Is Breast Feeding Best?

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THE PROPORTION of mothers who breast feed their babies has become steadily lower during the past few decades. In Britain, only about one mother in five now continues to breast feed until the baby is three months old. In America, only one in five is breast feeding at the end of the lying-in period.[1]

This decline of breast feeding has taken place in defiance of orthodox medical opinion. Most doctors and nurses are taught, and believe, that breast feeding is best. Nearly all pediatric textbooks extol the superiority of breast milk over artificial feeds, and some go so far as to say that breast feeding has all the advantages and no real disadvantage. In Britain, at least, breast feeding is advocated in nearly all maternity hospitals, and most local authorities encourage it through an increasingly elaborate organization of clinics and health visitor services.

The growing unpopularity of breast feeding among mothers suggests that this "natural" method of nourishing babies is not so trouble-free as it is said to be by authoritative medical teaching.

In this paper, I shall first examine some of the assumptions that appear to underly the medical point of view. Next, I shall refer to work recently undertaken to study breast feeding from the mother's point of view, which indicates that real disadvantages do exist.

HISTORICAL BACKGROUND OF THE MEDICAL ATTITUDE

About fifty years ago, there was widespread concern about the tremendously high infant mortality. In many industrial towns about one baby in four died before its first birthday, commonly from infection. It was considered with some justification that mortality was particularly high among bottle-fed babies. Standards of hygiene were very low, and furthermore, most of the feeding mixtures available about the beginning of this century were nutritionally inadequate. Morse,[2] reminiscing on forty years of infant feeding in the United States of America, stated that "most babies were fed on proprietary foods, a considerable proportion of which contained no milk and were mixed with water. Very few physicians had any idea what the mixtures contained, or would have understood if they knew." Early in the present century, elaborate attempts were being made to mimic what was known of the chemical composition of human milk, but this often made artificial feeding more difficult for the mother. Up to the time of the first World War, artificial feeding remained a dangerous and expensive art.

Under these circumstances, doctors were undoubtedly right to do everything possible to encourage breast feeding. But though the motives were excellent, the means were often dubious. Like all propaganda, the slogans used to promote breast feeding were categorical, leaving no room for doubt. For example:

"Every mother can breast feed her baby." This was sometimes put so that the onus fell squarely on the mother: "Every woman can breast feed if she wants to." "Breast milk is designed by Nature specially for the baby." "Breast feeding is safer than bottle feeding." "Breast feeding is cheaper than bottle feeding." Or, even, "Breast feeding costs nothing." These, or closely similar, examples are familiar even today.

Though, on the surface, the advocacy of the medical profession appears to have changed comparatively little during the past half-century, there may be an important difference between precept and practice. Many

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family doctors are by no means unwilling, on request, to prescribe estrogens for the suppression of lactation, and a breast-milk substitute for the infant.

The impact of official medical opinion upon the minds of mothers is no doubt greatly modified by the advertisements of manufacturers of foods for infants. Every child is aware, from an early age, of the pictures of bonny babies assiduously published by commercial firms. The effect is not greatly altered by such lip service to medical opinion as "Breast feeding is best, but when it fails, use———."

MATERNAL CAPACITY FOR BREAST FEEDING

Surprisingly little is known about variations in the yield and composition of breast milk. From many pediatric texts, it might be assumed that the composition of breast milk was relatively constant, and that the great majority of women can, if they wish, produce a sufficient yield.

In a recent study,[3] several hundred 24-hour specimens of breast milk were analyzed for protein, carbohydrate, and fat. The mothers were mostly primiparas, and the results indicated that about one-third were producing milk which was unsatisfactory in quantity or quality, or both, for the nourishment of the baby. This result is in accord with reports by Engel[4,5] that 30 to 40 per cent of recently delivered women examined at autopsy had breasts which were grossly deficient in secretory tissue.

There seem to be two main reasons for the fact that many women are incapable of an adequate lactation. First, the human infant has never been entirely dependent on his mother's lactational ability, because substitute mothers or substitute milks were always readily obtainable. Thus, there is little genetic selection for lactational ability. The evidence suggests that variations are much greater in man than in other mammalian species.

Second, the human mother frequently postpones childbearing and lactation until many years after she has attained sexual maturity. My data show clearly that both the quantity and the nutritive value of breast milk becomes less with increasing age in primigravidas. In 509 24-hour samples, the mean yield fell from 441 ml in women under 20 years of age to 313 ml in those of 30 or over, and the fat content fell from 3.25 g/100 ml to 2.83 g/100 ml. It is tempting to suppose that failure to use the mammary glands is accompanied by some process analogous to disuse atrophy.

It thus appears that, in modern Western society at least, a fairly high proportion of mothers are physiologically incapable of satisfactory breast feeding.

NUTRITIVE VALUE OF BREAST MILK

I have shown above that many women do not secrete milk of adequate caloric value for satisfactory infant growth. Even with a high yield, a milk with only 1.5 g of fat/100 ml is insufficient for any healthy infant.

Apart from such considerations, it is often argued that human milk has chemical or physical qualities which make it more suitable for infant nutrition than any nonhuman milk. In a general way, an "appeal to Nature" of this kind is plausible, but the intention is usually to imply that nonhuman milks are in some way chemically inappropriate for human infants, and I am not aware of any satisfactory demonstration that the substitute milks commonly used nowadays prejudice normal infant growth or general health. Many experienced doctors say that the breast-fed infant "smells sweeter" and has a "bloom" which is not shown by artificially fed babies. This may be so, but it would be difficult to prove, and no attempt seems to have been made to do so.

There is, indeed, some room for doubt that mother's milk is always best even when it is adequate in caloric value. The not uncommon case of the healthy breast-fed baby which cries persistently, apparently from colic, and is immediately "cured" when given a substitute milk, has been reported elsewhere.[6]

THE SAFETY OF BREAST FEEDING

That breast feeding is safer for the baby than bottle feeding has been, and to some extent remains, the keystone of arguments in favor of breast feeding. The argument was certainly true a few decades ago, but there is no recent

evidence which supports it beyond reasonable doubt.

The common finding that more bottle-fed than breast-fed babies die in epidemics of gastroenteritis is often used in evidence. But the assumption is that the bottle-fed and the breast-fed groups differ only in their method of feeding. In Britain, bottle feeding, and particularly careless bottle feeding, is practiced most widely by mothers in the lowest socioeconomic groups.[7,8] It is in these groups, where standards of hygiene are least satisfactory, that intestinal infections are most likely to spread and most deaths likely to occur.

If bottle feeding is indeed notably more dangerous than breast feeding, it is surprising that the decline in breast feeding has been accompanied by such a great reduction of infant mortality, In Bristol, for example, the breast feeding rate at 3 months fell from 76 per cent in 1929 to 36 per cent in 1949;[9] during the same period the infant mortality rate fell from 60 to 26. It is not, of course, suggested that the infant mortality has fallen *because* there is less breast feeding; but the figures do show that an appeal to the safety of breast feeding is now difficult to sustain.

COST OF BREAST FEEDING

Breast feeding is by no means "free," or even very cheap. The metabolic costs can be readily calculated, and these must ultimately be paid for in cash or kind.

The average breast-fed baby growing from, say, 3.5 kg at birth to 6 kg at 3 months, requires 400-700 calories daily from the mother's milk. Given an efficiency of production of 80 per cent (unpublished data) the mother utilizes about 100 calories for every 80 calories secreted as milk. She must therefore expend, *in addition to her ordinary energy output*, about 500 calories daily at the start of lactation, rising to about 900 calories by the end of the third month.

The cost of food which will provide about 900 calories daily varies widely from country to country, and within each country, but in Western countries at least this cost is much greater than that of cow's milk fed directly to the baby. This is not unreasonable; the mother has to eat readily digested food to produce her own milk, whereas the cow, with considerable physiologic skill, can utilize pasture.

However, it is understandable that breast feeding may well *appear* to be cheaper than bottle feeding, which has to be paid for in cash at the time. Many breast-feeding mothers probably succeed in reducing their ordinary activities to some degree, and may subsidize lactation by breaking down body tissues. A tendency to storage is a feature of normal pregnancy, but it is doubtful if such normal stores would contribute more than about 200 calories/day toward lactation. When they have been expended, many mothers will be capable of imposing further drains on their own tissues, though possibly at some cost in vitality and health. Clinical observations suggest that the appetite during lactation is not much greater than during pregnancy, so that the mother may be under the impression that, because she does not buy more food, she is producing breast milk at little or no extra cost. In fact, the financial cost is being spread out, or is being paid in kind, usually temporarily, by a loss of body weight.

PSYCHOLOGIC VALUE OF BREAST FEEDING

The repose and contentment of a successful breast-feeding mother has an appeal which has inspired artists for centuries, and has also been exploited in breast-feeding propaganda. In recent years the importance of the mother-child relationship to mental health has been stressed, and the act of breast feeding undoubtedly expresses this relationship in its most appealing physical form.

I am not competent to debate whether breast feeding favors the future mental health of the child more than does bottle feeding, but there is at present no scientific evidence to support this view. At the very least, a long-term follow-up study of breast-fed and of bottle-fed infants, whose environment is alike in all other respects, would be required.

Breast feeding is also stated to confer psychologic benefits on the mother, and undoubtedly some mothers obtain a unique

pleasure from breast feeding. But extensive follow-up studies in Aberdeen (Scotland) show that this is by no means universal. Many denied vigorously that breast feeding was any more pleasurable than bottle feeding. As indicated below, questions about breast feeding seemed to conjure up for the majority memories of physical restriction, tiredness, worry, and even of pain.

MOTHERS' EXPERIENCE WITH BREAST FEEDING

Since most mothers have been conditioned to believe that "breast feeding is best" in the eyes of doctors, it is by no means easy to get them to discuss the subject without restraint at an interview conducted by a doctor or nurse. We have had to take elaborate measures to obtain information indirectly, or to make it clear to the mother that we did not seek to influence her attitude toward breast feeding but were genuinely interested in what her experience had been and what she really thought.

The findings in a follow-up study have been published elsewhere.[10] In brief, of 106 primigravidas who left the hospital fully breast feeding, and who were visited regularly at home until the baby was 3 months old, only two seemed to breast feed throughout this period without the slightest difficulty or complaint. It is probably significant that both these were living with their own mothers and had practically nothing to do except feed the baby and assist with its management.

The great majority of the breast-feeding mothers complained of feeling excessively tired. This is hardly surprising: Breast feeding is very exacting for a mother without domestic help. She must spend some 6–8 hours daily feeding the baby and catering to its other needs; at the same time, she must continue her responsibility for domestic management, the preparation of meals at fixed times, and shopping. With a new baby, visitors and visiting may be frequent. The physical strain is increased by the fact that, during the first few months, sleep is likely to be interrupted after about four hours. The active and lactating mother has to eat and drink more than usual; otherwise she will lose weight.

As expected from epidemiologic evidence previously obtained, two-thirds of the mothers studied gave up breast feeding during the study period. To quote from the report cited above, ". . . most mothers who have given up breast feeding are emphatic that when the baby was given bottle feeds he slept better, cried less, required less attention and was generally healthier, and that they themselves felt less tired and harassed and more confident."

In addition to this study, we have interviewed nearly 300 mothers five years after the first child was born. The interviews included questions on experience with infant feeding and these led on to more general discussion of the pros and cons of breast or bottle feeding. There was a small minority of satisfied breast-feeders and many who breast fed despite considerable ill-health and difficulty because they believed that "breast feeding is best." But the great majority had turned to the bottle—usually quite soon after leaving the hospital—and were quite unrepentant.

It is perhaps necessary to explain that many mothers are incapable of explaining retrospectively exactly *why* breast feeding was not a success. The circumstances are usually inherently complicated, with perhaps an ailing infant, a tired mother, domestic harassment, prolonged doubt as to what is really best, and a great deal of conflicting advice. Invited to explain, the mother often says merely, "My milk went away, so I put him on the bottle." It needs much time and patience to go further; and even then reliable information is usually lacking on such crucial questions as the yield and quality of the milk and the weight gain and clinical state of the infant.

Some attitudes of infant feeding derive from the conditions of modern life. For example, privacy is now considered to be essential for breast feeding; we found that many mothers were unwilling to put the baby to the breast even within the family circle. By no means all mothers have a private and heated room to retire to every few hours; and if they have, the need for privacy often conflicts with social requirements when visitors are about or the mother goes visiting.

Medical teaching has, perhaps unwittingly, given the mother a strong argument for bottle feeding through its insistence on "formulas" and "normal" gains of weight. Mothers often told us, with an air of stating the obvious, that a great advantage of bottle feeding is that "you can see what he's getting." Apparently an empty breast and a sleeping baby are no longer enough for peace of mind.

It may seem at first sight curious that a natural function such as breast feeding should be attended by so much difficulty, but the defects of breast feeding seem to result from the mother's environment at least as much as from faults in the lactational mechanism. The pressures and needs of modern civilization may be mainly responsible. In primitive society, standards of infant care are far less exacting (judging by the death rates, at any rate); the mother can rely on the family group to relieve her of most responsibilities additional to care of the baby; she can put the baby to the breast whenever it seems hungry; and since she knows of no other kind of feeding, there is no conflict of choice.

CONCLUSIONS

The above is liable to be construed as an attack upon breast feeding. It is therefore necessary to state explicitly that in my experience (both as a doctor and as a father) *satisfactory* breast feeding is by far the simplest and best of all the methods of infant feeding.

The difficulty is that many mothers do not find breast feeding satisfactory, and medical propaganda of classic type is clearly failing in its purpose as well as ignoring some biologic and human realities. What should be the attitude of the medical and nursing professions?

As a general basis, it seems reasonable to retain the slogan that breast feeding is best; but this should not be used as a war-cry to frighten mothers who are clearly unable or unwilling to breast feed, and there should be no implication that modern artificial feeding, properly conducted, gives unsatisfactory results. Each mother should be encouraged to try breast feeding, on the understanding that no blame will attach to her if the attempt fails. Under present conditions, many mothers carry an unnecessary load of guilt because they stop breast feeding under the shadow of direct or implied medical disapproval which has failed to understand the mother's point of view. Perhaps even worse, some mothers persist in breast feeding when from every rational point of view they should have abandoned it. An illustrative case is recounted elsewhere.[10]

If breast feeding leads to difficulties which are not easily surmounted, or if the mother is clearly unwilling to breast feed, she should be helped to feed the baby effectively by artificial means. Where the routine of teaching mothers in the hospital or in the home is concentrated almost exclusively on breast feeding, the mother who, by choice or necessity, has to bottle feed, may be unwisely neglected. It is surely true that good bottle feeding is preferable to inadequate breast feeding; and since the technic of bottle feeding is on the whole more exacting than that of breast feeding, it should be taught when necessary with equal enthusiasm.

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