Perinatal lessons from the past

Dr James Blundell (1790–1878) and neonatal resuscitation

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James Blundell, MD, was born in 1790. He graduated in Edinburgh in 1813 and from 1814 until 1836 he taught midwifery at Guy's Hospital where he became Professor of Obstetrics. Besides being the most distinguished British accoucheur of his day he was also a leading physiologist, making important contributions to the field of abdominal surgery, to the understanding of the origin of puerperal sepsis, and in the use of blood transfusion for postpartum haemorrhage. In 1838 he was made a Fellow of the Royal College of Physicians, a rare honour at that time for an obstetrician. His misfortune was that in many respects he was in advance of the technical possibilities of his day. However, having taken early retirement he lived to a grand old age and saw the introduction into medicine of many advances for which he had paved the way. Blundell's obstetric lectures were published in 1834.¹ This short extract on the endotracheal intubation and artificial respiration of severely asphyxiated infants may surprise those who believe that this technique was only introduced 20–30 years ago.

'You will sometimes find that children are still-born, as it is called, that is, although they are not dead, they do not cry, or manifest other indications of life . . . In performing artificial respiration on new-born children, I have frequently observed, that while the respiration was continued, the chord pulsated, ceasing to beat in a few seconds, when the operation was suspended, and this repeatedly. These facts admitted, there can, I presume, be no doubt, that when the foetus is still-born, the artificial respiration should be diligently tried . . . The only mode of performing this operation effectually is by means of a small instrument, the tracheal pipe, which I think every accoucheur should carry along with him to a labour. The tracheal pipe is a little tube of silver, designed to pass into the trachea, its end closed like a catheter, with a long, broad fissure on either side

Figure Dr James Blundell of Guy's Hospital, 1790–1878.

to give free vent to air and mucus. The closed extremity and lateral openings I prefer, as there is less risk of injuring the delicate membrane of the trachea, if a terminal aperture do not exist. In introducing this instrument there is some difficulty at first, if you do not manoeuvre rightly; yet every moment is of the greatest importance, for while you are blundering the child is dying. Now not to detain you needlessly, I may be allowed to observe, that

my own method of operating is the following:— I pass the fore-finger of my left hand down upon the root of the tongue and into the rima glottidis, and then using the tube with the right hand, I slide it along the surface of the finger, used as a director, till reaching the rima I insert the tube at the moment when the finger is with-drawn from it, afterwards feeling on the front of the neck whether the instrument is lying in the trachea or the oesophagus. This done, you may take the child into your hands, and from your own lungs you may inflate the lungs of the foetus, emptying them afterwards by means of double pressure of the hand, on the thorax I mean, and the abdomen, the latter pressure being necessary in order to urge upwards the diaphragm. Operating in this manner, you may execute the artificial respiration with the best success. Five-and-twenty, or thirty respirations there ought to be in a minute, the new-born child breathing faster than an adult. You may ask me, perhaps, whether it would not be better to use bellows? Make the experiment, and you will not repeat the question. When you have performed the artificial respiration for a few minutes, you make your observations on the child. Feel the chord, and you will sometimes have the satisfaction to find it pulsate. The best point for examination is at the very root of the funis, close to the abdomen. You sometimes feel the pulsation there; when at the distance of an inch from the abdomen it cannot be perceived, the arteries being so contracted that they do not admit the entrance of the blood. Examine the thorax, feel the heart, and you may sometimes, through the ribs, obscurely perceive its beating; observe the face, perhaps you

find the cheeks reddening—the countenance forming—the lips quivering. When these marks of returning life are observed, pause for a little, and frequently the child will be observed to make a spontaneous effort of respiration; a deep sigh is the first breath it draws; in twenty or thirty seconds it breathes again. Now if on suspending the artificial respiration the heart continue to beat—the chord to pulsate—and the respirations to increase in frequency—further aid from the tube will not be required; but should the pulsation cease in the chord, and the sighs be heard on longer, then your operations must be resumed; and thus repeatedly, as the case requires; at one time you try the natural powers of the child, at another you support the respiration by art . . . Never hastily despair of the means of resuscitation. Many a foetus is laid aside as dead which, by a diligent use of resuscitants, might have been saved. A woman, run over by a stage, was carried into St Thomas's Hospital, and died in a few minutes after admission. This woman was in the end of pregnancy. By my friend, Mr Green, I was requested to assist in the Caesarian operation. In thirteen minutes from the last respiration of the mother, the child was taken out. In fifteen minutes from the last respiration of the mother, I began the artificial respiration. During fifteen minutes longer I continued it, ultimately resuscitating the child completely, and had due care been taken it would probably have been living still.'

Reference

- ¹ Blundell J. *Principles and practice of obstetrics*. Edited by T Castle. London: E Cox, 1834:246–50.