comes to the Doctor the abscess is usually on the point of bursting, and about the only thing that can be done is to let the pus out by incision. Unless the local reaction is very intense, possible recurrence can be prevented by using the fine needle-point of a diathermy cautery and puncturing the wall of the abscess to the depth of about $\frac{1}{4}$ inch at intervals about $\frac{1}{2}$ inch apart so that the entire lining of the abscess is destroyed along with the gland. In cases where there is not such a severe local reaction the abscess can either be dissected out along with the gland, without rupturing it, or the abscess incised, emptied, and then dissected out being sure to take the gland with it. In sewing up the bed of the abscess it is a good idea to dust in some penicillin powder and to leave the skin edges unstitched, contenting oneself with simply bringing together all the tissues up to the skin. This allows for easier drainage in case there is a hemotoma or flareup of infection.

RETROVERTED PREGNANT UTERUS

Practically all retroverted pregnant uteri antevert themselves between the second and third month but since there is a greater tendency for the retro- than the anteverted uterus to abort it may be a good idea, in cases that show evidence of threatening, to push the uterus up into the anteverted position and insert a Hodge pessary for the next two or three weeks. If this procedure is difficult and causes a lot of discomfort to the patient the insertion of a Hodge pessary without anteverting the uterus will usually push it up within a week or two. The only occasion where the retroverted pregnant uterus would otherwise present a problem is where it is held down by adhesions or other causes and the pregnancy continues in that position. In this case the great danger is not from a possible miscarriage but from pressure of the enlarged uterus against the urethra with retention of the urine or retention overflow. If a woman says she is passing her urine every few minutes and has a great deal of low abdominal pain she probably has retention overflow. In this particular situation the best thing to do is simply to insert an indwelling catheter and wait for the anterior wall of the uterus to sacculate upwards and thus provide room for the foetus in the abdomen. The incarcerated retroverted uterus requiring such treatment is a most rare occurrence.

BLEEDING AFTER THE MENOPAUSE

Since bleeding after the menopause can mean carcinoma in a fairly large percentage of cases the complete diagnostic investigation of a woman presenting this symptom is an urgent matter. What is the complete diagnostic investigation of the post menopausal bleeding uterus? (1) Inspection of the cervix to rule out carcinoma of the cervix or cervical polyps. (2) Bimanual examination of the uterus and ovaries to determine any enlargement or tumor of either. (3) D & C. (4) Vaginal hysterectomy. It is certainly wiser in the case of suspected carcinoma of the body to have the woman handled at a centre where radium is available and for the following reasons: (a) if the D & C reveals tissue that can be immediately spotted as malignant it is greatly to the patient's advantage to have radium inserted immediately into the uterus and

then have the total hysterectomy and bilateral salpingo-oophorectomy six weeks later after the radium has got in approximately its full effect. In the event that D & C does not bring forth malignant tissue it is our policy to do immediately a vaginal hysterectomy and to open the uterus. If evidence of malignancy is now seen, the tubes and ovaries are removed at the same sitting and radium is applied to the vault of the vagina (where recurrences appear so frequently) or deep therapy X-ray is given. It will be seen that, having obtained nothing suspicious of malignancy with the curette, we do the hysterectomy as an extended biopsy for the reason that it is possible to curette all around a malignant polypus without obtaining suspicious tissue. If a Papanicolaou test is being done in a case of suspected carcinoma of the body it is better to do so by putting a ureteral catheter up into the uterine cavity and sucking on it with a syringe, the matter sucked to be placed on a slide which is immediately inserted in the alcoholic-ether solution.

TRAUMA EMOTIONAL SHOCK AND PREGNANCY

Every doctor who deals with obstetrics is consulted from time to time by the pregnant woman who has fallen down stairs or found her husband in the arms of a blond or some such other traumatic or emotional shock. Probably the trauma has little effect in disturbing a normal pregnancy but there is some evidence that emotional shock does have a disturbing effect. It is a good idea in both types of case to put the patient to bed on phenobarb for 24 hours until matters have settled down and the woman is herself again.

X-RAY AND THE PRIMIPARA

On the basis of value all primiparae should have an X-ray study of their pelvis so that the obstetrician will know from that time onwards at least the type and capacity of this particular woman's birth canal. There are four factors present in any labor, the size of the pelvis, the size of the baby, the force of the uterine contraction and the X, or unknown, factor. The only one of these factors concerning which we can obtain absolute and complete knowledge is the first and that can only be done by X-ray. Despite the fact that the geneticists are suggesting that too many people are being exposed to too much radiation, it would seem more sense for the human race to stop atomic explosions than X-ray studies of the obstetric pelvis. When I hear that Eisenhower and Krushchev have agreed to abolish the bomb I may then recommend the abolishment of these X-ray studies.

BLEEDING IN EARLY PREGNANCY

While most cases of bleeding in early pregnancy represent a threatening to abort, other possible factors should not be neglected. A cervical polypus of considerable size may develop during a pregnancy and, of course, carcinoma of the cervix must always be kept in mind, whether the bleeding woman is pregnant or non-pregnant. It is, therefore, important that in all women where the bleeding has lasted for more than a few days and where there is no such other evidence of impending abortions such as increase in the amount of bleeding or crampy pelvic pains, the cervix should be visualized by a speculum and if it looks suspicious a Papanicolaou test or a biopsy taken. The taking of even a cone biopsy does not necessarily produce a miscarriage. Delay in diagnosis of carcinoma in the pregnant woman is serious, since the growth progresses so rapidly in the pregnant state. It is, therefore, urgent that in any case of per-

sistent painless bleeding during pregnancy, the cervix should be visualized at the earliest possible moment.

DYSPAREUNIA

This distressing symptom has four facets. It may be caused by:

- (1) painful conditions or irritation of the vagina such as tender hymenal tags, *Trichomonas vaginalis* or monilia, kraurosis vulvae and shrinking of the parts at the time of the menopause.
- (2) a tender cervix which, when struck, causes pain.
- (3) extra uterine conditions such as tender prolapsed ovaries under a retroverted uterus, endometriosis and chronic P.I.D.
- (4) Dyspareunia cerebri where the condition seems in the head rather than in the pelvis.

The first three facets above described need only be diagnosed to be treated and the treatment is likely to be successful, but dyspareunia cerebri is practically incurable except under the most extended psychiatric treatment. It constitutes one of the most difficult problems in therapy. Its differentiation from pelvic dyspareunia can often be made by comparing the results of vaginal with rectal examination, since in these cases a cervix that may be extremely tender on vaginal examination is not tender at all when pushed about the pelvis per rectum. A further investigation of the patient's psychological history usually reveals an accompanying frigidity and other evidence of maladjustment.

FIBROIDS AND THE MENOPAUSE

Because fibroids tend to shrink after the menopause there is a tendency to tell the woman who is close to that period and who has one, that all she needs to get rid of her trouble is patience. This would be wonderful advice if one could be sure it is a fibroid. Unfortunately, not even the best of us can manifest such wisdom. Even the greatest diagnosticians have thought they had a fibroid when the nigger in the pelvic woodpile was a malignant ovarian tumor. I have long since given up being dogmatic about the nature of pelvic tumors at this age of a woman's life, and take the stand that if there's a lump in the ageing woman's pelvis it should be operated upon.

CATHETERIZING THE FEMALE PATIENT:

This is easiest and most efficiently done with a metal female catheter. If the small ring underneath the down end of the catheter is grasped with an artery forceps at an angle of 90 plus 45 degrees, and boiled that way, the forceps can be used to insert the catheter and direct the stream of urine. The forceps holding the catheter, can be laid down anywhere so that the catheter sticks into the air and does not get contaminated. The other advantages of the metal catheter are that (1) it never wears out or falls to pieces and (2) it doesn't wobble all over the place, and is, therefore, easier to handle. Schools of nursing teach their nurses never to use it. There are two reasons for this: (1) Schools of nursing are notoriously timid and backward, and (2) The fear of the solid catheter is really a fear of the old glass catheter that used to fragment so easily after being boiled too often. But for the forward-looking doctor who does the occasional catheterization in his office, this metal catheter technique can be very time-saving and satisfactory.

H. B. A.

A Reminder On The Treatment of Salicylate Poisoning In Children

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BESIDES those who prefer their suicides with analgesia and a minty exodus, the insatiable curiosity of children often leads to the accidental ingestion of toxic doses of salicylates.

Up until a few years ago, the treatment of the metabolic upsets associated with salicylate poisoning consisted of the immediate intravenous administration of alkaline solutions, because it was believed that plasma acidosis was the immediate and only result of the metabolic upset. However, the contrary was shown when the patho-physiology of salicylate poisoning was established.

Bear with this paper, as the patho-physiology is reviewed in two phases before giving the treatment based on these phases. First, a few words on the fate of the drug:

Salicylates are rapidly absorbed from the gut and appear in the urine fifteen minutes after ingestion. Eventually, 80% of the ingested amount is excreted in the urine; the other 20% is lost in the limbo of body metabolism. Two hours after ingestion the highest blood concentration of the drug occurs and after twenty-four hours about 70% of the amount ingested is excreted.

Toxic effects are noted after doses of 1 grain per pound, and be aware that one teaspoon of methyl salicylate is equivalent in effect to 12 ordinary aspirin tablets. Avoiding the parrot technique, I won't copy from any text all the signs and symptoms of poisoning for this article, but will stress that one of the early effects is respiratory stimulation due to a central effect.

Patho-Physiology—This is divided into two phases, upon which is based treatment.

Primary Phase —Respiratory alkalosis—this results from the hyperventilation due to respiratory centre stimulation. There is an excess of CO₂ blown off. As a result the serum pH increases. **Note**—During this phase the urine reaction is basic as a compensatory mechanism.

Secondary Phase —Metabolic acidosis—this eventually results from a number of causes:

(a) ketosis from the upset in carbohydrate metabolism due to the salicylate, (b) deficit of base because of the loss in the urine during the primary phase, and (c) from the dehydration that ensues. The time for conversion from the primary phase to the secondary varies from one to six hours and is inversely proportional to the amount taken. Simple litmus paper testing of the urine reaction will offer a guide as to the phase.

Treatment —(a) Gastric lavage—a messy but essential step.
(b) Oxygen—to combat tissue anoxia and the hyperpyrexia.
(c) Vitamin K—hypoprothrombinemia can ensue from liver damage and it may be wise to give this prophylactically.

(d) Intravenous fluids—based on the consideration of the two phases of the metabolic upset.

(1) Up to 6 to 8 hours after ingestion and/or with a basic urine reaction, use:

5% Glucose in Water }
Isotonic Saline } — equal parts

and run at 2 cc./lb. of body weight/hour, e.g., 80 cc.s per hour in a 40 pound child.

(2) After 6 to 8 hours, with an acid urine and clinical evidence of acidosis, use this mixture:

1 part 1/6 Molar Lactate
2 parts Saline
3 parts 5% Glucose in Water.

As to the total amount of fluid to give in either instance, calculate 30-50 cc. per pound per 24 hours.

As an interne at the General Hospital in St. John's, Newfoundland, I had occasion to see a case of methyl salicylate poisoning about eight hours after admission, and the following case report is based on a few notes made at that time.

Case Report—A three year old child was admitted about one hour after having swallowed an unknown amount of oil of wintergreen. The child was seen by the author about eight hours after admission, when the nurse reported that he was drowsy. On examination, the child appeared markedly flushed, exhibited acidotic breathing, barely responded to stimuli, and the rectal temperature was 101.2.

From both the interne's brief notes and the nurses' notes, the chart revealed that on admission the child appeared lucid, although crying, and the parents stated that he had vomited a great deal after ingestion. It is presumed that gastric lavage was not done on admission because of this history of immediate vomiting. A routine hemoglobin, Wbc and urinalysis had been done about two hours after admission, (approximately three hours after ingestion), and the lab report showed an *alkaline* urine reaction.

After obtaining a catheter specimen at this time, the urine was distinctly acid in reaction and an emergency CO₂ combining power was 14 mEq/ liter. The following treatment was started and calculated thusly:

The child's weight was 23 pounds—
∴ 23 x 30 cc. = 690 cc. of fluid to be given

The following was mixed:

100 cc. 1/6 Molar Lactate
200 cc. Isotonic Saline
300 cc. 5% Glucose in Water

This was run at 80 cc./hour for the first two hours and thereafter at 40-50 cc./hour.

Within twelve hours there was good improvement and a repetition of the treatment over the next twenty-four hours terminated the need of further intravenous therapy. No further electrolyte studies were done, and the child was discharged from hospital.

REFERENCES

1. Goodman and Gilman, "The Pharmacological Basis of Therapeutics," Macmillan, 2nd edition, 1956, page 294.
2. Staff Meetings of Mayo Clinic—Sept. 21, 1950.

Secretary's Page

THE REVISED SCHEDULE OF FEES

The members of the Nucleus Committees on Fees, Chairman Doctor F. M. Fraser, and Public Relations, Chairman Doctor D. I. Rice, met on January 18th, 1958. As a result of that meeting and the subsequent meeting of the Executive Committee on January 27th, a notice announcing the Revised Schedule was published in the press January 31st and February 1st. The press regarded the Notice as "news" which resulted in a news item and an Editorial entitled "Justified Revision" in the Chronicle-Herald of January 31st. Radio stations CJCH and CHNS included the announcement in "news" on the same date and subsequently on February 3rd reference was made to the revision on "News Pageant" over CJCH.

The report of the Committee on Public Relations to the Executive Committee on January 27th included a recommendation that Insurance Companies carrying medical benefits be sent a schedule of fees with an accompanying letter. The Executive Committee approved the recommendation and the letter which is as follows:

Halifax, N. S., Jan. 31, 1958.

Dear Sir:

The Nova Scotia Division of the Canadian Medical Association has this date forwarded to insurance companies, engaged in the underwriting of Medical Services, the most recently authorized revised Schedule of Fees as it applies to the practice of medicine in the province of Nova Scotia. A copy of this schedule is enclosed for your information.

For many years, practicing physicians in this province, both individually and collectively, through properly approved motions at Annual Meetings of The Medical Society, have voiced dissatisfaction with the present attitude of the majority of insurance companies in dealing with the remuneration of doctors for insured medical services.

The introduction of this revised fee schedule to all applicable insurance agencies will, we trust, provide a basis for better understanding in the future.

We solicit your co-operation in informing the members of your organization of the official attitude of The Medical Society of Nova Scotia in this regard.

1. The Schedule of Fees as provided, is the authorized schedule for the payment of medical services to properly licensed medical practitioners in the province of Nova Scotia; no other schedule is recognized.
2. The introduction of a third party in the payment of medical fees in no way changes the responsibility of the person receiving the service for the full payment to the doctor for services rendered. While it is recognized that few of any insurance companies provide a comprehensive medical insurance, many insurance agents in their enthusiasm to sell policies, apparently fail to so inform subscribers of this fact. This has created, in many instances, a basis for an unpleasant relationship between doctor and patient. This situation is aggravated by the inclusion in many policies of a fee schedule designed by the particular insurance company resulting in the erroneous implication to the subscriber that this is an all inclusive fee acceptable to the doctor.

The changing pattern of payment for medical services requires the doctor to spend considerably more time in an administrative role. He is constantly being requested to complete forms, review records, and otherwise provide information regarding patients for the use of insurance companies. These represent services for which the doctor is entitled to a fee and these services have been included in the Schedule of Fees (e.g. Page No. 10 — Sections D-27-30).

In these circumstances where the services are requested by an insuring agency, the responsibility for payment must be accepted by that agency and paid for according to the Schedule of Fees as presented. The practice presently being employed by some insurance companies, of attaching a cheque in the amount of two dollars to cover "secretarial costs" cannot be accepted.

Again, may we point out, that these remarks represent the official attitude of The Medical Society of Nova Scotia, and have been duly approved by the Executive Committee at its meeting on January 27, 1958. The revised fee schedule is now in operation, and the profession have been informed of the nature of this communication.

A copy of the revised Schedule of Fees has now been sent to all members of The Society. Extra copies or copies for replacement may be obtained at \$2 per copy. Practising physicians who are not members of The Society will obtain a copy when they have become members, or may apply for the revised Schedule. The cost will be \$2 per copy. The foregoing are directives from the Executive Committee.

Membership

Membership in good standing in The Medical Society of Nova Scotia stands at 525 for 1957, as compared with 478 for 1956, and 504 for 1955. This improved picture reflects in no small measure the increasing activity of Branch Societies during the past year. There were 57 new members in 1957. Continued co-operation between the Branch Societies and this central office will result in a further increase in membership in Branch Societies, the Nova Scotia Division and The Canadian Medical Association during 1958.

Sending out bills for 1958 was started on January 15th. The response has been very gratifying. Members are reminded that dues for 1958 should be paid not later than June 30th. A further point in particular reference to 1958 is that The Canadian Medical Association meets in Halifax June 16th to 20th inclusive.

LOCUM TENENS

This office as of February 10th, 1958 has listed seven who have indicated a desire to take locum tenens and two requests from physicians for such. Practising physicians who may be thinking of a replacement for holidays, etc. are reminded that a number of the graduates will be available for varying periods of time.

The Secretary also has the names of three of the graduating class who are interested in a location for practice, either as assistant or as a separate venture.

C. J. W. B.

College of General Practice of Canada

SCIENTIFIC ASSEMBLY - WINNIPEG - APRIL 14-16, 1958

Members of the College and other interested general practitioners are reminded that the Second Annual Scientific Assembly is being held this year at the Royal Alexandra Hotel, Winnipeg, April 14th-16th.

An excellent programme has been arranged including Scientific Sessions Monday, Tuesday and Wednesday with 24 guest speakers from various parts of North America; a wide selection of medical films shown daily from 9.00 a.m. to 5.00 p.m.; live demonstrations and 30 scientific exhibits of especial interest to general practitioners; over 70 technical exhibits by pharmaceutical houses and medical suppliers; health examinations for attending doctors who so desire.

On Monday, April 14th, at 8.30 p.m. there will be open meetings of all College Standing Committees.

On Tuesday, April 15th, The Annual Meeting of the College will be held at 4.00 p.m. and Annual Dinner at 7.30 p.m.

A full programme has been arranged for doctors' wives during the three days of sessions.

Housing applications forms must be completed by April 1st in order to guarantee reservations and should be forwarded to

Dr. A. G. Henderson,
2031 Portage Avenue, St. James,
Winnipeg 12, Manitoba.

Reduced fares are being provided by T.C.A. and the Railways on submission of identification certificates which can be obtained from the College of General Practice Office, 176 St. George Street, Toronto 5, Ontario.

This promises to be an excellent meeting and it is hoped that a good representation of practitioners from Nova Scotia will find their way to Winnipeg.

Annual Meeting—Nova Scotia Chapter—College of General Practice

Dr. H. B. Whitman, President, has called the Annual Meeting for Saturday, March 1st in New Glasgow. It is an open meeting to which all interested practitioners of Nova Scotia are welcome. A clinical programme has been arranged between 10.30 a.m. and 4.30 p.m., with Dr. Martin M. Hoffman as the guest clinician, sponsored by the Post-Graduate Division, Dalhousie University. The business meetings and a dinner will follow. The after-dinner speaker will be Dr. W. Victor Johnson, Executive Director of the College of General Practice of Canada. All interested practitioners are specially invited to attend the banquet and speech.

Dalhousie Post-Graduate Division Announces Spring Programme

Again this year the doctors of the four Atlantic Provinces are offered a "Short Course in Psychiatry" at the Victoria General and Nova Scotia Hospitals on February 24th, 25th and 26th. The detailed programme is already in the hands of the practitioners.

The "Week in Medicine" for 1958, running from March 17th to 21st, features cardiovascular diseases with Dr. Jacques Genest, Director of Clinical Research, Hotel-Dieu, Montreal, and Dr. John N. Armstrong, Cardiovascular Physiologist of Toronto, as guest speakers.

The "Week in Surgery" occupies the week of April 21st-25th. The guest speaker will be Dr. Stuart, Dr. Gordon, Assistant Professor of Surgery, University of Toronto, and general surgery will be featured.

Detailed programmes in medicine and surgery will be mailed to all practitioners approximately one month before the course. The usual week on obstetrics and paediatrics in late May will not be held because of the Canadian Medical Association meeting in Halifax, June 16th-20th, 1958.

Regional Courses have been arranged for Cape Breton, to be held in Sydney once weekly April 8th-May 6th inclusive, and for Pictou/Antigonish counties to be held in New Glasgow once weekly from March 12th to April 16th inclusive. Detailed programmes will be mailed to the practitioners in these two areas.

Personal Interest Notes

The Bulletin extends sincere sympathy to Doctor C. C. Stoddard of Halifax on the death of his mother Mrs. Arthur F. (Janet) Stoddard which occurred on January 14th, at the age of eighty-two, following a lengthy illness; and to Doctor Henry Reardon of Halifax on the death of his father, Mr. Frank Reardon Sr., on January 11th, at the age of eighty-nine.