AIMS For a better birth...

A knee-jerk response to medicalised birth

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Miranda Dodwell looks at the role of primitive reflexes during pregnancy and birth, and their effect on the health of our children

Maternity statistics published in April 2002[1] show that medical interventions during birth are continuing to increase. AIMS and other childbirth organisations are campaigning for a return to a birth that is allowed to progress physiologically. There are many reasons why unnecessary obstetric births are seen as disadvantageous, including their effect on the wellbeing of the mother, the deskilling and de-motivation of midwives, and the cost to the National Health Service.

At a time when 51 per cent of obstetricians think that a caesarean section is safer for babies[2] few studies have looked at the long-term effects of medical intervention on babies and how an infant's development might be affected by such maternity care.

Much of the work done in this area is controversial, and the information available has largely been provided by those who make a living by treating children with neurodevelopmental delay. Much of the work referred to here was pioneered by the Institute for Neuro-Physiological Psychology (INPP) in Chester, established in 1975 by Peter Blythe.

Development of reflexes

The developing fetus has fetal reflexes from approximately six weeks after conception. These are replaced by primitive reflexes which peak at birth and are gone by nine months. Infant reflexes appear at about five months and prepare the child for the next stage of crawling. These are inhibited after 11-14 months and replaced by postural reflexes, providing the basis for balance, posture and voluntary movement in an upright position, for the rest of our lives.

Midwives are most familiar with the primitive reflexes as testing some of these are part of the routine neonatal check on babies. Reflexes tested at birth include the sucking, rooting, palmar grasp and Moro reflexes. These tests, performed at birth, check that the central nervous system is properly developed.

The asymmetrical tonic neck reflex (ATNR) is activated by turning the baby's head to one side. As the head is turned, the arm and leg on the same side straighten while the opposite limbs bend. The ATNR develops from 18 weeks after gestation and facilitates birth - the baby's head turns after it has crowned to allow the shoulders to appear. After birth, it is no longer needed and should be inhibited by six months of age. If this reflex is retained, it can cause coordination, balance and visual problems. There may be

difficulties controlling the hand and arm when writing as well as problems with visual tracking, necessary for reading and writing. One side of the brain will not be dominant over the other, leading to crosslaterality (right-handed, but left-eyed). Difficulties with coordinating, balancing, reading and writing may lead to a diagnosis of dyslexia or dyspraxia extending into adulthood.

The tonic labyrinthine reflex (TLR) is a complex reflex with two phases. The flexion phase emerges by 12 weeks after conception and should be fully inhibited by the time the baby is four months old, and is characterised by a curling into a fetal position with the head bent towards the chest. The extension phase is present at birth and should disappear by about three years of age. This reflex is seen when a baby's head tips backwards, and the baby extends its arms and legs. If the TLR is retained, there tends to be problems with balance and spatial awareness, poor muscle tone leading to problems with crawling, or a tendency to walk on the toes. The spatial awareness difficulties can lead to motion sickness, fear of heights, reversal of letters when writing and poor sequencing skills which affect organisation. A child with a retained TLR may well dislike PE at school, and is often diagnosed as dyslexic or dyspraxic.

The spinal galant reflex develops at 20 weeks of gestation and should be inhibited by nine months of age. In a newborn baby, this is seen when stimulation on one side of the spine causes the baby to flex in that direction. This reflex is important in the birth process as it helps the baby move down the birth canal by causing small movements in the hips. If this reflex is not inhibited, it can cause continual discomfort as the back can then be stimulated by even clothing or the back of a chair. Children with a retained spinal galant reflex are always wriggling and squirming, or adopt sitting positions that avoid stimulating the reflex, such as slouching badly. The inability to sit still may, together with other factors, contribute to a diagnosis of hyperactivity. There may also be problems with bladder control, potty training and bedwetting. Eventually, a child may end up with permanent tension in their abdominal muscles, which solves the bedwetting, but stores up future problems such as lower back pain and irritable bowel syndrome. Inhibition of the reflex is important for the full development of some postural (adult) reflexes such as the segmental rolling reflexes, necessary for the correct positioning of the shoulder and hip when walking.

The Moro reflex is tested for at birth. This develops from about 10 weeks after conception and is usually inhibited by four months of age. Babies who are startled fling their arms wide with their hands open and take a sudden deep breath. They then gradually bring their arms into their body and breathe out. If this reflex is retained into childhood, the child suffers from sensory overload and their stress hormones are continually activated, leading to low blood sugar and a need to eat frequently. Concentration is difficult as the child cannot ignore peripheral stimuli, and tends to be very anxious, with a need to control their environment and avoid changes. The child then becomes shy and withdrawn or aggressive, or switches from one to the other. Such a child may well be diagnosed with attention-deficit hyperactivity disorder (ADHD), and if the reflex persists into adulthood, the adult is also either continually active or withdrawn to avoid overstimulation. Clearly, retention of these reflexes can cause major social and learning difficulties.

Causes of retained reflexes

Those working in the field appear to agree that the causes of neurodevelopmental delay occur during pregnancy, birth or the first 18 months of life. There is not necessarily a single cause, but possibly a combination of factors. During pregnancy, these may include severe stress, threatened miscarriage, illness, high blood pressure, excessive alcohol consumption or smoking.

While some of these factors are within the control of the future mother, many are not. AIMS' research officer Jean Robinson has written about antenatal anxiety[3] including evidence that it causes behavioural and emotional problems in four-year-old children.[4] Jean suggests that antenatal care should help those women at risk of antenatal anxiety, beginning with continuity of midwifery care with priority to sinkhousing estates and by giving pregnant women the social support they need. Women pressurised into having a hospital birth they don't want may also be at risk.

Factors during birth include prolonged labour, fetal distress, forceps or ventouse deliveries and caesarean section. It may be that, as many of the primitive reflexes are designed to help the birth process, denying the opportunity to use them may contribute to their persistence into childhood. While it is not necessarily within a woman's power to give birth in a way that helps her baby's use of reflexes, there may be a lot that maternity care service providers can do to help.

As much of the recent media debate centres around the desirability of maternal choice for elective caesarean section and the belief of many obstetricians that caesarean section is safer for babies, it seems the time is right for a longitudinal national survey of the consequences of birth interventions, including learning and behavioural difficulties.

Postnatal factors may predispose babies to neurodevelopmental delay, including resuscitation at birth, a low birth weight or a high fever within the first 18 months of life. Harris Coulter, PhD[5] has put forward the theory that vaccine damage causes autism, ADHD and dyslexia.

Treatment for neurodevelopmental delay

For children who already have the problems caused by retained primitive reflexes, a range of treatment is available, focused on reflex stimulation and inhibition. Initially, there is usually an assessment to determine which reflexes are retained, followed by a programme devised to deal with the child's specific problems. There are different methods of treatment. Physical exercises can retrain the reflex pathways to allow the child to develop coordinated movement and overcome their learning difficulties. These include educational kinesiology or 'brain gym'. Research into the use of these movements[6] suggests that reading difficulties could be linked to persistent primitive reflexes, including the ATNR, and that specific movement sequences can be used to decrease the degree of the persistence of the reflex[7]

Another approach to treating neurodevelopmental delay is the use of 'body- brushing' or 'neurodermal stimulation'. Instead of exercises, this technique relies on stimulating the skin with a soft paintbrush to

develop and inhibit the primitive reflexes.

The disadvantage of these treatments is that they are not a 'quick-fix' - the exercises and stimulation have to be done on a daily basis over a period of about nine months. Also, it tends to be rather expensive and, at present, there is mostly only anecdotal evidence that it is effective.

Ideally, the prevention of neurodevelopmental delay is better than treatment after the event. More research is needed to establish clearly the relationship between events in pregnancy, birth and early life, and the problems of retained reflexes. In the meantime, those involved in maternity care have a responsibility to future generations to ensure that the care they give reduces antenatal anxiety and minimises unnecessary interventions.

On 12 September 2000, Ann went into labour, having made no impression on the Trust whatsoever. In desperation, she rang two independent midwives, Jane Evans and Sally Stockley, both of whom dashed across the country to assist her. Jane Evans arrived first to find Ann on her hands and knees with a little pink foot protruding. Sally Stockley arrived shortly thereafter. Ann gave birth to an 11- lb baby, presenting by the footling breech and in a posterior position which spontaneously turned. Her daughter was born without a tear five minutes after the midwives arrived.

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