Neonatology—then and now (CHM Walker)

Deafness in children of very low birth weight

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The fact that more preterm than term babies were eventually found to have some degree of deafness was recorded at least 10 years before this paper was published. This work, however, confirms the fact that the deafness was mainly:

‘Moderate or severe high frequency loss with never more than moderate low frequency loss’.

Discussion about aetiology until the middle 1960s ranged around excessive oxygen administration, infection, streptomycin, jaundice, and rubella (the latter two being responsible in those days for less than 1% of deaf children of school age). This study, like most reports of this kind at the time, reported the examination of children when deafness was detected by the health visitor or school medical service, therefore it was difficult to attribute cause if there had been intercurrent illness postnatally, in infancy, or early childhood. McDonald, however, found deafness to be related to gestational age of less than 33 weeks and to cyanotic attacks in the neonatal period. No direct relationship was found to intrapartum asphyxia, jaundice, or streptomycin, though it was thought that the condition necessitating treatment with this drug may have been responsible in a few babies.

The discussion ends:

‘It is suggested that asphyxia during the neonatal period is responsible for deafness in very immature infants, and that the mechanism is neuronal damage by hypoxia’.

Today. We are still trying to determine the exact time at which cochlear damage is sustained. With the advent of auditory evoked brain stem response techniques it has become possible to detect damage in the early postnatal period and so to determine to some extent the relative importance of antenatal and postnatal factors. One such potentially dangerous exposure after birth is that of incubator noise. Not a great deal of attention has been paid to this though, to my personal surprise, having found some incubators with decibel levels surprisingly close to those considered dangerous in industry, this source of damage has been exonerated. Ototoxic drugs are still with us, though short term exposure and careful dosage should prevent injury from these.

So we are thrown back on intrauterine and immediate postnatal factors of which hypoxia, as suggested 25 years ago, seems the most likely culprit. Early detection is important so that stimulation with hearing aids can be initiated as soon as practicable. As it is unlikely that facilities will permit all at risk babies to have evoked response testing it is hoped that the acoustic response cradle will eventually prove consistently reliable as a screening procedure.¹

Reference


Alison McDonald graduated at London University (Royal Free Hospital) in 1952, proceeding to MD, Diplomas in Public Health and Child Health and Fellowship of the Faculty of Community Medicine. She must be rather unique in that she has been on the academic staff of three medical schools in London and one in Montreal. After appointments in London as lecturer and senior lecturer at the Royal Free and Guy’s Hospitals respectively, she became, in 1964, Associate Professor then Professor in the Department of Epidemiology and Health at McGill University, Montreal. In 1978 she returned to London as Professor and Head of the Department of Epidemiology, St Mary’s Hospital Medical School, only to be lost again to Canada in 1981, this time to become Professor in the School of Occupational Health where she is still in practice.

Dr McDonald has researched and written on many subjects relating to obstetrics and the newborn, particularly with reference to congenital defects and developmental problems. She has conducted studies of the Canadian Health Insurance Programme and is currently engaged in producing a series of papers on the effects of work on pregnancy.

No doubt she was one of quite a number of her generation who could be called ‘doctors of two (or more) continents’.