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THE WRONG OF
CRANIOTOMY UPON THE LIVING FETUS.

SIXTH ANNUAL ADDRESS OF THE PRESIDENT, DELIVERED BEFORE THE
WASHINGTON OBSTETRICAL AND GYNECOLOGICAL SOCIETY,
OCTOBER 19TH, 1888.

BY

SAMUEL C. BUSEY, M.D.,

Washington, D. C.

presented by the author,

[Reprinted from the AMERICAN JOURNAL OF OBSTETRICS AND DISEASES
OF WOMEN AND CHILDREN, Vol. XXII., January, 1889.]



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IN my first annual address, delivered before this society five years ago, I predicted that the discussion of the relative propriety of the operation of craniotomy upon the living fetus and the Cesarean section, then in progress, would result in a modification of the views held by a majority of obstetricians, and that the time would come when the Cesarean section and other conservative procedures, which offered the chance of saving two lives, would supplant the killing of the fetus that the chances of the mother's recovery might be improved. I did not then anticipate the rapid progress of the revolution which I felt assured had begun, nor that, at this early date, science would have so nearly accomplished that result. After five years' submission, without remonstrance, to adverse criticism, you will pardon me if I give expression to the pleasure it gives me to recur to this subject, not, as then, a postulant, canvassing the issue of justifiability, but now as a predicant, asserting the wrong of craniotomy upon the living fetus. This proposition advances a step beyond the inquiry discussed in my first address, and involves the question of moral responsibility as well as the issue of scientific investigation and result. It may be that my views are extreme, but if advances in the science and practice of obstetrics are limited to the domain of long established usage and generally accepted principles, progress must cease. If the early followers of McDowell had laid aside the

scalpel at the bidding of their assailants, abdominal surgery would not now be crowned with the brilliant success of the great ovariologists, whose achievements are known in every land where medical and surgical science is cultivated. Nay, more, if they had been discouraged by the unfavorable results in the beginning, ovariotomy would long since have been consigned to the catalogue of unjustifiable operations, and the unnecessary sacrifice of woman's life would have continued as a memorial of the inadequacy of scientific medicine.

To state the issue plainly, the averment must be made that no conscientious physician would deliberately and wilfully kill a fetus if he believed that the act was a violation of the commandment, "Thou shalt not kill." It has been well said by Barnes,¹ the highest authority on operative obstetrics, and the ablest and most conservative defender of craniotomy, "It is not simply a question for medicine to decide. Religion and the civil law claim a voice—a preponderating voice. In the whole range of the practice of medicine, there arises no situation of equal responsibility, of equal solemnity." Maintaining² the affirmative of the proposition that the profession can and must escape from such a solemn responsibility, I hold that we must strike directly at the root of the evil, which declares that "it is the mother's right to save her life, even at the sacrifice of her child;" and abolish a plan of treatment which the experience of past ages has handed down to us, and vindicated by the assertion of the right to take one life rather than leave two to die. We must, in the interest of a broader humanity and a far wider field of usefulness, accept the progress of science, and offer chances to two lives rather than take the one which cannot assure the safety of the other. In the remote past, when obstetric operations were, at best, performed with rude appliances and in a bungling and unscientific manner, by operators lacking in knowledge and experience, such interpretation of the moral law must have been cherished as a blessing to humanity, but "under the new regime the interest of the living child" will constitute a more important factor,"

¹ British Medical Journal, October 2d, 1886, p. 624.

² The improved operation has given results in Germany so satisfactory that possibly the day is at hand when craniotomy upon the living fetus will be very rarely performed, if done at all. Parvin, Med. News, Vol. lii., p. 652.

³ Prof. Müller, Trans. Ninth Internat. Congress, Vol. ii., p. 304.

and the public will demand the highest skill attainable in obstetrics. Directly opposed to such progress is the assertion of right to take life at will, supported by the equally untenable assertions of easy accomplishment¹ and small mortality of mothers. With the issue thus made up, I proceed.

The right or wrong of craniotomy upon the living fetus forces itself into the foreground of this discussion because this unsettled issue is the obstacle thwarting the advance in the methods of conservation of human life. Until the unjustifiability of the alleged right to kill a fetus at will to enhance the chances of life to the mother is fully demonstrated, and the wrong of it laid bare in the fulness of its enormity, the law of justification will be invoked to cover the plea of expediency.

I will not characterize craniotomy upon the living fetus as a crime in the ordinary acceptation of the word, that is, a deliberate, wilful, and malicious malefaction. Nor would I invoke the enactment of penal laws upon the subject.² Nor do I assume censorship of professional conscience. Neither do I maintain that one who may differ with me is necessarily wrong. I concede to every qualified obstetrician the right of private judgment, and recognize the moral responsibility of every one for his own acts. Nevertheless, I would seek to cultivate and disseminate a higher and broader conception of moral duty than that which reposes in conscientious security upon the assumed right to kill an unborn child "in the interest of the life of another, responsible for its existence," when

¹ "To reduce the bulk of the child, or to extract its mutilated remains through a pelvis of two and one-half or less conjugate, is an operation of extreme difficulty, one occupying a very considerable period of time and needing for its successful accomplishment, as far as the mother is concerned, a very great experience, and an amount of manual dexterity hardly to be acquired outside of a large city; while, on the other hand, the Cesarean section is an easy operation, capable of successful performance by any surgeon of ordinary skill." Kinkead, *British Med. Journ.*, October 2d, 1886, p. 626. "The argument, that such operations as that of Porro would fall largely, of necessity, into the hands of men inexperienced in abdominal surgery, was not of much value; for exactly the same thing was true of bad cases of craniotomy, and he felt certain, of the two classes, under similar circumstances, the resulting advantages would be largely on the side of amputation of the uterus." Tait, *British Med. Journ.*, October 2d, 1886, p. 627.

² "I would welcome the enactment of laws against this practice in all civilized countries." Wathen, *Trans. Ninth International Med. Congress*, vol. ii., p. 372.

there is sufficient evidence to justify other procedures "equally in the interest of both mother and child."¹

Whilst I forbear to characterize the sacrificial operation as a crime, I will antagonize the charge of sentimentality so frequently and flippantly made against those who would offer chances to two lives rather than take the one which cannot assure the safety of the other, with the counter-charge that those who claim the right to take life as the mere choice of obstetric or surgical procedure assert a prerogative as arbitrary in its conception as it is cruel in its execution. An operation which, in a spirit of evasive defence, has been admitted by its advocates and defenders to be abominable, repulsive, horrible, detestable, and execrable, must partake more of the nature of a sacrilege than a sacrifice; and that sentimentality which, by its abolition, would relieve obstetric science from the necessity of such dreadful admissions, needs no other defence than the courage to assert itself.

The killing of the unborn fetus must be intentional and deliberate, and executed intelligently, or otherwise it is manifestly a crime. In the present state of medical and obstetrical science, ignorance, haste, convenience, and want of preparation cannot be offered as pleas in abatement of the wrong. Incompetency to do that which others can do, cannot justify a feticide. Intentional and deliberate killing must find its justification in some law, either civil, scientific, or moral. Self-preservation is the first law of nature. But neither the civil nor the moral law will accept the arbitrament of any one man's judgment on so momentous a question. Criminal law assumes to ascertain and measure the degree of guilt by defined methods of judicial procedure. Established usage may constitute an adequate plea in justification or abatement of many wrongs committed in the ordinary concerns of human life, but it offers no escape from

¹ Mr. Tait feels certain that the "decision of the profession will be before long, to give up the performance of those operations destructive to the child in favor of an operation which saves it, and subjects the mother to little more risk." *British Med. Jour.*, October 2d, 1886, p. 624.

The operation of amputation of the pregnant uterus, I venture to predict, will revolutionize the obstetric art, and in two years we shall hear no more of craniotomy or eviscerations, for this new method will save more lives than these proceedings do, and it is far easier of performance. It is the easiest operation in abdominal surgery, and every country practitioner ought to be able and always prepared to do it. *Lawson Tait, Med. Record*, Nov. 10th, 1888, p. 557.

the responsibilities of criminal acts, even though it may mitigate the punishment of penal offences. Custom and usage may excuse, and civil and criminal law may acquit the accused, but neither of these avenues affords escape from the moral responsibility of intentional and deliberate killing.

I do not introduce the references to the civil and criminal law to degrade the alleged wrong of craniotomy upon the living fetus to the level of an ignominious offence, but to exclude the argument of justification based upon the absence of common law or statutory prohibition, and to re-assert the principle of moral responsibility above and beyond any legislative definition.

It is established by the consensus of professional opinion that the operation has been frequently performed in cases where delivery could have been safely accomplished by the forceps, turning, or even by the unaided powers of nature. A dogma that accepts and justifies a procedure conducive to results so repulsive to Christian civilization and humanity, and so obstructive to the progress of science, should seek defence upon a higher plane of professional duty than the mere assertion, without proof, of the right to take the life of one innocent human being to increase the chances of the recovery of another.

The wrong of craniotomy on the living fetus is a more complex offence than a wrong act inflicted upon one's self. If the moral dereliction could be limited to the responsibility of the operator, it might be submitted to the arbitrament of his own conscience; but this greater offence is committed against the purest type of an innocent and defenceless human being—an unborn child which has reached that stage of its development which fits it for an independent life—at the will and on the judgment of one whose office and duty it is to preserve that life.

Conception is the product of cohabitation. With cohabitation and insemination, the function and office of the male in the production of a new being terminates. Not so, however, with the female. The laws of procreation entail upon the woman the obligations and responsibilities of maternity, which are equally as high in the scale of natural attributes, and more imperative in all the requirements for their complete fulfilment. It must then follow that the child is entitled to life, even at in-

creased risk to' the mother. The doctrine of responsibility of the operator for his own act cannot condone the composite offence. He may but play the part of accomplice in the final act of the drama of wrong, but the bloody hand may be none the less guilty, for complicity and connivance are, at least, accessory wrongs. Women in travail are not infrequently terrorized at the mere suggestion of the necessity of manual or instrumental interference, but accept with alacrity any alternative which promises to terminate their agony. It quite as often happens that the grief of a disappointed and blighted maternity can only be solaced by the coming of another. If the improved Cesarean section is not necessarily fatal to either mother or child, and offers fair promise of life to both, and craniotomy falls far short of such a promise, while it loads the mother's heart with sorrow and taints her life with guilt, surely the accomplice of such a deed of evil cannot ransom the wrong with the dogma of absolution by virtue of his doctorate in medicine.

The mother's love of offspring is the most acute and intense passion of human life and animal instinct. No obstetrician need be reminded of the anxious inquiries concerning the safety of her child so often made during the agony of her travail, her joy at the first cry of independent life, her devotion to the infant at the breast, and her willing sacrifice of strength, health, comfort and pleasure during the after-life of the fruit of her womb. Are such qualities mere exhibitions of emotion induced by the current, passing, and evanescent events of her life, or are they attributes of that divinity of soul that makes her the helpmeet of man and the emblem of all that is pure and good in life? The attributes of maternity find their beginning in the innate qualities of human life; manifest their obvious presence in the amusements, pleasures, and pastimes of infancy and childhood; grow with pubertic development; intensify with adolescence; and attain fruition with the birth and care of a living child. From its beginning to the end of intellectual life, maternity is a ceaseless passion, enshrined in truth, virtue, sincerity, forgiveness and self-abnegation, and hallowed "in devotion of the heart in all its depth and grandeur." The sublimity of such natural endowments carries with it the force and conviction of condemnation of wilful assent to and complicity in the destruction of a fetus at maturity, and asserts the prerogative of a child

¹ Thomas.

to live at increased risk to the mother. It cannot be that the complex processes of conception and utero-gestation, the organization, construction, and equipment of a new being for an independent life, and the agony and danger of parturition mean nothing more than the right of life by consent of mother and the will of the accoucheur.

There can be no higher obligation of professional duty than the promotion of the welfare and the saving of the lives of those committed to the care and judgment of a Christian physician. This duty cannot be wholly discharged short of the conscientious and intelligent application of such resources of art and science as may be known to promise the best result. When two beings are in equal danger, the killing of one not necessary to and not assuring the safety of the one responsible for the existence of the other and the danger of both, cannot fill the measure of such duty, when a less violent procedure offers a reasonable prospect of saving both lives. In rebuttal, the logic of fallacy alleges that the killing of the first child may preserve a life which may so multiply that the aggregate saving of infant and maternal life will surpass anything that is likely to be obtained by the Cesarean section. This sophism takes no account of the uncertainties of events, encounters the danger to both mother and child of premature labor induced at varying periods of fetal viability, and suppresses the rule of successive breeding and killing at the pleasure of the woman and the will of the operator. It wholly ignores the fact that the Cesarean section may, with slightly less percentage of chance to the mother, save both lives, and restore to the woman incapacitated by pelvic deformity the privilege and power to give birth to an indefinite number of children,¹ and that Porro's modification may save both lives and prevent subsequent pregnancies. But such illogical reasoning finds its complete refutation in the absence of any clinical data upon which their allegation could be based, and the numerous instances in which women have preferred Cesarean section rather than permit a repetition of craniotomy. There is no case known to me, where a woman upon whom the section has been successfully performed, has refused to submit to its repetition in a subsequent pregnancy.

The sentence of condemnation has long since been pronounced

¹See the collection of cases of multiple Cesarean section by Lungren, *AMER. JOUR. OBST.*, Vol. xiv., p. 78.

against criminal abortion. No one of you would produce an abortion to conceal an illegitimate pregnancy, nor for any reason, except such as would, in your conscientious judgment, make the death of the mother and, consequently, of the fetus, otherwise inevitable. Neither would you induce premature labor at any stage of fetal viability, except to save the mother, and to offer a reasonable—in many cases an increased—chance of life to the child. The death of a pregnant woman necessarily causes the death of an undelivered child. According to the latest review of the subject¹ maternal mortality is 8.2 per cent, two tenths less than that of craniotomy.² Whilst the maternal mortality is but a fraction in favor of induced premature labor, the saving of life in the aggregate has so magnified the importance and advantages of the procedure that it has become an accepted and established alternative of craniotomy, especially applicable in conditions of pelvic contractions in which the craniotomists insist the latter is the elective operation. The mortality of weak and immature children is very large, but the invention and application of the incubator of Tarnier has reduced it to 36.6 per cent. So that the ratio of lives saved is as 155.2 in 200 to 91.6 in 200 by craniotomy. It is then evident that the induction of premature labor has acquired priority in the chronological order of alternative procedures because of the aggregate saving of life; and its universal acceptance gives emphatic expression to the supreme and dominating passion of maternity, and to the widespread abhorrence for the dogma and practice of craniotomists. From this there is no escape, for there is no one capable of conscientious reflection who would offer the condonement of two-tenths of one per cent less of maternal mortality in favor of induced premature labor for the deliberate killing of one hundred unborn children. But fairness even to such a reprehensible practice demands the statement that the artificial provocation of labor at a selected time is only applicable to such cases in “which previous clinical knowledge, confirmed by exploration made before and during early gestation, has demonstrated the incapacity of the woman to bear a living child at term.” Nevertheless, the obligation to possess such knowledge at the earliest practicable period of pregnancy is not less im-

¹ Wyder, *Ann. de Gyn. et d'Obst.*, Jan., 1888. Quoted from *New York Med. Jour.*, Vol. xlvii., p. 641.

² *Ibid.*

perative than it is to conduct her safely through the perils of her travail.

"The brutal epoch of craniotomy" has certainly passed. "The legitimate aspiration and tendency of science (Barnes)¹ is to eliminate craniotomy on the living and viable child, from obstetric practice;" and it may be that the realization of the dream of Tyler Smith² will be the crowning achievement of the surgery of the nineteenth century.

Craniotomy is the oldest capital and most deadly obstetric operation. It was devised in the infancy of the art, to rescue women from the difficulties then regarded as otherwise insuperable. The history of obstetric progress since that remote period points with significance to the fact that every great discovery (Tyler Smith) in this branch of medicine is in direct "opposition to it, and has invariably tended to diminish the frequency of its performance where the child was living." Even the Cesarean and Sigaultean sections, which in the beginning were but a little less fatal to the mother than perforation is to the child, were attempted to escape the "massacre of the innocents." Then followed in chronological order the discovery of turning, the forceps, and the induction of premature labor; and, subsequently, the application of oxytocics and auscultation to obstetrics; the discovery of the physiology and mechanism of labor; numerous minor improvements; anæsthesia, antiseptis, laparo-elytrotomy by Thomas, axis traction forceps, Porro's operation, and, finally, the improved Cesarean section by Saenger. As century after century has slowly rolled into the oblivion of the past, so has the opprobrium of obstetrics receded before the gradual evolution of mere handcraft into a science which has saved empires of lives; which now commands the admiration of the civilized world, and daily receives the blessings of millions of women. The present has surpassed any previous century in scientific discovery and advancement. In no department of science has this advance been more marked than in medicine; in no branch of medicine more than in obstetrics, and in none of the subdivisions of obstetrics more than in the saving of maternal and infantile life. Nevertheless, this barbarous relic of a pre-anatomic period, with its annual sacrifice of six thousand eight hundred and eighty lives in this coun-

¹ Barnes, Brit. Med. Jour., Oct. 2d, 1866, p. 623.

² Obst. Trans., London, Vol. i., p. 21.

try alone' remains a blot on the marvellous progress of the nineteenth century, and a reproach to our profession so progressive in all other directions. The frequency of the operation is so dependent upon variability of judgment that this estimate may be more or less, according to the number, will, and judgment of the operators—the sentence and its execution being alike asserted prerogatives. Collins performed the operation once in 141 cases of labor; Clark once in 248; and Ramsbotham once in 805; whereas Siebold only performed it once in 2,095; Baudelocque only once in 2,898 cases, and More Madden, in a long and large experience in hospital and private practice, has never once recognized its necessity or countenanced its performance.² The extraordinary frequency of the operation in the practice of competent obstetricians is explicable only upon the theory of an automatic belief in its justifiability, which invokes the more "sweeping doctrine of necessary blamelessness" for erroneous conclusions,³ or the favorite and broader doctrine of Ingersoll "the immunity of all error in belief from moral responsibility."

The discovery of McDowell encountered bitter prejudice and reproach, based upon the alleged unjustifiable sacrifice of the lives of women who were afflicted with a disease otherwise incurable.⁴ It is true that some lives are shortened by a period varying from a day or a week to a year or two, but even in the beginning such mortality was less than fifty per cent, and since 1809 ovariectomy has rescued from protracted suffering and premature death fully 75 per cent of the cases, and has added thousands of years to the lives of women. In each of such cases but one life was at stake. The Cesarean section, or some of its modifications, is performed in the interest of two lives, upon women who cannot give birth to their offspring *per vias naturales*. The opposition in this case is not less clamorous and unreasonable than in the other, notwithstanding the first fifty Saenger operations in Europe saved 80 per cent of mothers and

¹ This result is obtained by a calculation made upon the basis of sixty millions of people, with a ratio of thirty-six births (U. S. Census, 1880) to every one thousand of population, and the proportion of one craniotomy (Tyler Smith) in every three hundred and forty labors, the maternal mortality after craniotomy being 8.4 per cent.

² British Med. Jour., Oct. 2d, 1887, p. 627.

³ Gladstone.

⁴ It is probable that occasional instances of cure resulted from the haphazard methods which have been long since abandoned.

96 per cent of children, or 88 per cent of all the lives imperiled, while the best possible result in craniotomy—never, however, attained—would give but 50 per cent. This contrast exhibits the complex and contradictory methods which good and competent men, who have become set in their views, will employ to thwart and obstruct the advance of science. In the former instance, it was the possible shortening of the life of a woman fatally sick that aroused the fierce vituperation and denunciation; now it is the saving of 96 per cent of children at a slightly increased risk to the life of the mothers that fires the heart of the philanthropist who claims the natural right to destroy one half of the lives that the chances of saving the lives of the other half may be improved. The iron-clad conscience which sought to drive the early followers of McDowell into ignominious retirement lives only in the history of its futile efforts to obstruct progress, and ovariectomy has risen to the dignity of universal acceptance. The conscience which is today seeking to condone the wrong of craniotomy with the good that evil may bring, will read a like history in the near future when the world will know the possibilities of science, and the child will be saved without enhancing the danger of the mother. As Tait¹ has accomplished the brilliant success of one hundred and thirty-nine consecutive ovariectomies without a death, we need not hesitate to give full credit to his opinion that one hundred Porro operations should not yield more than five per cent maternal mortality.²

To meet the charge of casuistry, the logic of words must be re-inforced by the demonstration of facts. It is admitted that alternative procedures give better results to the mother, with high probability of saving the child, than craniotomy when:

1. The conjugate diameter of the pelvis is two and one-half inches or less.
2. When the shortest diameter measures three and one-fourth inches.
3. In all cases of pelvic contraction when the opportunity of inducing premature labor has not gone by.

¹ British Med. Jour., May 15th, 1886, p. 921.

² "If I had one hundred Porro's operations to do, before craniotomy or any other turbulent proceedings upon the child had been attempted, I would not have a mortality of more than four or five per cent." British Med. Jour., Oct. 2d, 1886, p. 624.

4. In cases of cancerous degeneration of the lower uterine segment and vagina.

5. In cases of immovable tumors, rupture of the uterus, convulsions, hemorrhage, and atresia of the cervix or vagina.

6. In cases where the pelvic cavity is obstructed by the presence of fibroid or other tumors.

7. In other emergencies than deformity, as in obstructed labor from ovarian tumors.

These limitations are based upon the following facts:

1. That craniotomy cannot in any case assure the life of the mother.

2. That it is necessarily fatal in every case to the child.

3. That in many cases one operation demands repetition on the same woman.

4. The maternal mortality varies from 7.1 to 12.5 per cent.¹

5. The Cesarean section and other alternatives of craniotomy are not necessarily fatal to either mother or child.²

To set forth more completely the question of limitation and inapplicability, I quote from Barnes' summary of conclusions the following four propositions.³ (*Italics mine.*)

1. "In the most extreme degree of pelvic distortion, when delivery *per vias naturales* can only be effected with doubtful success to the mother, Porro's operation is the legitimate alternative of craniotomy, *it being understood that the opportunity of inducing abortion has gone by.*"

2. "In less advanced degrees of pelvic contraction, but still

¹ Mundé says that, when performed by experts under the most favorable conditions, it should not exceed 7.1 per cent. *Annual of Universal Med. Sci.*, Vol. i., p. 218.

Merkel (*Arch. f. Gynäk.*, Vol. xxi., p. 437) reports from the Leipsic Clinic 100 cases with 8 per cent mortality.

Thorn (*Arch. f. Gynäk.*, Vol. xxiv., p. 437) reports 80 cases from the Halle Clinic with 12.5 per cent.

Wyder (*Ann. de Gyn. et d'Obst.*, Jan., 1888) fixes it at 8.4 per cent.

Of the 180 cases of Merkel and Thorn, 88 had previously given birth to living children.

² Cesarean section always held out promise when performed under favorable circumstances. Lusk, *Brit. Med. Jour.*, Oct. 2d, 1886, p. 626.

"For the Cesarean section, two very powerful arguments may be advanced: 1. That the child is not sacrificed, and that it has a reasonable prospect of being saved. 2. That the mother has a reasonable prospect of being saved." Barnes, *Brit. Med. Jour.*, Oct. 2d, 1886, p. 624.

³ *British Med. Jour.*, Oct. 2d, 1886, p. 635. The other conclusions have been embodied in the preceding statement of limitation and facts.

incompatible with the delivery of a living child *per vias naturales*, the opportunity of inducing abortion having gone by, but in which craniotomy would effect delivery with strong presumption of safety to the mother, the Cesarean section may be a proper alternative for craniotomy. This is the most debatable point."

3. "In the minor degrees of contraction, say from three inches to three and a half and three-quarter inches, the opportunity of inducing labor having gone by, the greater safety to the mother obtained by craniotomy, and the prospect of living children in future pregnancies by inducing labor, makes craniotomy the proper course to pursue."

4. "When obstruction is due to hydrocephalus or dropsy in the child, embryotomy or tapping is indicated."

The first of these propositions does not raise an issue with regard to pregnancies at full term. Tapping offers the best chance to such a life as that described in the last. The second is declared to be the most debatable, and might be left where its author puts it. For if the issue of safety to the mother by either of the operations is thus submitted to doubt, the ninety-six chances of saving the life of the child is sufficient to justify and determine the election of Cesarean section, which gives "strong presumption of safety to the mother." The third bases the decisive choice of craniotomy upon the hypothesis, before referred to, of possible "living children in future pregnancies by inducing labor." This proposition was formulated when Porro's operation was considered in contrast with craniotomy, and loses whatever force it may have then had in the fact that the improved Cesarean section had yielded a percentage of living children one and a half times greater than that of induced premature labor, and, besides, offers a higher percentage of "prospect of living children in future pregnancies" than induced labor. Dr. Barnes concedes the choice of induced premature labor to craniotomy, when the child is living and viable. This concession is based upon the prospect of saving children that would necessarily be sacrificed by craniotomy. It logically follows, therefore, that when it can be shown, as it has been, that the improved section saves more children and offers better prospects in subsequent pregnancies than induced labor does, the reason for the only one of the three propositions which advocates the election of craniotomy disappears, and with it all

justification based upon that reason. It is thus clearly shown that Barnes' admissions, in view of the more recent advances in obstetrical surgery, absolutely obliterate the field of its application, as defined by him.

The first proposition qualifies the choice of Porro's operation in cases of "most extreme degree of pelvic distortion," and the second qualifies the debatable issue of election between section and perforation, in cases of "less advanced degrees of pelvic contraction," with the significant words, "the opportunity of inducing abortion having gone by." By inducing abortion he means the arbitrary termination of the pregnancy before the period of fetal viability. So that practically the all-absorbing question of deliberate destruction of fetal life recurs with all its forbidden intent, and this in the face of the fact that craniotomy in the first class of cases (first proposition) is more destructive of maternal life than section was even before the discovery of Porro, or still more, the favorable improved method of Saenger. The acceptance and practice of the alternative of induced abortion would constitute a barrier to progress, and relegate obstetric surgery to the epoch which its author has characterized as brutal.

To bring the issue more closely to a final result, I invite your attention to the analyses and comparative results¹ of Cesarean section, induced premature labor, version, and perforation in cases of contracted pelvis, performed in the Dresden Clinic, during four years ending in December, 1887.

Total maternal mortality from

Induced Premature Labor..	2.2	Perforation.....	2.8
Version and Extraction...	4.8	Cesarean Section.....	8.6

Mortality from Sepsis:

Induced Premature Labor..	2.2	Perforation.....	0.0
Version and Extraction....	0.0	Cesarean Section	4.3

Percentage of children discharged living :

Induced Premature Labor..	66.6	Perforation.....	100.0
Version and Extraction....	59.0	Cesarean Section.....	87.0

Or to state the result in aggregate as follows :

Percentage of children discharged living and mothers saved :

¹ Review of contributions of Korn, Löhman, and Präger. Edited by Leopold. AMER. JOUR. OBST., Vol. xxi., p. 671.

Induced Premature Labor,	Children 66.6; Mothers 97.8
Version and extraction,	Children 59.0; Mothers 95.2
Perforation,	Children 00.0; Mothers 97.2
Cesarean Section,	Children 87.0; Mothers 91.4

Or stating the aggregate saving of life by each operation, two hundred lives being involved in every one hundred cases:

Induced Premature Labor, 164	Perforation.....	97.2
Version and Extraction, 154.2	Cesarean Section.....	178.4

The foregoing figures present the alternatives of Cesarean section in their most favorable aspect. The ratio of maternal mortality in craniotomy is 2.8 per cent, and yet nearly twice as many lives are saved by section. Nor should we overlook the facts that one-half of the maternal mortality of Cesarean section was due to causes beyond the control of the operation, and that in every case a living child was delivered.

These statistics show that craniotomy saved 5.6 per cent more mothers than section, but the latter operation offsets this small increased loss of mothers by giving us all the children living at delivery, and eighty-seven per cent of them alive at the time of discharge from the clinic. The issue then resolves itself into the simple question of the actual or relative value between the lives of five or six women and eighty-seven children. If we base our conclusion upon the universally accepted apothegm that "that only is right which produces the greatest good to the greatest number," the conclusion is self-evident—the eighty-seven must be saved—and this conclusion is reinforced by the fact that the five or six lives lost are those of women who cannot give birth to a living child *per vias naturales*. If there is any obligation¹ of duty or maxim of the moral law which demands the sacrifice of eighty-seven lives to improve the prospects of saving five or six women in labor, the time had surely come for its abrogation. But the argument *ad hominem* replies with the specific citation of the daughter or wife of some high official, conspicuous in social life, possessing marked beauty and intelligence, with ample wealth which she devotes to charity and benevolence, and holding in her

¹ "How long must we be forced by lay opinion to destroy the lesser for the benefit of the greater life, when it can be conclusively shown that the Cesarean section, resorted to in time, may with almost absolute certainty result in the saving of two lives?" AMER. JOUR. OBST., Vol. xxi., p. 672.

physique and constitution the highest probability of a long and useful life, and demands to know if the life of such a woman should be submitted to the 5.6 per cent chances of death, with the eighty-seven per cent chances of life to her child, rather than to the 2.8 per cent chances of death with deliberate killing of her child. The picture is pathetic and moving, but the answer is simple and plain. Both science and religion deal with exceptional cases as such. The broad principles of truth, humanity, progress, and development are not to be stayed or hindered by the special pleading of imaginary cases of isolated hardship, however much of pathos or tears they may suggest. All lives are of equal value in the eyes of the true scientist and the true Christian, and the divine art of healing can have no safer guide than this: That nothing can possibly justify the taking of a human life unless it be the absolute certainty that, by this means alone, another human life can be preserved—and this is the answer of both religion and science.

It is true that the ratio of mortality is less, but the uncertainty of life remains the same. Each woman operated upon by either method takes all the risks of the operation. Those dying after craniotomy might have been saved by section, and *vice versa*. The saving of the child is the only compensation for the uncertainty of life and possible error of elective procedure. The unflinching discharge of unavoidable duty is the only guide of conduct. The behests of a long accepted dogma should not thwart the progress of science which promises divorcement of the profession from lay opinion, which claims the destruction "of the lesser for the benefit of the greater life."

The right of an individual to select the alternative of certain death rather than submit to an operation which may shorten, but, more probably, will effect a cure and prolong life, is not absolute. In such case, but one, and that the life of the victim, is involved. Such right cannot, however, be conceded to a

¹ A later abstract (AMER. JOUR. OBST., Vol. xxi., p. 779) of a paper by Wyder (Archiv f. Gyn., Vol. xxxii., i.) states the maternal mortality of craniotomy and induced premature labor, at the Clinics of Berlin, Halle, and Leipzig as follows:

Berlin, 104 cases of perforation,	5.8 per cent.
Halle, 35 " " "	5.7 " "
Leipzig, 76 " " "	5.3 " "
Premature labor: 306 cases; mortality,	3.9 " "

woman in labor who is responsible for the existence of her child and the danger of both, since by it she imposes upon an innocent operator the act of killing, that her prospect of life may be slightly improved. The conviction of right in the first cannot carry with it the concession of right in the latter instance.

If a pregnant woman possesses the natural and inalienable right to terminate the life of her child at term, she cannot be denied the right to terminate it at any period of gestation, and criminal abortion would then become an accomplishment of the highest significance. The early destruction of embryonic life would be the simplest and surest escape from the perils of uterogestation and parturition; would effectually withdraw from further scientific pursuit the advances in obstetrics which seek the elimination of craniotomy; more certainly extinguish the instincts and attributes of maternity; nullify the laws of reproduction; and reduce woman to a level more degrading than any to which the most barbaric of primitive people consigned her.

The argument that craniotomy upon the living and viable fetus is the indirect killing of an unjust aggressor is a trivial sophism. The killing is the immediate, and even more direct object than the end sought to be accomplished, for that is necessarily attended with the chance of safety to the mother. It is a curious, but interesting historical fact that embryotomy found its beginning in the intuitive obstetric practice of primitive peoples¹ who believed that all difficulties were referable to the evil disposition of the child, and that "a child so perverse as to refuse absolutely to appear deserved death, as did the mother who carried such a child." Obstetrics has advanced from the epoch of intuitive practice, through the religious and pre-anatomic epochs, and the first three hundred and fifty years of the scientific period, and yet there are very many eminent obstetricians practically holding fast to the doctrine of merited death or justifiable killing of the fetus for a like cause and a like method, which the primitive peoples could justify only upon the theory of the evil disposition, perverseness, and unjust aggression of the unconscious and passive child. Nevertheless, the savage inhumanity of such a doctrine evinces a broader sense of justice than the craniotomists of to-day, in that it recognized the culpability of the mother to be equal with that of the child.

¹ Engelmann, "System of Obstetrics" by Hirst, vol. i., p. 25.

It will be charged, notwithstanding the equally favorable results of craniotomy, that the maternal mortality of the alternative procedures in the Dresden Clinic are less than the ratios of mortality of the operations in general. The utmost fairness, therefore, requires that comparative ratios shall be obtained from larger numbers, which will comprehend the experience of numerous operators. To this end the following analyses are made:

In a private letter, dated August 20th, 1888, Dr. R. P. Harris informs me that 131 improved Cesarean operations had "been performed in 11 countries by 73 operators, with a saving of 95 women and 118 children."

In 15 German cities, 32 men had had 65 cases and saved 56, a percentage of 86 $\frac{2}{3}$; only 9 deaths in all.

In 5 Austrian cities, 7 men operated 21 times, saving 15, or 71 $\frac{4}{7}$ per cent.

In 9 American cities, 16 men operated 20 times, with 9 saved, or 45 per cent. The first 5 were all fatal.

Russia saved 4 out of 6.	England saved 0 out of 2.
Holland saved 4 out of 4.	Denmark saved 1 out of 1.
France saved 2 out of 4.	71 saved out of first 100.
Italy saved 2 out of 4.	33 saved out of first 50.
	38 saved out of second 50.

Switzerland saved 1 out of 2.	34 men saved out of 45 cases, in
India saved 1 out of 2.	1887, 36 women, or 80%.

This aggregate in its most unfavorable aspect, with its 73 operators in 11 countries, and including the educational and experimental cases in this country, shows a saving of 72.52 per cent of women and 90.84 per cent of children. In other words, it shows a saving of 165.36 lives out of a possible 200, being 65.5 more lives saved than is possible by craniotomy, even admitting that it is absolutely free from danger to women. As yet no one has claimed that any group of 73 craniotomists has saved 100 per cent of the lives of the women operated upon, even though they sacrificed 100 per cent of the lives of children. Further comment is unnecessary.

Later statistics:—Caruso (*Archiv für Gynäkologie*, Band 33, Heft 2) has collected the cases of the modern Cesarean section up to October 1st, 1888, "comprising 135 cases; 6 successful cases, in addition, are known to Caruso, but the details necessary for publication were lacking.

"German operators have performed 74 of these operations;

Americans, 18 ; Austrians, 16 ; the results by Americans are inferior to those of the Germans and Austrians. The results are $74\frac{44}{100}$ per cent of recoveries among mothers in all cases, and $91\frac{73}{100}$ per cent recoveries among children ; in three cases in which the operation was done a second time, both mothers and children recovered. It may, therefore, be said that a mother has three chances out of four, and her child nine out of ten, for life with this operation.

“ A careful estimate of the results of craniotomy, under anti-septic precautions shows that $93\frac{4}{100}$ per cent of the mothers recover. Selecting similar cases on which section was performed, the percentage of recoveries in these cases was $89\frac{4}{100}$, and 100 per cent of children. Caruso concludes, therefore, that craniotomy on the living fetus is to be superseded by the conservative operation.”—*Amer. Jour. Med. Sci.*, Vol. XCVII., p. 99.

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