General Practice Observed

Critical appraisal of domiciliary obstetric and neonatal practice

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Summary

Obstetric and neonatal data on 155 domiciliary deliveries were analysed. The findings illustrated the problems in adhering to generally recognised risk criteria for selecting cases for domiciliary confinement and the unpredictability of events in the newborn period. Awareness of the risks of home confinement have led to increased efforts to achieve 100% hospital delivery. At the West Middlesex Hospital, to make hospital confinement more acceptable to mothers, we have tried to alter inflexible hospital routines and to make previously austere labour wards less impersonal. The same midwife who has supervised the antenatal period brings the mother into the unit, and transfers her home as soon as possible afterwards.

Introduction

Since many surveys emphasise the dangers of home confinement to both mother and baby,^{1,2} current medical policy is directed towards 100% hospital delivery. In 1958 34.7% of babies were born at home² compared with 10% in 1971,³ although there is considerable regional variation. In the West Middlesex area, where hospital access is easy, the figure was 5% in 1974,⁴ but even this percentage would represent over 44 000 home confinements nationally.

Information on a group of domiciliary births included in a combined obstetric child health project was analysed, as periodically there is renewed interest in home confinement. The study, supported by the Department of Health and Social Security, was undertaken from 1970 by obstetricians and paediatricians together with the health department in Hounslow. We wanted to compare methods for early detection of delayed and aberrant development. Prospective obstetric and neonatal data were collected on all births within an area of Hounslow. A paediatric member of the research team visited every domiciliary delivery at home to obtain comparable data between domiciliary and hospital births.

Method

We studied mothers living in the catchment area when their babies were born. Just over 1900 babies were included, most of whom were born in hospital; 155 deliveries, however, were conducted at home, and these provided the material for this paper.

Initially, details of the study were circulated to all general practitioners and midwives in the area. They were invited, in small groups, to discuss various aspects with obstetricians and paediatricians. We thought that this informed group of professional people would refer to hospital for delivery all women in the accepted "high risk" obstetric categories. After a domiciliary birth arrangements were made with the general practitioner for the baby to be examined by a research paediatrician as near to the sixth day of life as possible.

Results

From 1 October 1970 to 29 February 1972 there were 1937 births in the catchment area. The perinatal mortality rate was 21.7 compared with the national figure in 1971 of 22.3.⁵ Out of 172 mothers who booked for home confinement 150 were delivered at home, but five mothers with hospital bookings had home deliveries, making a total of 155 deliveries (8% of all births). There were no perinatal deaths among the domiciliary deliveries or those transferred to hospital. All but six of the babies were seen by a project paediatrician in the neonatal period.

Social factors—All but seven of the mothers were born in Britain, only one was unmarried, and housing was satisfactory. Table I shows the social class distribution in the domiciliary group compared with those who had their babies in hospital. The distribution was surprisingly similar in both groups.

Transferred bookings—The bookings of 19 mothers were changed during pregnancy for acceptable medical reasons. Three mothers were transferred as an emergency during labour, an inevitable risk of domiciliary confinement. Some of the individual cases were of special interest. One mother who had a previous intrauterine death was not referred to hospital until the 43rd week. Another with hypertension during pregnancy, induced at home at 42 weeks, required emergency transfer during labour because of a compound presentation. Another grand multipara, known to be anaemic, was taken to hospital by the flying squad when a breech presentation was discovered during labour.

Obstetric "risk" factors in home deliveries—Altogether 61 (39%) mothers had one or more recognised "risk" factors. Fifteen (10%) should not have been accepted for home confinement: six were primigravidae, seven grand multiparae, one mother had a previous small-for-dates baby, and another a previous intrauterine death at 24 weeks. Hospital bookings for 46 (30%) mothers should have been made during pregnancy. Nine had diastolic blood pressure readings of 90 mm Hg or over on more than one occasion, two had a haemoglobin level of less than 9.5 g/dl and one had an antepartum haemorrhage. Eighteen pregnancies were allowed to continue beyond the 42nd week of gestation and in six women low weight gain (less than 900 g between 32 and 36 weeks), though carefully recorded, was ignored.

Induction of labour—Fourteen mothers had labour induced at home, five were hypertensive, and in eight pregnancy was prolonged beyond the 42nd week, including one mother booked for hospital confinement. The midwife was instructed by telephone to induce labour in another mother who bled at term. Those who favour home confinement to avoid the artificial onset of labour may find these figures disturbing.

Prolonged labour—Opinions differ as to what constitutes prolon-

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TABLE I—Social class. (Defined in terms of husband's occupation)⁶

Place of birth	Social class						
	I	II	III _{nm}	III _m	IV	V	Other
Home (155)	9 (6%)	22 (14%)	30 (19%)	69 (44%)	18 (12%)	7 (5%)	0
Hospital (1755)	110 (6%)	249 (14%)	277 (16%)	646 (37%)	289 (16%)	98 (6%)	86 (5%)

gation of labour, and obstetricians are mainly concerned with failure to progress, but in this group 14 multiparae had first stages of labour lasting over 12 hours and one primipara had a second stage of 110 minutes.

Occipitoposterior position—It is generally wiser to deliver mothers with occipitoposterior positions in hospital because painful prolonged labours requiring forceps delivery are more likely. Nine mothers, who had this presentation had no problems but 2 of the babies were slow in breathing.

NEONATAL FACTORS

Fetal distress—There was fetal distress during labour in 8 cases, meconium-stained liquor being present in seven and fetal bradycardia in the eighth. All were delivered spontaneously, but the latter took two minutes to breathe properly.

Conditions at birth—One hundred and twenty-six babies cried within a few seconds of birth, and required no intervention other than mucus extraction, but 18 (12%) took more than one minute to breathe properly and 11 more than two minutes. One baby received mouth-to-mouth resuscitation, another produced grunting respiration lasting 30 minutes, and a third did not respond to the midwife's efforts and was admitted to hospital as an emergency.

Birth weight—The birth weight of most babies was within the normal range, although one weighed less than 2500 g and seven had a birth weight below the 10th percentile for gestational age. In most neonatal units these babies would receive special care and investigations because of the risk of hypoglycaemia,⁷ but none were undertaken in the home.

Neonatal period—In most cases the neonatal period was uneventful. The midwife and family doctor managed satisfactorily such conditions as cephalhaematoma, umbilical cord infection, eye infections, and postural talipes. Sometimes they seemed pleased to discuss their findings with the study doctor; these included a petechial rash, abnormal movements, localised oedema, unstable hip joints, and other physical findings. One of these babies was later diagnosed as having the Klippel-Feil syndrome.

In a few babies, however, signs were missed or their significance not appreciated. Five babies were deeply jaundiced at the end of the first week, which suggested that the jaundice had been more severe earlier. No serum bilirubin estimations were carried out, although two of the babies were the second and third children of Rh-negative mothers; one of them had a cord blood bilirubin of 53 $\mu\text{mol/l}$ (3.1 mg/100 ml) and another was apathetic, difficult to feed, and lost over 10% of his birth weight. The study paediatricians suspected a cardiac murmur in another baby, which was later found to be due to a ventricular septal defect. Another baby, admitted to hospital because of clonic movements, was discovered to have a patent ductus.

Relations with obstetric factors—The occurrence of birth and neonatal problems in the baby related to the presence of obstetric high risk factors in the mother is summarised in table II.

TABLE II—Problems in the baby related to obstetric risk factors

	High risk	Low risk	Total
No of mothers	61	94	155
No of birth problems	9	9*	18
No of neonatal problems	4	8	12

*Includes 2 of the babies most seriously affected at birth.

Discussion

The current view of both obstetricians and paediatricians is

that all babies should be born in hospital but although considerable progress has been made doubts have been expressed about the possibility of achieving this ideal. Arthure⁸ maintained that some mothers were terrified of hospitals and modern obstetric technology, and the media have done little to allay their fears. Other mothers have found positive advantages in home confinement. In a survey of 336 women who had previously had babies at home and in hospital, Gordon and Elias-Jones⁹ in 1960 showed that 80% preferred home confinement. The main reasons given were dislike of separation from their husband and children, appreciation and comfort of the relaxed atmosphere of their own home, and the individual attention from their domiciliary midwife. Fourteen years later in 1974 Goldthorp and Richman¹⁰ with an identical percentage showed that these attitudes still prevailed. Their information, however, was collected by domiciliary midwives, who could have had a vested interest in home confinement. Indeed, Topliss¹¹ found that district midwives were clearly convinced that home confinements were superior to those in hospital. During observed booking sessions no mother was recommended for hospital confinement whatever the risk factors (not even a 39-year-old woman in her ninth pregnancy). Nevertheless, woman may exert considerable pressure on their advisers. Others clearly reject medical advice; for example, in this study four mothers booked for hospital confinements, delayed calling the ambulance, and consequently were delivered at home.

Goldthorp and Richman¹⁰ suggested that the mother's preference should be weighed more critically against medical criteria, although in their series of 65 mothers three mothers and one baby were subjected to the increased risks of emergency transfer to hospital.² Fryer and Ashford¹² stated that, although perinatal mortality rate fell until 1967 with increasing hospital confinement, the trend had reversed. They maintained that there is no objective evidence that more than a few of the confinements currently taking place in institutions enjoy services substantially better than could be provided in the patient's own home by an effective domiciliary service. Such a comparison could result in a revival of domiciliary practice, not because it is inherently better, but because of present hospital inadequacies.

Selective domiciliary confinement, though reducing the risks, could never provide a completely safe alternative to hospital for two main reasons. Firstly, as this study emphasises, even in an area with excellent family doctors who knew there was a research project in progress, adherence to generally recognised risk criteria proved difficult. Secondly, because of the unpredictability of events during childbirth, a normal delivery does not preclude an asphyxiated infant at birth.¹⁴ In this study half the babies with problems at birth occurred in the obstetric low risk group and although there were no perinatal deaths there were occasional potentially hazardous situations which may have prejudiced the child's optimal development.

Nevertheless, the reasons given by mothers who prefer home confinement are valid and must not be ignored. Hospitals are impersonal and continuity of care is rare. The mother and baby often have to fit in with the needs of the institution, instead of the other way round. Husbands may be allowed to accompany the mother but children and friends are usually discouraged. The answer to clinical deficiencies and bad social relationships within hospitals will not be found in a "back to nature" cult jeopardising the safety of mother and child. It is essential to take a critical look at hospital conditions and search for means of improvement.

Current early discharge schemes have made hospital confine-

ment more acceptable to mothers by shortening their stay. The effects on mothers and babies have been widely studied,¹⁵⁻¹⁸ and as complications were few their popularity has increased. Another approach has been the introduction of general-practitioner units linked with a consultant unit such as that described by Rawlings.¹⁹

At the West Middlesex Hospital we have tried to alter austere impersonal labour wards and inflexible hospital routines.⁴ Two rooms in the maternity wing have been attractively redecorated and mothers in labour are brought into the unit for delivery by the midwife who has attended them throughout the antenatal period. If all is normal they are transferred home with their midwife as soon as six hours afterwards. Should an emergency arise the hospital staff and facilities are immediately available.

One worrying aspect of early transfer schemes is that the consultant paediatrician no longer supervises the neonates critical first week of life. It is not reasonable to expect such specialist skills from the midwife and general practitioner alone. The provision of community-based paediatricians co-operating closely with the hospital paediatric service, general practitioners, and midwives might ensure that the routine neonatal care of babies at home is comparable to that of babies in hospital. If such care can be provided, the West Middlesex scheme and others like it may form the basis for a maternity service which combines the safety of hospital with the personal qualities of home confinement.

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For Debate . . .

Cancer statistics

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The leading article "Statistical review of cancer in England and Wales" that appeared recently in the *BMJ*¹ emphasised the inconsistencies of "official" statistics. Cancer registries fall into three groups—hospital, regional, and national—but all have to solve five types of data problem. These are commented on below.

OPCS and registry data

1. DATA COLLECTION

Collection of data occurs at hospital level, and the amount of information gathered is usually determined by the requirements of the relevant regional registry, which in turn is guided by the requirements of the national registry, the Office of Population Censuses and Surveys (OPCS) for England and Wales. Since 1970 the Office of Population Censuses and Surveys² has not required the record of disease stage for each patient. Thus a factor *known* to affect survival has been lost for future analysis. The arguments that (a) many centres never record stage and (b) few requests for staged information are made are hardly sufficient.

2. DATA STORAGE

The *BMJ* points out that "reporting varies widely from region to region," and this is also true of methods of data storage. Attempts to computerise cancer registries have not been entirely successful; in some cases the original manual system has been retained in parallel with the computer. Often data backlogs have accumulated and several years have been needed to produce an efficient up-to-date system.

3. DATA RETRIEVAL

Data retrieval is linked to data storage, but a computer system is not always superior to a manual system. If a cancer registry is linked to a large off-site computer a low priority may be given to cancer registry work even if it is an RHA computer.

The Office of Population Censuses and Surveys is unable to produce accurate results when the basic data are poor. An incomplete sample of case histories will not necessarily be a *random* sample—perhaps some long-term survivors will have been lost to follow-up. I suggest that the following information is the *minimum* that is required.

- Date of first treatment
- Date of recurrence (if any)
- Date of death
 - Cause of death
 - Necropsy?
- Patient's state (dead or alive) at yearly anniversaries subsequent to the date of the first treatment
- Details of treatment
- Clinical disease stage at diagnosis
- Tumour histology
- Age at diagnosis
- Sex
- Hospital centre at which first treatment was given

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