

Separate Existence in the Child.

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A CHILD is not born alive in law, and consequently cannot claim the rights of a subject of the King, until it has exhibited a separate and independent existence after complete extrusion from the body of its mother. This expulsion does not also imply the delivery of the paraphernalia of the fœtus, nor need these be disconnected, for the legal consummation of birth. *Postnatal separate and independent existence in law* has been variously defined. Lawyers have demanded proof of, at times, the mere physical separation of the body of the surviving child from the body of the mother; at times, the postnatal functional independence of the child's circulation; at times, the cessation of fœtal apnœa by the establishment of respiration after birth. These conflicting views may be explained by the crudity of much pristine forensic physiology, notably with reference to the relation between the maternal and fœtal blood systems. In 1688 Queen Mary d'Este is reported to have exclaimed, at the birth of her ill-starred prince: "O Lord! I don't hear the child cry! . . . Pray don't part the child!" The deposition continues: "Thinking it dangerous to herself" (State Trials). So late as 1705 James Drake, M.D., emphatically assured the Royal Society that the fœtal system was "a sort of *epicycle* to the main Circulation in the Mother." In 1901 Mr. Justice Wright was correctly reported as enunciating the modern test of legal separate existence: "Whether the child is carrying on its being without the help of the mother's circulation." It is doubtful if this view is generally adopted by the Bench.⁵

Mammalian independence, as an obstetric fact, can be considered as a specific physiological phenomenon, quite apart from the physical act of birth *per se*. To the lay mind, perhaps, it is not so obvious as in the case of the young of oviparous animals. A child's physiological independence occurs simultaneously with the termination of the local symbiotic association of the collateral maternal and fœtal, that is, uterine and placental, blood streams. Normally the cessation of the circulation beneath the placental site of the uterus is the efficient cause, this is speedily followed by *le besoin de respirer* on the part of the fœtus or child. The disjunction, occasionally precedent to or contemporaneous with the complete birth of the child, is subsequent to and consequent upon the detachment of the placental circulation from that in the uterine walls. Usually this detachment

is actual and physical, but it may be virtual and functional, as with a placenta adherent to the shrinking uterine site or as where there is a prolonged kinking or compression of the cord, a common example being the case where the cord is tightly wound round the foetal neck. The fact of obstetric separate existence is also of practical significance, for an accoucheur must realise that the unborn child may enjoy a distinct independence. The foetus must be born shortly after attaining this state, or, more correctly, it must be allowed to breathe, otherwise it will "expire." This fact emphasises the rules formulated for the conduct of a labour: (a) the duration of the second stage must not exceed its physiological limits; (b) early escape of the waters is undesirable; and (c) hopeful true Cæsarean extraction must be effected, if at all, not later than a quarter of an hour after the mother's sudden decease. Conversely, if a child breathes after birth, it is proof sufficient that the respective circulations cannot have been dissociated for any length of time, that is, that separate existence cannot have been established for more than a few minutes; otherwise the child would be *still-born* (literally: unable to cry)¹ or, indeed, the child would be dead-born, if there is complete foetal *asphyxia* (literally: pulselessness, that is, circulatory stagnation). Much technical ability has been directed toward the elucidation of the macroscopic and microscopic mechanism, whereby the uterus separates itself from the placenta. At what exact period the symbiosis normally ceases is uncertain; probably little information would be obtained by intra-venously injecting innocent particles (into parturient monkeys) during the second stage of labour, but until the mutual relations have ceased the administration of morphia should be cautious. An obvious corollary of the disruption is not always adequately enforced. Provided that neither of the local blood-streams has become previously stagnant, nor the respective vascular systems completely thrombosed, the foetus (or child) assumes independence of the mother as the placenta is being physically detached by and from the uterus. What, then, are the available symptoms and signs (apart from a tied cord or a placenta palpable in the vagina) which, by interpretation, may indicate that a foetus or child already separately exists? Two very patent cases may be summarily dismissed: (a) A permanently pulseless cord and a continuously dumb foetal heart indicate that both mutual and independent vital relations have ceased; (b) repeated attempts at festinant intra-maternal respiration, palpable, perhaps, *via* the applied instruments and exhibited either by movements of the lips and chest, or by *vagitus vaginalis*, may be assumed to evidence

the physiological isolation of a child hungering for air. Here Galen's practical test holds: *ut vivens omino spiret, et spirans omino vivat*. Other possible indications of independence may be considered in greater detail. It must be continually remembered that the decisive act of isolation may be either on the maternal or on the foetal side, and that recurrent temporary periods of separate existence may precede the permanent independence.

1. During labour pains, especially at the acme of the periodic clonicity, the applied ear discovers that the foetal heart-sounds diminish in frequency—a continuous and progressive diminution is of serious omen. “The form-restitution force” of the upper uterine segment (to which the placenta is normally attached), is most potently exerted by the circular fibres of the musculature of the womb. During labour, particularly after the exhibition of ergot, the copious blood supply carried in arteries running, in the main, parallel with these fibres, will be minimised. With each pain Hélie's “living ligatures” will compress the spiral arteries and the falciform veins coursing in the thickened wall beneath the placental site. Thus during these, possibly automatic, intermittent periods and prior to the anatomical detachment of the placenta, repeated brief intervals of separate existence will be forced upon the enwombed foetus. Temporary isolation of the foetal life may likewise result from a mechanical obstruction to the funicular blood-streams. It appears that the foetus accustoms itself better to the gradual and progressive than to the complete and sudden arrest of the symbiotic relations, and although the maternal uterine blood is never highly oxygenated, the numerous placental thromboses occurring in the later months of gravidity may also indicate a preparation for the child's independent existence.² The chronic uterine arterio-sclerosis (associated with lead poisoning, for example) in pregnant women, may explain the death of the foetus and consequent abortion recorded in such cases.

The legal status of an unborn living foetus within a mother met, at term, by sudden death, is undecided; the question might arise in a survivorship claim.

2. From Hippocrates onwards the appearance of blood *per vaginam*, in a gravid woman, was regarded as the visible sign of the commencing separation of the normal placenta. We know now that this sign is, of itself, at most a rough test of the exposure of the placental site during parturition. Sanious “shows,” and lacerations of the dilating cervix uteri, vagina, or perineum may also be thus

indicated. Further, abortion, in its wider sense, is not "inevitable," even where half the placenta has been separated and a consequent profuse *ante partum* hæmorrhage has resulted. Indeed, the escape of blood is of little value as the test of the establishment of a child's physiological independence. In practice, however, it may indicate, as in *placenta prævia*, that the delivery must be kept under careful observation, as well to prevent the child's asphyxia as on the mother's behalf. The placenta once separated, in whole or in part, is never subsequently replanted nor reattached. With a cord of average practical length and a normally seated placenta, a slight but continuous tricking of blood accompanies the separation and expulsion of the *deciduate* after-birth in the manner postulated by Matthews Duncan, though theoretically he claimed the process to be bloodless in all placental mammals. Should inevitable or artificial traction be exerted through the funis, or should the placenta be abnormally seated or adherent, the Schultze method of delivery may obtain, then the pent-up retroplacental blood will gush forth at the termination of the third stage of labour. The main flux of maternal blood is commonly just subsequent to the birth of the child. Classically the new-born child is *sanguinolentus, a matre rubens*.

3. The teleology of the "ball-valve action" of the fœtal head and the lower uterine segment, after the escape of the fore-waters, has been highly extolled. Many unhappy results may be safely predicted should this hydrostatic mechanism fail. One misfortune, little insisted upon, though by no means of obscure importance, is that the rapid untimely collapse of the amniotic hydrosphere, and the consequent immediate fall of the normal intra-uterine fluid-pressure (opposing the uterine tonicity), may lead to a premature retraction of the healthy uterus. The early shrinking of the placental site and the compression of the local uterine vessels will follow. The fœtus will be endowed with a precocious separate physiological being, even though the placenta should remain physically undetached in parts. It is this series of events, rather than the prolapse of and circulatory obstruction in the funis, which may render malpresentations with delayed delivery so dangerous to the vital chance of the fœtus. Here are included the descent of the funis, version with extraction, inevitable abortion and other cases where an early escape of the waters has occurred. Many of these children attempt intra-maternal respiration to sustain their untimely individuality; in exemplifying *vagitus vaginalis vel uterinus* they may choke their air-passages with inspired fluids. Unless a speedy delivery of the head is then effected and proper attention is paid to the respiratory tract, "still-birth," or,

indeed, dead-birth will result. Fluid in the trachea is always suggestive when found in a newly-born dead child.

4. Occasionally external inspection of the mother's hypogastrium, during the third stage, shows the transit of the placenta from the upper to the lower uterine segment.³ At the commencement of the third stage, just after the child's birth, an area near the placental edge presents in the cervix uteri or in the vagina—a palpable condition implying a previous separation of the placenta. Caillant asserted that the grating sound, heard supra-pubically at the end of the second stage, indicates the uterine act of placental detachment; Simpson, however, demonstrated that the probable cause of this phenomenon was the folding and compression of the placenta, preparatory to its ejection from the uterus.⁴ The rarity of notable *post partum* hæmorrhage indicates that (with a tonic uterus and a non-adherent placenta) the prolonged second stage, so common with primiparæ, where the foetal head reposes undelivered on the rigid perineum, proves that initiation of independence from the maternal circulatory economy may be long deferred, even where the child has partially quitted the uterus. The placenta has been found still attached, after Porro's operation; possibly functional abnormality is present in these cases.

It is conceivable in a multiple birth, that a child might be completely born alive and breathe, and yet not be physiologically independent of the mother, until either the funis of Esau is tied or the twin Jacob is delivered. In the latter case, indeed, true twins may enjoy a common circulation, *via* the placenta, and for a short time may resemble double monsters.

To sum up: a child's true separate existence commences with the isolation of its circulation. Normally this isolation appears to be effected by the establishment of respiration on the foetal side, or by the shrinking of the placental site on the maternal side. Each of these events may occur before the placenta is wholly physically detached. The child may attain complete independence before even partial birth. These considerations affirm the learned comments of many judges: how easy it is to terminate the physiological separate existence of an unborn human being, a potential man, without committing a technical homicide, or even without procuring, if the birth is not accelerated, an abortion; how difficult it is to prove that such a post-natal separate existence has obtained in such cases.⁵ It is homicide, in Germany, to kill a living foetus which is at all apparent at the vulva. With us, the foetus during a brief intra-maternal phase, may enjoy a real, because physiological, separate existence. It is, however,

unprotected, for it has not yet been born alive—it is not “a reasonable creature in being and under the King’s peace,” and therefore cannot be technically the subject of murder.⁶ “It stands between the dead and the living.”

REFERENCES.

- ¹ *Notes and Queries*, April 9, 1904. “Still-born Children.”
- ² EDEN. *Journ. Path. and Bacter.*, Jan., 1896, p. 466.
- ³ WHITRIDGE WILLIAMS. *Obstetrics*, p. 270.
- ⁴ *Obstetrical Works*, p. 151.
- ⁵ *Law Quarterly Review*, April, 1904. “Life, Birth and Live-birth.”
- ⁶ *St. Bartholomew’s Hospital Reports*. Vol. xxxviii., p. 131. “Forensic Physiology.”