

stretch long enough to allow the delivery without rupturing. Her uterine and other muscular contractions are not interfered with. The mother just knows when her baby is born, but she remembers no especial pain. She does not afterwards live in terror of ever again going through the same experience.

THE USE OF ETHER IN OBSTETRIC PRACTICE.¹

BY CHARLES M. GREEN, M.D., BOSTON.

In opening this discussion of "The Comparative Value of Ether and Chloroform in Obstetric Practice," it is best that I should state at the outset that I have had no experience whatever in the use of chloroform. It seems evident, therefore, that I am ill fitted to discuss a subject with which I am only partially familiar. I have been asked, however, to present concisely the way in which I use ether in obstetric practice, leaving to those who believe chloroform to be the better anesthetic the task of proving their position. This I am willing to do; especially since the burden of proof, in this community certainly, rests on those who would use chloroform instead of ether to produce anesthesia.

In stating my method of using ether in routine obstetric practice, I cannot do better than to quote from a paper I had the honor to read before the Boston Society for Medical Improvement four years ago.²

THE QUESTION OF ANESTHETICS IN NORMAL LABOR.

"In approaching this subject it is well to bear in mind that parturition is a physiological process, and physiological processes ought not to require the assistance of anesthesia. While willing to admit that modern woman is not perhaps the physical equal of her prototype, I am not prepared to grant that she is so degenerate as some writers would have us believe. The changed conditions of modern civilization have certainly wrought some changes in womankind: her nervous organization is not perhaps in many instances so stable and unimpressionable. It is a question whether the modern, higher education of women does not make demands upon their nervous systems which render them less able to bear without anesthesia the shock and pain of maternity. Be this as it may, I am not yet prepared to range myself with those who regard the use of anesthetics a necessary accompaniment of labor. Not that I believe, by any means, that woman should bear the curse of Eve, and submit to the pain of labor as an hereditary punishment; but because I believe that, as a rule, a girl with a healthy mental and physical inheritance, who has been well brought up, who has been well managed during pregnancy, and who approaches her labor in good condition, does not need anesthesia. Having said this much I hasten to remark that I am always ready to administer anesthetics on any reasonable indication, and do, in fact, employ them in moderation in many normal cases, partly to gratify the imperious demand, in the face of no contraindication, and partly for other reasons which will be stated later.

"During the first stage of normal labor it is only exceptionally that I find anesthesia either necessary or demanded by the patient. If this stage is well man-

aged, if the patient is well fed, and her attention properly diverted, she generally passes through the stage with equanimity and composure. If the stage is protracted, if the soft parts are unduly rigid, if the patient is decidedly hyperesthetic, if, in short, the labor is no longer normal, the indications must be met with appropriate therapeutics. Chloral hydrate is the drug, *par excellence*, for needed anesthesia in this stage, administered in fifteen-grain doses, at half-hour intervals, until three doses have been given, if necessary; the effect is satisfactory, and not injurious, if the heart is not weak. I usually give the drug by rectum to avoid disturbing the stomach, which may be already affected with the physiological nausea often seen towards the end of the stage.

"When the cervix is approaching the full dilatation, if the pressure of the passing head on the cervical ganglia causes undue pain, I then resort to ether, administered during the contractions. The amount given is not enough to inhibit the action of the uterus, but still enough to obtund the sensibility of the nerves and greatly comfort the patient. I never allow a woman in labor to bear pain which can be called in any way pathological.

"When the head has passed the cervix and the os has receded, the pain is usually less severe. The patient becomes conscious of progress, she is encouraged and looks forward to the birth of her child. She is cheered to make full use of her pains and brings to bear the material assistance of her voluntary muscles. If within two hours she has not brought the presenting part to the outlet, I cease to regard the case as normal, and employ such interference and assistance as may seem advisable. Otherwise I encourage the patient to make full use of her pains without anesthesia, until the head bulges the perineum, when I begin the administration of ether. This I give moderately at first that I may not diminish the effectiveness of the uterine contractions; but as the head crowns I push the ether, and deliver the woman under full surgical anesthesia. I do this for two reasons: first, because this brief use of ether does no harm, does not paralyze the uterus nor interfere with its retraction; secondly, because with the patient under full anesthesia I am better able to control the expulsion of the head and avoid laceration of the perineum.

"To state once more and in other words my position in regard to the use of ether in labor, I would say that while I am ready to use the anesthetic in the way and manner above described, I believe that the prolonged use of ether, even when not pushed to surgical anesthesia, is liable to inhibit the uterus and retard the labor; further, to interfere with efficient retraction of the uterus and predispose to hemorrhage; again, to etherize the child, and perhaps, in conjunction with a prolonged labor, to result in a still-birth. In short, my way is to soothe the patient with ether, if need be, through the peculiarly painful period when the head is passing the os uteri; then to subject her to a short, sharp labor, not exceeding two hours, and giving surgical anesthesia when the head is born. If after two hours of good labor the child is not born, nor apparently soon to be born naturally, I interfere. I believe that under this management the patient avoids one of the possible causes of post-partum hemorrhage; that she makes a better convalescence; that there is less risk of fetal mortality."

As to the method of administering ether, — I have

¹ Read before the Obstetrical Society of Boston, March 16, 1897.

² *Vide* Boston Medical and Surgical Journal, May 11, 1893.

always employed a towel-cone, and I have used preferably Squibb's ether. When only partial anesthesia is desired, I generally allow the patient to hold the cone and I myself pour on the ether. For surgical or complete anesthesia, in normal cases and in those requiring short, minor operations, I etherize the patient and then give the cone to the charge of a trained nurse, being careful to watch the patient's color and respiration myself, while the nurse observes the pulse. In major operations, I always avail myself of a trained medical assistant, competent to take the responsibility of the anesthesia. Thus far I have never met with disaster from the use of ether, and have never been seriously concerned for my patient, in obstetric etherization.

Death ensues from chloroform anesthesia from five to ten times as often as from ether narcosis. In view of this fact, let us briefly examine the advantages claimed for chloroform as an anesthetic agent.

(1) Chloroform is non-inflammatory and non-explosive, is less bulky, and a smaller amount is necessary to produce anesthesia.

The inflammatory and explosive quality of ether warns us to be careful in its use: I have never seen an accident from the ignition of ether. The comparatively larger bulk of ether may be of consequence in military field surgery; but in civil practice this is of small moment.

(2) Chloroform produces anesthesia more quickly, more agreeably to the patient, and there is less struggling.

It is probably true that chloroform does produce anesthesia more quickly; but it is also true, I think, that a skilful etherizer will, although generally taking a longer time, anesthetize his patient without causing much discomfort or any struggling. In obstetric etherization, the patient is generally allowed to etherize herself, and she becomes unconscious peacefully and without a struggle.

(3) Recovery from chloroform anesthesia is more prompt, the after-effects are less marked and there is less vomiting.

These advantages are, as far as I know, indisputable; but if the patient has been properly prepared for ether, vomiting is not usually a matter of much consequence and often does not occur at all, if atropia has been given. In obstetric practice the post-partum anesthetic sleep affords the patient a grateful rest.

(4) Chloroform causes less salivation and less irritation of the respiratory tract.

This is probably true. More or less profuse bronchial and salivary secretions sometimes give to the etherizer considerable trouble; and it is undeniable that bronchitis has sometimes apparently been caused by prolonged etherization. In marked cases of pulmonary disease, I would, if possible, avoid using ether; indeed I have occasionally operated without anesthesia in such cases. But as far as my knowledge goes, the danger to the lung from ether is trifling compared with the danger to the heart from chloroform. Whatever risk there is to the lung in the use of ether warns us to be extremely careful in its use, and shorten its administration as much as possible.

(5) Chloroform has a less injurious effect on the kidney.

While I am unprepared to speak with knowledge of the effect on the kidney of ether, I understand that in supposedly healthy kidneys ether sometimes causes

albuminuria, and that blood and casts are occasionally found in the urine after etherization; but I also understand that these phenomena are transitory, and disappear in a few days. In cases of chronic renal disease, it is generally conceded, I believe, that ether may cause serious harm. If ether is used in such cases, it should certainly be used sparingly. Whether the risk to the kidneys from ether would warrant us in taking the risks of chloroform, I hope to hear demonstrated this evening.

NASAL OBSTRUCTION WITH REFERENCE TO AURAL DISEASE.¹

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To be attributed to obstructed or neglected nasal respiration are not only deformities of the lower part of the face and of the chest, diseases of the teeth, of the mouth and of the eye, but also many of those of the upper air-passages, including the naso-pharynx, and last but no means least of the ear. Of the affections of the latter organ of special sense in this category those most commonly met with are diseases of the middle ear of a catarrhal or inflammatory nature.

Since the discovery of adenoid vegetations in the naso-pharynx by the late Dr. Wilhelm Meyer, of Copenhagen, in 1868, these growths are probably most commonly considered the cause of nasal obstruction; but since the nose has been opened up to us by the discovery of the anesthetic and constricting properties of cocaine in 1886, it has been found that hypertrophies of the nasal mucous membranes, exostoses, enchondromata and deflections of the septum nasi, not to mention nasal polypi, are also large factors in nasal obstruction.

The principal function of the nose is respiratory, that is, the modification of the inspired air by warming, moistening and straining so that it shall not be irritating to the mucous membranes of the air-passages. That it may accomplish these purposes it is essential that the lumen of the nares shall be free and unobstructed. If this normal condition obtains, the air-currents are free and full and no undue air-pressure, positive or negative, exercises any evil influence. But if because of trauma or improper development (Roe²) one or both nares become more or less obstructed, a partial vacuum is produced behind the obstruction, which, acting like the dry cup, tends to produce a hyperemia which also, as it is more or less chronic, results in a thickening—a hypertrophy or hyperplasia according to its chronicity or the kind of tissue involved. For example, in the soft succulent tissues of early childhood, attempts at nasal respiration, during a cold which has occluded the nose, doubtless bring about a hyperplasia of the naso-pharyngeal tonsil; and this is a very probable factor in the etiology of adenoid vegetations. So also an anterior obstruction of one naris causes a negative pressure behind it and hence a deflection of the septum, as shown by Mayo Collier.

In later life the thickened mucous membrane of the naso-pharynx may be due to the persistence of this

¹ Read before the Massachusetts Medical Society, June 8, 1897, and recommended for publication by the Society.

² Transactions of the Eighteenth Annual Meeting of the American Laryngological Association, p. 207, *et seq.*