RATIONAL OBSTETRICS FROM THE TEACHING VIEWPOINT*

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WIDELY different views with regard to the wisdom of teaching by precept and example, some of the present-day methods in obstetrics prompted the selection of this title.

While the term rational rather implies that some methods are irrational, let it be understood that this is not a criticism of any method or methods that have proved to be for the best interests of the mother and child in decreasing mortality and morbidity, or in the alleviation of suffering during childbirth.

The methods selected for discussion regarding which opinions differ greatly are: First, "the injudicious use of pituitrin"; second, "an inconsistent idea with regard to diaphoresis in eclampsia"; third, "the abbreviation of the second stage of labor by forceps, with or without perineotomy," and fourth, by "podalic version." It is also an appeal, from the teaching viewpoint, for safeguards around women during pregnancy and with some of the unusual and newer methods during labor. Not new, they are old methods with new applications.

We stand for everything that is new, modern and progressive just so long as *bona fide* statistics, reasonably large in number, prove the efficacy of said methods.

Remarkable progress and improvement have resulted from prenatal study and treatment, also from postnatal observation and care; likewise from the recognition of the necessity for cleanliness (asepsis and antisepsis), but in the conduct of delivery, in the opinion of the writer, the pendulum is inclined to swing too far from conservatism or ultraconservatism, in the direction of radicalism, and in some instances, irrationalism. Not at the hands of the promulgator of a new or special method. All new things must have a beginning and the originator of a new method is usually a specialist, with experience, and competent to do the thing successfully, that he or she has started to do.

The danger lies not with the originator, but with the fearless imitator, the less competent, or the enthusiastic beginner.

For example, after reading his paper on podalic version before this Society by perhaps the greatest present-day exponent of that method of delivery, a hospital interne was present and insisted that he be given the privilege of delivering all women in the wards by version

while he was on the service, apparently blind, or at least near-sighted, to the dangers attending the operation.

I. INJUDICIOUS USE OF PITUITRIN

Not less dangerous is the injudicious use of pituitrin. A most valuable remedy when cautiously administered and yet a dangerous drug before or during delivery unless the patient's susceptibility to it is first ascertained by its administration in small doses. The fact that five or six minims will create more vigorous contractions in labor in some women than a whole ampule will in others, while in still others it is absolutely inert, are facts too well known to need further comment.

Following the advent of this extract, when its value as an adjunct in labor was first heralded, it was not unusual to hear physicians state that "they had put aside their forceps and no longer waited around for a long labor, that they simply gave an ampule of pituitrin and promptly terminated it."

This attitude still prevails with some of the profession. The temptation to hasten labor in this manner is often great, but the danger cannot be overestimated unless the physiologic effect is first determined by the administration in minute doses and then only after all contraindications, both fetal and maternal, have been eliminated.

Not long ago I saw a woman in consultation who died from rupture of the uterus, before she could be gotten to the hospital for operation, following the administration of an ampule of pituitrin, near the end of the first stage of labor; a para vii, with a broad flat pelvis and the child in the transverse position. According to the history this woman had violent pains and contractions soon after the administration of the drug, then suddenly collapsed, so that there could be no question as to the cause of the rupture.

Not only is the mother in danger but likewise the unborn child, from compression as a result of the more or less continuous contractions, one of the characteristic features, should the patient respond to the action of the drug. Again the danger lies not so much with the obstetrician who is familiar with these facts, as with the practitioner doing obstetrical work who is busy along general lines and probably neglects to keep well informed as to the dangers in connection with this practice.

II. DIAPHORESIS IN ECLAMPSIA

"Exhaustion of a patient and concentration of the toxins from sweating in eclampsia," has always seemed to me to be an erroneous or at least inconsistent idea in view of the fact that nearly all educators agree and teach that elimination through the skin as well as

through other channels is most essential, regardless of other plans of treatment.

Under normal conditions it is estimated that the excrement through the skin of an adult averages about one pound in twenty-four hours.

In eclampsia the pores are inactive or blocked, which means retention and greater toxicity, besides concentration of the toxins by skin elimination is an utter impossibility as long as water is administered. By mouth, if the patient can swallow, if not the continuous alkaline solution (Fischer's) by proctoclysis dilutes the toxins, prevents concentration and guards against exhaustion.

Better still, especially if the patient is retching or vomiting, is the administration of the alkaline solution through the stomach tube directly into the stomach after it has been washed out. In this manner it has been shown that the water is readily absorbed and promptly reaches the blood stream.

Furthermore, sweating to the point of exhaustion is not necessary as moderate diaphoresis serves the purpose. Mrs. C., a primipara, had three eclamptic convulsions at the beginning of her seventh month, but responded to treatment, and every third or fourth day for two weeks requested the pack on the strength of her improved subjective symptoms, together with the desire to reach the age of viability of the child and in each instance experienced a sense of great relief, and this is only one of many similar instances. She was delivered of a healthy child two weeks before term.

III. ABBREVIATIONS OF THE SECOND STAGE OF LABOR

The thought uppermost in my mind is to elicit discussion on a subject, practiced and preached, to some extent; viz., the so-called "elimination of the second stage of labor," a thing that cannot be done.

Labor by the natural route consists of three distinct stages: First, the stage of dilation or dilatability; second, the stage of expulsion or extraction, either with forceps or by version; third, expulsion of the placenta and membranes with retraction and contraction of the uterine muscles and the control of hemorrhage, so that the only way in which the second stage can be eliminated is by cesarean section.

Abbreviation of the second stage and modification or elimination of the pains of the same, is quite a different matter. This can be done and in my opinion should be done with a general anesthetic within the limits of safety, together with forcep extraction when there is delay, but it is not the pains of the second stage that give us the greatest concern. It is the sharp cutting pains of the first stage, when the patient can scarcely be made to realize that she is progressing, then it is that she endures both physical and mental

agony, when little more can be done than to modify the pains with mild narcotization, while in the second stage the pains may be greater, they are not so sharp, nor cutting and are better borne because she realizes that she is progressing.

Here obstetric anesthesia is a decided advantage, not only to modify the pains, but to aid in the relaxation of the outlet and in the exercise of the voluntary forces, going a step further, to full anesthesia during the completion of this stage; also when forceps are to be applied. Some women of course do not want an anesthetic and do not require it.

Obstetrics is a surgical subject, normal as well as operative obstetrics, in the sense that asepsis and antisepsis should be as rigidly enforced in the one as in the other. Microorganisms will quite as readily invade the maternal organism through the normally bruised vaginal mucous membrane as they will through a laparotomy incision. On the other hand labor, in the absence of pathologic conditions, is a physiologic process and it is for the best interests of the mother and her offspring to maintain the physiologic as nearly as possible, modifying or eliminating pain, the terror of childbirth, whenever it is possible to safely do so.

IV. PODALIC VERSION

Podalic version has its definite indications, i.e., the malpositions, prolapsed cord, some cases of eclampsia, some placenta previas, etc., as taught in all medical colleges, with manikin and on the living subject, with emphasis on the contraindications and the dangers attending the operation. I question the wisdom, however, of deliberately converting the normal into the abnormal or the physiologic into the pathologic simply for the purpose of shortening the second stage when it can be done in a safer way and without pain.

The women of Buffalo and vicinity are safe in the hands of Dr. Potter. We admire him for his skill. He is an expert at the business. The same is true with a few others, imbued with the same idea, who have succeeded well and have made good reports, but what of the countless numbers subjected to this plan of treatment by the enthusiastic beginner or the less skillful following this example, who may not always recognize a weakened area in the uterine wall, which predisposes to rupture, a high sacral promontory, a slightly contracted pelvis, retention of the fetal head from extension, the result of faulty manipulation, a head that is larger than it appeared to be with no opportunity to mold as with the forecoming head? Nor is it always the beginners or the unskillful that make these errors of judgment.

The fetal mortality in podalic version is of necessity high. Dr. Potter's series is perhaps the largest of any one operator, with a fetal mortality of 7 per cent plus, including those that die during the

first two weeks, with the exclusion of his border-line cases, from 8 to 10 per cent, who are subjected to cesarean section. Dr. Robert L. Dickinson, an expert in hospital reviews and surgical accounting, who obtains his averages from the statistics of many hospital records, found that the fetal mortality in hospitals that excluded abortions and ectopics from the obstetric service, and this includes stillbirths and those that die within ten days after birth, was about 3 per cent. He further states that while cesarean section varies from 0.3 to 18 per cent, the average percentage based on legitimate indications for section, is from 1 to 2 per cent, and that hospital records that show 2 per cent or over of cesareans, should call for investigation.

So that if the 8 or 10 per cent of cesarean sections in the podalic version clinics were limited to the legitimate indications for section, their fetal mortality would be much higher than 7 per cent.

The subsequent morbidity following the ironing out process and dilation of the vaginal outlet sufficient to give birth to an unmoulded after-coming head with so small a percentage of lacerations, should also be taken into account. There must of necessity be marked relaxation following this process.

Why teach by precept or example the conversion of the perfectly normal, into the abnormal, or the physiologic into the pathologic when it is absolutely contrary to the laws of nature?

V. FORCEPS

The wisdom of shortening the second stage of labor with forceps under anesthesia when there is delay, is not questioned but strongly advocated, thereby eliminating pain and ofttimes preventing pathologic conditions to the newborn. My belief and teaching has been and still is, that more cranial and intracranial injuries to the newborn occur from delay during the second stage than from forcep delivery when the forceps are correctly applied and carefully manipulated.

Exceptions to this rule, of course, are when there has been a mistake in judgment as to the degree of disproportion, when section should have been performed instead of forceps delivery.

Very rarely do birth injuries immediate or remote, result from the applications of the forceps, when the application is correctly made, with the application in relation to the occipitomental plane of the head and not one blade partly over the occiput and the other partly over the cheek and forehead, as often occurs unless cautious, when the application is made before rotation is complete. Then too, I have frequently observed that the beginner is inclined to depend largely upon traction and very little upon correlation of the long axis of the head with the axis of the pelvis, especially of the outlet,

thereby maintaining the curve of Carus. This is an art in which medical students cannot be drilled too thoroughly, first with the manikin and then on the living subject under supervision during their internship.

VI. EPISIOTOMY

Episiotomy is an old operation, more or less radical, quite easy of accomplishment, so far as making the incision is concerned, though more difficult to complete and obtain satisfactory results.

This is an ideal operation, as an adjunct to forcep delivery when the indications are definite, i.e., when immediate delivery is demanded without time for proper moulding and dilation or when it is clearly apparent that the laceration is going to be extensive and ragged, or any condition in which forceps delivery is indicated, *except* for the one purpose, viz., that of shortening the second stage of labor.

So that I question the wisdom of teaching in any sense routinely this rather new application of perineotomy originated by Dr. De Lee.

With the gynecologist or obstetric surgeon and their perfected technic, under proper environments, in the hospital, the results are usually most satisfactory but all women are not going to be confined in the hospital and many of them will continue to be confined by their trusted friend, the family doctor.

Furthermore many primiparae with whom lacerations are apparently inevitable can be delivered under full anesthesia with forceps, after dilation of the outlet, without episiotomy and without laceration.

I recall that of the last ten primiparae delivered with forceps, seven had no laceration, two had first degree only, and one with an enlarged vaginal gland had a lateral laceration without involvement of the skin. All united promptly after the minor repair and no scar exists to remind them of an episiotomy.

Spontaneous lacerations occur at the weakest point of the perineum and when properly coaptated, whether at the immediate or intermediate period and are well repaired, that weak point is strengthened.

The writer is not prejudiced against episiotomy. As stated, it is ideal with definite indications, but subject to complications, as are other surgical procedures, and why subject a patient to this surgical procedure that might otherwise be a physiologic labor, when for no other purpose than to shorten the second stage? Why cut through the barrier, the rim of the vulval orifice, so constituted by Nature as to protect the weaker tissues beneath, when without the operation there would probably be no laceration or only one of minor importance? One has no assurance that the laceration will not extend beyond the depth of the incision.

In this connection a well-known, successful gynecologist informs

me that in a certain percentage of his cases with whom he felt that episiotomy was indicated, lacerations extended from the depth of his incision to the pelvic bone, and one recently in three directions, also that in 75 per cent of those operated there had been no primary union or only partial union. He further states that by reason of the usual location of a perineotomy incision, the tissues involved and the disturbance of the circulation, make the secondary repair much more difficult than the secondary repair following a spontaneous laceration, which has occurred at the weakest point in the perineum.

Two other facts have been noted, a sensitive scar in some instances and in others, loss of contractility on the one side. If primary union occurs the perineum is unique and the support is good, but relaxation above the perineum is dependent upon the degree of involution, as it is in all other deliveries.

Mrs. F., a primipara, was delivered two years ago, in the State of New York. Episiotomy was performed, although the labor, according to the history was perfectly normal. Primary union followed, and she still enjoyed health barring sensitiveness of the scar.

She is now pregnant again and at three and a half months' gestation had a second degree procidentia and was obliged to lie in bed for ten days. The episiotomy was not a factor in the production of the prolapse, but it did not do what is ordinarily expected, prevent it.

Of course the serious complications are rare, but they do exist and like the complications and dangers in connection with podalic version, should be emphasized, and from the teaching standpoint, in the writer's opinion the operation limited to those with definite indications.

The question naturally arises why not make experts out of medical students by drilling them in these special methods. That *is* done during the curriculum course with manikin and on the living subject, again during their internship, in the hospital, on the living subject under supervision, but an expert cannot be made any more than a specialist can be made.

I recall an instance where a class had been drilled pretty thoroughly in the methods of doing version and in the management of delivery with the breech presenting. One member of the class graduated, attained quite a practice and became quite enthusiastic with his work in obstetrics. On this occasion extension with retention of the aftercoming head following version occurred and not knowing or forgetting what next to do, amputated at the base of the brain. It is needless to say that it was with some difficulty that the head, rolling around in the uterus was extracted. He simply lost his head, as others will do if they attempt something beyond their skill, and the patients are the victims.

Efficiency can only be attained in the school of practice, by devotion to work along special lines of his choosing, or to postgraduate work. The medical curriculum is too crowded for specialization.

In my clinics and teaching at the University our attitude with regard to the special methods and in fact all methods may be summarized as follows: No routine is permissible except with minor affairs, such as diet, with normal cases, etc.

Every case is a subject for individual study and management.

The physical examination includes the determination of her tentative manner of delivery, whether normal, based on her pelvic dimensions, also the size, presentation and position of the fetus.

As with elective cesarean section, those cases with definite indications for version are determined in advance of labor, while emergency section, forceps delivery, developing indications for version and episiotomy are decided upon during labor.

We endeavor to teach in that broader sense whereby our students are given the benefit of the teachings of other clinicians—whose ideas may or may not differ from our own, with their reasons for so doing, and finally, disregarding wholly that sentimental idea that "the greater the pains in childbirth the greater the love and affection for her offspring," the labor is made as short as it can consistently be made within the limits of safety and as nearly painless as it is possible to make it, with mild narcotization, preferably minute doses of morphine (gr. $\frac{1}{4}$) and scopolamine (gr. $\frac{1}{100}$) during the first stage and chloroform or ether during the second stage. Chloroform is the choice with the normal cases and those who are toxic with kidney insufficiency, and ether with operative cases, also those who are toxic with pronounced liver pathology, with spinal anesthesia in reserve when ether and chloroform are contraindicated.

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(*For discussion, see page* 222.)

DR. J. C. APPLEGATE read a paper entitled **Rational Obstetrics from the Teaching Viewpoint.** (For original article see page 181.)

DISCUSSION

DR. EDWARD A. SCHUMANN.—I am heartily in accord with all the general truths Dr. Applegate has enunciated. Obstetrics and internal medicine are the two branches which are common to almost all of us. Surgeons may describe surgical technic for surgeons, serologists may modify their reactions for the benefit of their serology, but when obstetricians describe their procedures it is doctor speaking to doctor, and we may say that any procedure which tends to lessen irksomeness and burdens will find a ready ear in the profession. For that reason we must be exceedingly careful about what procedures we advocate as aids to obstetrics. Now coming definitely to some of those which Dr. Applegate has described, I take it that he discussed in the question of termination of the second stage of labor, or the so-called elimination second stage, only such cases that might presumably be supposed to deliver themselves. The termination of difficult or prolonged labors has no place in this discussion. The technic will apply to the individual case. I feel very strongly, however, that interference with what would otherwise be spontaneous labor, will violate certain surgical principles. In this day and generation when the best surgical minds of the country are condemning vigorously the so-called exploratory laparotomy, unless the indication be very definite, when we are being urged by the American College of Surgeons and the American Hospital Association to eliminate every operative procedure that it is possible to eliminate, when we are taught that every anesthesia carries with it risk

of morbidity and mortality, I think it is a step backward to advocate surgical interference in normal labor. Furthermore, I still believe—apparently this view is old-fashioned—that the cavity of the uterus is an excellent place for the development and multiplication of bacteria. The mortality during convalescence is greater, the deep anesthesia required either for version or the so-called prophylactic forceps operation carries with it certain definite risks. Now in regard to the prophylactic forceps operation of DeLee. From Chicago comes the statement that tocophobia is becoming more and more common and that women fear labor and fear the consequences of childbirth. I firmly believe if I were a Chicago woman and subject to a major, long drawn out operation in delivery I also would have tocophobia. These poor souls are not permitted to deliver themselves, without a serious surgical procedure in addition. Regarding forceps, in my own work and in that of my colleagues, every case delivered by forceps suffers more injury than if forceps had not been used. This applies equally to cases in which episiotomy has been done. I believe that without forceps less injury is done than in the use of forceps. Therefore, I hold that episiotomy with forceps in normal labors is a mutilating operation, and I believe our statistics are not accurate enough to determine the damage to the fetal head. In regard to Potter's work, injuries to the brain are much less frequent in version than in forceps, but I am still to be convinced that fetal mortality is not greatly increased. To summarize, I feel that any unnecessary manipulation is a failure. I believe that the second stage of labor, its troubles and difficulties, are grossly overestimated. With modern methods of narcosis, the second stage of labor offers little trouble in the normal case. When we come to deal with difficult cases, the situation is entirely different.

DR. DANIEL LONGAKER.—The matter of "losing one's head" does occur, and I happen to know of more than one cesarean operation done in search of a lost head, and anyone can tell with what dire results. Criticism was made years ago of a very celebrated and excellent teacher of obstetrics in this city, who was said to use his forceps as skillfully as another would a hypodermic syringe, as a means of relieving pain. I cannot quite agree with the speaker who preceded me regarding the non-expediency of shortening the second stage of labor. Those of us who see much of obstetrics, and when I say see much of it, I mean one, two and three cases a day, contrasting latter day methods of practice with those that prevailed before, we certainly observe a vast amount of uncertainty regarding the duration of the second stage eliminated, and I think with the development of the personal skill that is possible, a vast amount of unnecessary suffering avoided; and likewise a large, a very large and widespread tocophobia. I think if we were in the place of some of these women we would agree with them that we did not want to have another baby very soon. It is pretty hard to resist the pleas of a woman in the throes of labor, when at that time you know that you can safely deliver her. I admit that it is not an easy thing to pass judgment in all cases. In other words, no one can always tell what is going to be a normal case of labor until it is over. You may attempt and fall down in judgment because you have underestimated the size of the head. I do not believe this need mean an increased birth mortality if done by one who has developed such a degree of skill as is easily possible. I think, on the contrary, there are directions in which the birth mortality is going to be lessened. I can tally these cases with those in which the second stage of labor was unduly prolonged, and the baby born dead in consequence. It may be expelled naturally, yes, but cord pressure results and the baby is dead, and a timely version or timely forceps would have saved its life. It is very difficult and wrong to say dogmatically that we must follow a certain line of practice. Every case must be individually studied and individually treated.

Covering my own experience of the last decade, probably the greatest number of mistakes that I have made consisted in failing to do an early elective cesarean operation. Where there is a dead baby our patients are not slow in putting this right up to us: "Doctor, why didn't you do a cesarean operation, you could have saved my baby and saved me a lot of unnecessary suffering." It is very difficult to decide, *but I believe this is the crux of the question.* We are very apt to say that Potter does an unnecessary number of cesarean operations in doing 8 per cent, or more, but it would be very difficult to prove this, just as it would be difficult to prove that we would have had a lessened birth mortality of we adhered to expectant plans of treatment. There is a great deal of fallacy in these figures of birth mortality. When you talk of birth mortality you are talking of the mortality that occurs during the first two weeks. Let an epidemic of colds or pneumonia break out in the nursery and birth mortality will go up. Babies will die and not because they were turned, or were delivered instrumentally, or were born naturally.

DR. CHARLES P. NOBLE.—Perhaps it might be of interest if I should say something concerning the impression which recent tendencies in obstetrics have made upon me. The principle that action and reaction are equal and opposite is generally accepted. Also it is well known that movements in practice are wave-like, gain speed and momentum, reach their height, and then tend to subside rapidly. The teachings of Dr. Potter and Dr. DeLee are the height of the wave of the recent tendency to make obstetrics a surgical specialty, and to disregard the age-long knowledge that, in general, labor is a physiologic process.

One who has had considerable experience with doctors knows that they are as much inclined to follow the latest fad or fashion as the women are in hats. It is perfectly clear that the wave of surgical enthusiasm which has dominated many obstetricians, has its chief danger in the likelihood that they will have numerous imitators of their practice among the rank and file, who have not the skill which lessens the unnecessary risks in the hands of misguided experts. It has been known from ancient times that labor for the majority of women is a physiologic process, accompanied by a minimum of risk to mother and child. To make it a major surgical procedure is contrary, not only to logic, but also to common sense.

When surgical asepsis was applied to obstetric practice it lessened the risks of normal labor to mother and child. Also it lessened the risk of all operative obstetric procedures. This in turn properly induced the broadening of the indications for the recognized obstetric operations. Unfortunately asepsis has made safer not only operations which should be done, but also those which could be done.

If efficiency in medical practice had the same criteria as in commerce and manufacturing, namely, the quantity of the output and the amount of profit, there would be no doubt regarding the efficiency of the methods of Drs. Potter and DeLee. But medicine has other standards, the welfare or highest interests of the patient—in obstetrics, of the mother and child. The physician's interests, financial income, and personal convenience, while legitimate, are subordinate and secondary to that of the mother and child. I can see only one good which the profession will reap from the present surgical wave. There is good ground to believe that Dr. Potter has improved the technic of podalic version. This improvement applied under legitimate indications will be a distinct advantage. I can perceive no such advantage as the result of Dr. DeLee's surgical enthusiasm.

One should add that it is a false assumption that women in general are normal, and therefore should have normal labors. We know it is a fact that probably at least one-third of women are sufficiently undeveloped constitutionally, or whose

vigor is sufficiently deficient from the average, that it cannot be expected that labor should be a physiologic process in them; other women are neurotic; still others are deformed; and so there is a definite group of women who have to be assisted by the obstetrician. But with the great bulk of women, I can see no reason why they should not have their babies as their ancestors had before them, and proceed with their labors satisfactorily.

DR. JOHN A. McGLINN.—Probably the most important subject for discussion is the question of the elimination of the second stage of labor in normal cases. I am not old-fashioned nor do I believe my mind crystallized when I find that I am not in accord with the views of Potter, DeLee and their disciples. It must be remembered that because something is new and interesting that it is not necessarily progressive. The majority of new things which come under the head of reform are not progressive; it is only necessary for some one to put forward a new idea in medicine or religion and he will have scores of followers. We can all recall that following Jennesco's visit to America that patients all over the country were being operated upon under spinal anethesia; when pubiotomy was in fashion every one laid in needles and saws and were finding any number of causes for the operation. The same thing happened with twilight sleep. These and many other measures were the rage for a time, but they all died a natural death. All of them had elements of good, and the good has remained; the same thing will happen with the measures to eliminate the second stage of labor. Potter has given us an excellent version; the technic will remain, but no one will follow Potter's fashion of doing the operation in every case. I can see no good in the so-called prophylactic forceps operation and I believe that it will soon be forgotten.

DR. NORMAN L. KNIPE.—We have all become a little iconoclastic, and I do not think that Dr. Applegate can possibly mean that we should not accept anything as worth while unless it has been done for the last twenty or twenty-five years. A number of things he mentioned are worthy of discussion. He spoke, for example, of the terrible accidents that often occur during obstetric practice because of the inexperience of the attending obstetrician in an attempt at new procedures—with especial emphasis on the danger of Potter's version. He mentioned one case of version in which the body had been pulled off the head and the head left in the uterus. Now I saw just the opposite thing done with forceps—the head pulled off and the body left behind. Dr. Applegate also advises against teaching students these various procedures for fear they might do them. I have been teaching students the use of forceps for many years and yet realize that forceps are often dangerously misused. But I hear no one advising against a continuance of this teaching. We know of places where atrocious surgical work is done, and yet no one would think of decrying against the teaching of surgery in our medical schools.

So, if a man like Potter has developed the technic of version until it is now a perfected and beautiful procedure, saves the perineum, relieves the patient of most of her pain and gives remarkable results, why not let the students know about it? We do not advise them to do that particular procedure without special training any more than we advise them to take out an appendix without serving a long apprenticeship. I believe Dr. Applegate is misinformed about the mortality record of modern version. Dr. Potter's mortality is only two and one half per cent.

I am rather sorry Dr. Applegate did not bring up another matter. I thought from the title of his paper, that he was going to tell us some new way of teaching obstetrics. It seems to me that most of the teaching in our medical schools at the present time ought to be much better systematized than it is, and I hoped that his paper might touch upon that point.

DR. J. C. APPLEGATE, (closing).—In reply to Dr. Schumann, my comparison of injuries to the head referred to the comparison between the cranial and intracranial injuries due to delay in the second stage and the correct application of forceps. I am sure that the cranial injuries due to the use of forceps are greater than when let alone, but not when the correct application is made, and when we are not guilty of incorrectly manipulating them. In answer to Dr. Longaker, he, like Dr. Potter, and many others, knows well how to do version. The point was regarding the wisdom of encouraging this unphysiologic method, simply for the purpose of shortening the second stage, in the hands of the average physician. There is where the danger lies and I am still of the opinion that it is not good practice to convert the normal into the abnormal, nor the physiologic into the pathologic under any circumstances—that the operation should be reserved for those with other definite indications for version.