Reese (J. J.)

LIVE BIRTH

IN ITS

MEDICO-LEGAL RELATIONS

ANNUAL ADDRESS

DELIVERED BEFORE THE MEDICAL JURISPRUDENCE SOCIETY OF PHILADELPHIA JANUARY 1887

By JOHN J REESE M D

PROFESSOR OF MEDICAL JURISPRUDENCE AND TOXICOLOGY AT THE UNIVERSITY OF PENNSYLVANIA PRESIDENT OF THE MEDICAL JURISPRUDENCE SOCIETY OF PHILADELPHIA

PRINTED BY THE SOCIETY

1887

LIVE BIRTH IN ITS MEDICO-LEGAL RELATIONS

BY JOHN J REESE M D

The subject of Live Birth is one of considerable interest and importance to the physician; its medico-legal bearings invest it with no less interest to the practitioner of the law. My object, in this paper, is to present some of the practical aspects of the subject, and such as may elicit a profitable discussion.

First, what is the medico-legal meaning of the term *live birth?* In ordinary phraseology this term signifies the mere fact of an infant's being born into the world in a state or condition of *life*, as opposed to a state of *death*. It is said that the child is born alive, or dead, without any reference to the attending circumstances.

Not such, however, is the *legal* definition of live birth. The latter takes especial cognizance of these attending circumstances, narrowing down the definition to a very fine point. To constitute a live birth *legally*, the living child must have been *completely* extruded from the mother, every portion of the living infant must be born into the world, and separated from the maternal parts; although the umbilical cord need not to be severed. So that, if in the act of parturition (which perchance from some cause may be protracted), the child's head and shoulders, and even a part of the body, are born, if the remainder of the body should be retained within the maternal parts,—nay, if even a single limb is so retained,—even though the child should give unmistakable evidence of life by breathing, or by crying out,—still, if from some cause it were to die in the interval before the expulsion of the retained portion of the body, this would not constitute a live birth; that child would not, *legally*, have been "born alive," so exact and rigid is the dictum of the law. Understanding the legal, restricted sense of the term, we are prepared to apply the principle to certain cases, both of a civil and criminal character, such as frequently demand medico-legal interference.

First, in civil cases, in reference to the laws of inheritance, or heirship of property, and the presumption of survivorship. This is an interesting topic, and, at times, most difficult to adjust. It is well understood in law, that a child at birth may transmit an inheritance from its mother to another heir, provided it be "born alive" in the true legal sense. What, then, constitutes the *proof* of a live birth? I reply, anything that will show that the child was living at the time of its birth. You will observe that the question here does not regard the *uterine* age of the child; it may have reached the full, normal, uterine period of nine months, or it may have been prematurely born; that makes no difference in the eye of the law, provided only it was born *living*. Observe, again, that the question of the *viability* of the child, or its capacity to continue its living after its birth, does not at all enter into the account. It may be an immature fœtus, lacking many months of its full development in the maternal womb, yet if it be "born alive," and continues its existence but for a few moments, it possesses its legal rights and qualifications, just as truly as if it had been born at the full term, and in the complete endowment of strength and vigor.

Of course, breathing and crying, together with vigorous movements of the limbs, are to be regarded as the most satisfactory and conclusive evidences of a living birth. But the laws of different countries singularly vary in their requirements of the proofs of a live birth. Thus, in France, *respiration* is regarded as essential proof; in Scotland, *crying* is so considered; in Germany, *crying*, "attested by unimpeachable witnesses." In the United States and in England, the law is far less restricted on this point. In neither of these last-named countries is breathing or crying regarded as essential to establish a "live birth." And in this they are certainly in the right, judged by fair, physiological tests, since it is well understood that many children come into the world in what is technically termed a *still-born* condition, or a state of *apparent* death—neither breathing nor crying; but from which condition they are subsequently recovered by appropriate treatment, and continue afterward to live. Hence, I think, we must deem the laws of our own country and of England, on this topic, to be both wise and discriminating. These laws admit as good and sufficient proofs of a live birth, the pulsation of the child's heart, or of one of its arteries, or the spontaneous movement of one of its limbs, or of its lips, or tongue; and this evidence would

be strengthened by the pulsation of the umbilical cord, after the expulsion of the child.

According to Blackstone, "crying, indeed, is the strongest evidence, but it is not the *only* evidence." And Coke remarks: "If it be born alive it is sufficient, though it be not heard to cry, for, peradventure, it may be born dumb." The same legal authority describes "motion, stirring, and the like," as proofs of live birth.

With this clear and definite understanding of what is legally regarded in this country, and in England, as proofs of a live birth, we must admit that fœtuses have been born *alive* as early as four months of utero-gestation, and, of course, at all periods of a later date. Such a case is reported by Dr. Erbkam, of Berlin, where the fœtus was only six inches long and weighed but eight ounces. It survived half an hour; it moved its legs and arms, and turned its head from side to side; it opened its mouth. The distinguished physiologist Müller pronounced this fœtus to be not over four months old.

Dr. Barrows, of Hartford, reports another case, especially interesting from the fact that the exact period of conception could be fixed. Miscarriage took place in 144 days, or less than five calendar months. The ovum was expelled entire. Before rupture of the membranes, the movements of the child were vigorous. After the rupture, it cried out very distinctly; it afterward breathed with a gasp for 40 minutes. It repeatedly opened its mouth, and thrust out its tongue. It measured 10 inches long, and weighed 14 ounces.

This phase of the subject is, perhaps, presented in a still more striking aspect in the consideration of that form of the law of inheritance denominated "*tenancy by courtesy*." This phrase signifies, according to Blackstone, "a tenant by the courts of England," and is applied to the case where the husband of a woman who dies possessed of landed property not otherwise devised, acquires a life-interest in said property, *provided* a living child was born of the marriage during the wife's life. "In this case" (in the old law language), "he shall, on the death of his wife, hold the lands for his wife, as tenant by the courtesy of England." If there should be no issue born alive, the estate would revert to the woman's heirs-at-law. This old English law is still in force and operation in some of the States of this country; and cases not infrequently arise, both here and in England, where the whole question of the life-interest in a large estate by the surviving husband may turn upon the very nice and delicate point whether the infant, through whom alone he could inherit, was, or was not, *born alive*.

As an illustration, I will briefly cite a case in which I was personally concerned as a witness, which was tried in the State of Delaware some years ago, where this old English law of "tenancy by courtesy" is still in force: A gentleman of New Jersey had married a lady who possessed landed property in the State of Delaware. They afterward removed to New Jersey, where the wife died some years subsequently in giving birth to their only child; which also perished immediately after its birth. Two highly respected medical practitioners assisted at the lady's accouchement, which was a difficult and protracted one, and in which she died in convulsions. Both these gentlemen concurred in the opinion that the infant (which was at full term, and properly developed) was living at the time of its birth, although it neither cried nor visibly breathed. In accordance with this decision of the physicians (which I believe was not disputed at the time), the husband very naturally deemed himself entitled, under the laws of Delaware, to a life-interest in his deceased wife's property; and he so continued in possession for a number of years, at the expiration of which time, the wife's heirs-at-law sued out a writ of ejectment to dispossess him of the property, on the ground that his child had not really been born alive. The husband, accordingly, was put upon his defense; and I, among others, was called as a medico-legal expert witness for the defense. Here the whole question, as you observe, turned upon the *proofs of a live birth*. The case was tried at Dover, before a court and counsel composed of the most distinguished members of the Delaware bar. Fortunately, both of the physicians who assisted at the infant's birth, were present at the trial; they testified that the labor was protracted and difficult; that the woman had puerperal convulsions which caused her death; that the infant was at full term, and properly developed; that it was delivered by instruments; that it did not cry nor visibly breathe; but that it was not livid in the face; that its lips were of a rosy color; that its heart and temporal artery beat for some minutes after separation from the

mother; and, further, that the umbilical cord pulsated at the time of the expulsion of the child.

Now, under such circumstances, I could not hesitate in my belief that a new-born child, in whom the heart and one or more of the arteries pulsated for some minutes after delivery, could not be regarded as dead, and, consequently, must be considered as *living*. Moreover, the fact of the pulsation of the umbilical cord at the time of birth was a strong presumptive proof of life in the child, since this pulsation invariably ceases if the cord is attached to a *dead* child. I therefore gave my opinion, as an expert, and in accordance with numerous cases that had been decided both in this country and in England, that this child was *born alive*.

I was rigidly cross-examined by the prosecution, their main effort being to make it appear to the court and jury that the proofs of live birth alleged by the defense were not sufficient to establish it. They could not deny the sworn testimony of the medical witnesses as to the beating of the child's heart and artery, and the pulsation of the umbilical cord, but they attempted most ingeniously to get me to say that these movements were not necessarily evidences that the child was really alive at the time, but that they were nothing more than the mere *result* or *remnant* of its pre-existing uterine life, being much of the same nature as the *spent* or *inertia-motion* of some machine, or mechanical toy, after the stoppage of the steam engine, or other propelling force. I could not but smile at this adroit but specious reasoning of the distinguished counsel, but felt constrained to reply, that most undoubtedly these movements of the child's heart and arteries were, in a certain sense, the result or remnant of its pre-existing uterine life; *not*, however, through the force of inertia, but precisely in the same manner in which both his own and my own vital movements—such as the pulsation of our hearts and arteries—were "the result and remnant" of our respective pre-natal existence, or of the vitality derived from our mothers,—the *only* difference being that in the case of the infant these "remnants" of vitality did not *continue* to live, but nevertheless lasted sufficiently long to demonstrate their actual existence. I may add, in passing, that the writ of ejectment was *not* sustained, but that a subsequent settlement was agreed upon.

In order to sustain my position on this question, allow me briefly to cite a few well-known cases in English and American jurisprudence. The first is the oft-quoted case of *Fish* v. *Palmer*, which was tried in the Court of Exchequer in 1806. The wife of the plaintiff, Fish, was possessed of landed property. She died after giving birth to a child which, at the time, was supposed to have been born dead. In consequence of this assumed dead birth, the estate of the wife was claimed, and taken by the defendant, Palmer, her heir-at-law. Several years after, the husband was led to believe, from information derived from some women who were present at the delivery, that the child had *not* been born dead, and an action was accordingly brought by him to recover the estate; and it lay with the plaintiff to prove the allegation that his child had been born alive. The accoucheur who had attended the birth had died in the interim; but it was proved that he had declared the child to have been living an hour before it was born; that he had directed a warm bath to be prepared; and when the child was born, that he gave it to the nurse to place in the bath. The child neither cried, nor moaned, nor manifested any sign of active existence; but the two women who placed it in the bath swore that when it was immersed there appeared twice a *twitching* or tremulous motion of the lips. No further signs of life were manifested, even by blowing into its throat. The main question in the trial was, whether the tremulous motion of the lips was a sufficient proof of the child having been born alive.

The medical experts differed in their opinions upon this question: those for the plaintiff asserting that had the child been born *dead*, there could have been no muscular movement in any part of its body; but Dr. Denman, an eminent obstetrical authority, who was called for the defense, undertook to make a distinction between *uterine* and *extra-uterine* life, averring that the child (though he would not say it was absolutely dead) had not been born truly alive; and that the tremulous motion of the lips was due to the "remains" of uterine life,—very much the same idea as was broached by counsel in my own case in Delaware, just detailed. The jury, however, under the direction of the court, did not adopt Dr. Denman's view of the case, but pronounced that the child had been born living; and the plaintiff then recovered an estate, of

which he had for ten years been deprived. "We thus see," to quote the language of Prof. Taylor, "that the English law does not recognize any distinction between uterine and extra-uterine life. The question is simply life or death —living or dying."

In the case of *Brock* v. *Kelly*, which came before the Vice-Chancellor's Court in 1861, the decision rendered confirmed the above view, although based upon a somewhat different kind of evidence, namely, the pulsation of the umbilical cord. Dr. Freeman, the attending physician in this case, had noticed at the time of the child's birth, and after separation from the mother, that there was a slight pulsation in the cord, showing a feeble but independent circulation. He had expressed the opinion that the child was living, and had directed it to be put into warm water to sustain its vitality. This was further confirmed by the nurse, who had been heard to say that the child was born *alive*, but had died the same day. Dr. Tyler Smith, an eminent authority, supported the opinion of Dr. Freeman, considering that the pulsation of the umbilical cord—after delivery—was a physiological proof that the child in question was *not* born dead. The Vice-Chancellor decided that the proof of breathing was not necessary, but that there was sufficient legal evidence of *life after birth* in the pulsation of the cord observed by the accoucheur. As Dr. Taylor remarks of this case: "This decision is in accordance with law and common sense. Pulsations (in the cord) indicate an action of the infant's heart, as much as motion of the chest indicates an action of the intercostal muscles."

The third case that I shall mention belongs to this country. It is detailed in the July number of the *Am. Journ. Med. Sci.*, 1870. Dr. Seals had induced labor in a woman, by ergot, at about the seventh month of gestation. A large child was born after some difficulty, but it did not make the slightest effort to breathe. There was distinct pulsation of the umbilical cord. Now, was this child living or dead? As it had not breathed nor moved, according to some authorities it would be regarded as dead. The pulsations of the cord would have no significance with them. But that this child was really born *living* was proved by what followed. Flagellation, and alternate sprinkling of hot and cold water produced a violent spasmodic contraction of the diaphragm. This condition continued for five minutes after the birth of the child. The cord was now severed, and about half an ounce of blood was allowed to flow from the fœtal end. The tongue, which had fallen back, was drawn forward, when the child began to breathe very feebly, and so continued to breathe at intervals. The heart beat very feebly. The pupils were dilated and did not respond to a bright light. The child was, in fact, suffering from compression of the brain. This condition lasted for one hour, when it ceased to breathe.

The above cases, I think, sufficiently attest the wisdom and justice of the American and English laws in relation to the legal proofs of live birth—at least, in cases of a civil nature.

There are, however, certain conditions connected with this law of inheritance by "tenancy by courtesy" which demand a passing notice.

1. There must be satisfactory proofs of a live birth. These we have just discussed. 2. The child must be born while the mother is living; this was the old maxim of Lord Coke, 300 years ago. Hence, if a living child were extracted, by the Cæsarean section, from a dead mother, according to the strict interpretation of the law it could not transmit an inheritance; because as death dissolves the marriage contract, the *subsequent* birth of a child would not be in wedlock. But I very much doubt, if such an exceptional case should arise, whether the courts would not set aside the technical objection. 3. The child must be born *capable of inheriting*. Therefore a "monster" cannot inherit nor transmit property. But it is extremely difficult to give a legal definition of a monster. Lord Coke's definition is "a being that hath not the shape of mankind." Clearly, however, no mere external deformity or internal malformation should constitute such a disability. But I cannot, at present, enter upon the discussion of this very complex subject, though it is one of great interest; I would simply remark that it would be extremely difficult to apply this restriction to such abnormal cases as the Siamese Twins, or Crissie and Millie, and others of a similar nature, where two distinct beings are connected together by a congenital bond of union.

Let us now briefly consider the application of the principle to criminal cases, of which I design to notice only one, namely—Infanticide.

The crime of infanticide, or child-murder, in

modern times, and among so-called civilized peoples, is confined almost exclusively to the destruction of illegitimate children. Although not regarded by the law as a specific crime, but is tried by the usual laws of evidence in cases of murder, there is yet this important difference in the nature of the medical evidence required, namely, that it must prove satisfactorily that the child was *legally* born alive. In other words, the burden of proof that a *living* child was destroyed is thrown upon the prosecution.

And this is only right, and in accordance with strict justice. The law here humanely assumes that every child born into the world is dead, until the contrary is shown, because so many infants do thus actually come into the world, and many others die very soon after, from various causes, and in the latter, the signs of their having lived are often indistinct. Now, as a charge of infanticide can never be sustained unless there is a distinct proof that the child was *legally alive* at its birth, great difficulty is usually experienced in obtaining sufficient evidence to convict a woman accused of this crime. As a general rule, she has been delivered in secret, with no witnesses of its birth to testify to its having been alive or dead; and, moreover, the body of the child is frequently concealed, or destroyed.

You perceive at once the important difference between the nature of the proofs of a live birth obtainable in this case, and of that which we have been considering in *civil* cases. In the latter, as we have seen, the testimony of witnesses present at the birth is all-important; whereas in a case of infanticide, we have no witnesses who were present, but we are obliged to depend, in most instances, exclusively upon the evidence derived from the post-mortem examination of the body of the child.

And just here we are confronted with a curious and knotty position. As we have seen, a live birth legally implies the extrusion of the *entire* body of the child into the world; and, as infanticide implies the destruction of a child *legally* born alive, it follows, through a figment of the laws, that the destruction of an infant *only partially born*, even although positively living, cannot be regarded as child-murder. An eminent English authority, alluding to this fact, remarks that "the law which requires that a child should be entirely separate from the mother before being considered *born*, is a direct encouragement to child-murder; and he cites the case of *Rex* v. *Poulton* (Chitty, Med. Jurisprudence), where the medical evidence showed that the child had breathed; but, as the medical witnesses, very properly, would not swear that it was *wholly* born alive, the judge held their evidence to be insufficient to convict the prisoner. And in the case of *Rex* v. *Simpson*, tried at Winchester in 1835, Baron Gurney stopped the case as soon as the medical witness stated that the lungs might have been inflated *during the progress* of the birth.

I have stated that in judicial cases of infanticide, the proofs of a live birth are derived, almost exclusively, from a post-mortem examination of the child's body. If this is made within a day or two after delivery, and while the body is fresh, there are certain characteristic appearances about the head and face—such as the condition of the eyes and ears, the hair, etc., which, to the medical expert, would be very suggestive, but which need not be dwelt upon here. But, as a general rule, and practically, this examination is limited to the discovery of *evidences of respiration*. For, it is assumed that if it can be shown that the child had breathed, it must have been alive at the time of its birth. Whilst, therefore, respiration is not the *only* proof of life in a new-born child, and, as we have seen, is not required in civil cases, it is the only *available* proof in the case before us, but, nevertheless, with the proviso before mentioned.

Let us consider how the proofs of respiration are determined: first, by proper inspection of the *chest and lungs*. The chest of a child that has breathed is arched, and not flat, as in one born dead. The diaphragm, after respiration, is depressed to between the 6th and 7th ribs. Before respiration it rises to between the 4th and 5th ribs. The larynx, after respiration, is wider, and is not closed by the epiglottis. The lungs, before breathing, are placed far back in the thorax, so as almost to escape notice; after breathing, they completely fill the chest, and almost cover and conceal the heart and pericardium. Before respiration, they have a firm, compact feel, and are of a bluish-red color, resembling the solid spleen or liver in appearance. After full breathing, they are spongy and crepitant to the feel, and exhibit a peculiar marbled, bluish-pink appearance.

But it is especially the change in their *specific*

gravity that is the most marked feature in these organs, and the one most relied on for diagnostic value. Before respiration, the density of the lungs is such as to cause them immediately to sink when placed in water; but after they are filled with air by the process of breathing, or otherwise, they become lighter and buoyant, and float upon the surface of water. This latter test, which is technically denominated the "*hydrostatic test*," is the one generally relied on in order to prove a live birth in a case of infanticide. But, although a valuable test, it is not an *absolutely* certain test; and the medico-legal expert should understand its precise value, and know exactly what sort of evidence it affords in this regard. Strictly speaking, the floating of the lungs in water only indicates that they are filled, more or less, with air. Now, this air may have been introduced into the lungs in *three* different ways: (1) by natural respiration; (2) by artificial respiration, as by blowing into them through a tube; and (3) by the gases of decomposition. But, in a judicial case of infanticide, the idea of *artificial* respiration may be excluded, because this latter operation is only resorted to for the purpose of restoring an apparently dead-born child; whilst it would be the object of the perpetrator of the crime to make it appear that the child was born dead, and of course, therefore, would not resort to a measure that might indicate the contrary. As to the levity of the lungs caused by the gases of putrefaction, I would simply remark that this objection can only arise where the body of the infant shows unmistakable evidences of decomposition; and then there is no practical difficulty in ascertaining the true state of the case.

Granting, then, that the floating of the lungs on water may be accepted as good proof that the child had really breathed, and was consequently alive *at the time* of its birth, it does not, as you will observe, necessarily prove that it was *legally* "born alive," inasmuch as it might possibly have perished, either accidentally or by design, before the birth was *entirely* completed. So that all that we can really affirm upon the subject is, that while the hydrostatic test does not *absolutely* prove a live birth, in a case of infanticide it affords a very strong *presumptive* evidence of it.

Secondly, there are some other evidences of live birth derived from the *organs of circulation*, such as the closure of the *foramen ovale* in the heart, and of the *ductus arteriosus* and the *ductus venosus*, and also of the vessels of the cord. But as these changes are uncertain as regards their *periods*, and, therefore, unreliable, I will not speak any further about them.

Thirdly, the *organs of digestion* of the child sometimes furnish unequivocal proofs of its live birth, provided it has survived sufficiently long to take any food, such as *milk*, or *sugar*, or *arrow root*, etc. The discovery of any of these in the stomach or intestines would be positive evidence that it had not only been *born* alive, but that it had survived its birth for some little time. Of course, in such a case, the *lungs* would also afford incontestable proof of the life. As regards the discovery of blood or meconium in the stomach of the infant,—while this might indicate that the child might have been living during the progress of the birth, so as to have taken in these substances during the act of inspiration, it would not prove that it had actually been "born alive" in the legal sense.

This subject of the medico-legal relations of Live Birth might easily be extended further; but I think I have said enough to show that it possesses a real *practical* interest for the medico-legal student.