PERINATAL LESSONS FROM THE PAST

Dr Robert Collins (1801–1868) and his Rotunda obstetric report

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Robert Collins was born in Dublin in 1801 and trained in Glasgow, obtaining the MD in 1822.¹ He had also studied midwifery under Samuel Bell Labatt at the Rotunda Hospital in Dublin and, on qualifying, was appointed Assistant to the new Master, John Pentland. He obtained a licence of the King and Queen's College of Physicians, Ireland, in 1824. In 1825 he married Barbara, daughter of ex-Master Joseph Clarke and they had one son. Collins' Assistantship ended in 1825 and he then went into practice in Merrion Square. However, a year later, on the death of Pentland, he succeeded to the Mastership of the Rotunda, a post he held until 1833. During his reign he kept careful records and statistics of the mothers delivered in the hospital and their babies and these he published in 1835 under the title *Practical Treatise on Midwifery containing the results of 16,654 births, occurring in the Dublin Lying-in Hospital during a period of seven years, commencing in November 1826*.² Collins' book, which was dedicated to the memory of his father-in-law who had died the previous year, is written in a simple straightforward style and provides a mine of information on obstetric practice at that time. It takes the form of a hospital clinical report. Indeed it began a tradition which continues today and was widely adopted by other maternity hospitals. In addition to the most interesting statistics in his book, Collins made important contributions to fetal auscultation and the prevention of puerperal sepsis. The extracts from his text that follow illustrate these three aspects of his work.

Dr Robert Collins, Master of the Rotunda Hospital, 1826–1833.

souffle in 1822, the stethoscope was at first little used in midwifery. Collins, aided by his Assistant, O'Brien Adams, was a pioneer in introducing fetal auscultation into obstetric practice.

Perinatal statistics

The following summarise some of the information provided (rates are given per 1000 deliveries):

Maternal mortality: 9.8, stillbirth rate: 67, neonatal mortality: 17 (13% due to neonatal tetanus); first pregnancies: 302, multiple pregnancy: 15; maternal age <20 years: 46, 35 years +: 100, 40 years +: 26; duration of labour: <12 hours: 951, <24 hours: 983, <36 hours: 992; malpresentation (singletons): breech: 25, shoulder: 2.4, face: 2.0; intrapartum haemorrhage: 1.5, postpartum haemorrhage: 6.5; retained placenta: 4.0; eclampsia: 1.8; rupture of the uterus: 2.1; cord prolapse: 5.9; use of forceps/lever: 1.6; cranioclasty: 4.7.

On fetal auscultation

Although Maier of Geneva reported hearing fetal heart sounds in 1818 and Kergaradec the uterine

'I know of no case where the advantage derived from the use of the stethoscope is more fully demonstrated, than in the information it enables us to arrive at with regard to the life or death of the foetus, in the progress of tedious and difficult labours. It is, in my opinion, one of the greatest improvements that has been made in the practice of midwifery; and what adds much to its value is, that an acquaintance with its application is not so very difficult of acquirement to any one, whose hearing is unimpaired – it being only necessary the ear should be accustomed to the sounds for some time, to be able to apply it with advantage. Heretofore, we were in a great measure ignorant of the time at which death took place; and the practitioner, imagining the child alive, from want of satisfactory evidence of its death, delayed interfering, until his patient was in the greatest possible danger; whereas, had he been assured the child was

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dead, he would have delivered her before life became actually hazarded, and thus prevented her not only enduring for hours, but even days in some instances, the most torturing pain, the result of which continued suffering was not unfrequently death, or what was perhaps worse than death, extensive sloughing of the urethra or of the recto-vaginal septum, establishing a communication between these two cavities, reducing the unfortunate sufferer to a state of extreme misery ... I cannot, therefore, too strongly impress on the mind of the junior practitioner, the absolute necessity of making himself acquainted with the use of the stethoscope, considering it, as I do, of the utmost importance in these cases. I can safely say, I should feel most unhappy without it, in any attendance, where the labour was protracted or severe; I am satisfied there is no mode of diagnosis more truly useful, and feel convinced, that all who accustom themselves to its application, will eventually agree with me in this opinion'.

Collins also drew attention to the value of auscultation in diagnosing multiple pregnancy:

'Many signs have been given by different writers, whereby to distinguish if there be more than one child in the uterus, previous to labour, such as the great size and uneven feel of the abdomen ... We have in the Hospital in many instances, detected with accuracy the existence of twins, long previous to the setting in of labour, by the use of the stethoscope, from the remarkable difference in the action of the two hearts ... When the action of both hearts is nearly synchronous, or the mother's pulse very frequent, it is difficult to decide with certainty'.

Yet a year later, another British obstetrician, Dr James Hamilton, expressed his opinion that: '... in the better ranks, no prudent practitioner would have recourse to means calculated to excite alarm in the patient, and surely the ceremony of applying the stethoscope must be very formidable to susceptible females ... there must be some fallacy in the observations of those who have supposed that the stethoscope can detect the pulsations of the fetal heart'.

On puerperal fever

Since 1767 there had been many epidemics of puerperal fever at the Rotunda. Collins describes the hygienic preventive measures used by his predecessors, Clarke and Labatt (after the 1773 recommendations of White of Manchester) and then reports his own measures after experiencing 56 deaths from this disease among the first 5869 women delivered during his Mastership:

'In Feb 1829, at which time I was Master, puerperal fever, which for several months previous had prevailed in the Hospital, now increased much in intensity. On consulting with the Medical Committee, it was deemed advisable at once to recommend that no patients, except such as were absolutely destitute, should be admitted; but that attendance should be afforded to all such as

wished for assistance at their own homes, and that they should be supplied with gruel, whey, and medicine from the Charity, until the entire wards of the Hospital should have been thoroughly purified. We then had all the wards in rotation filled with chlorine gas in a very condensed form, for the space of 48 hours, during which time the windows, doors, and fire-places were closed, so as to prevent its escape as much as possible. The floors and all the wood-work were then covered with the chloride of lime, mixed with water to the consistency of cream, which was left on for 48 hours more. The wood-work was then painted, and the walls and ceilings washed with fresh lime. The blankets, &c, were in more instances scoured, and all stoved in a temperature of between 120 and 130°. From the time this was completed, until the termination of my Mastership in Nov 1833, we did not lose one patient by this disease (among 10,785 deliveries). As the wards of the Hospital are occupied by the patients in rotation, as soon as each in succession was vacated I continued the use of the chloride of lime, confining its application to the floors. In this way each ward was washed every ten or twelve days, the solution being left on for 24 hours, during which time the blankets, quilts, linen, &c, were suspended, so as to be exposed completely to the chlorine gas, which is copiously disengaged from the preparation mentioned. The chloride of lime was then carefully washed off, and the boards when dry, polished with a brush'.

Collins clearly appreciated the contagious nature of puerperal fever. Even though he failed to mention the importance of hand washing, his regimen abolished the disease from the Rotunda for four years and reduced the maternal mortality to the then exceptionally low level of 5.3/1000 deliveries. After his retirement as Master in 1833, no further use of chlorine is recorded and in 1835 there was another serious epidemic in the hospital. Nor do others elsewhere appear to have adopted his method of prophylaxis. Collins ends his book by paying tribute to Dr Bartholomew Moss, who founded the Rotunda Hospital in 1745, the first maternity institution in the British Isles.

Dr Collins enjoyed an extensive private practice for many years. As a physician he was highly gifted, while as a consultant he was regarded as one of the soundest, safest, most discreet, and high minded in the profession; and on points of professional ethics or etiquette there were none whose opinion held greater weight. In 1839 he was made an Honorary Fellow of the King and Queen's College of Physicians and in 1847–8 its President, the first exclusively obstetric practitioner to be appointed to this distinguished office. At that time he also received the MD of Trinity College, *Honoris Causa*. Twenty years later he died in December, 1868. He was 67.

- 1 Browne OTD. *The Rotunda Hospital, 1745–1945*. Edinburgh: E and S Livingstone, 1947.
- 2 Collins R. *Practical treatise on midwifery containing the results of 16 654 births, occurring in the Dublin Lying-in Hospital during a period of seven years, commencing in November 1826*. London: Longman, Rees, Orme, Browne, Green and Longman, 1835.