there is no evidence that true overfeeding ever does. Ignorance and fear, coupled with a misguided desire at welfare clinics to standardize the infants to a rate of gain which is below average and suboptimal, led to the diagnosis in most of my cases. On the other hand, the mothers, when allowed to behave naturally, were quick to recognize underfeeding, because they had to live with their hungry babies.

It is difficult to induce a baby to take a feed against its will, but occasionally simple overloading results in transient vomiting. The obese, pale, flabby baby, with his predisposition to respiratory infections, provides a combination of constitutional factors and an unbalanced diet. Adequate feeding leads to contentment rather than obesity, whereas underfeeding is apt to have far-reaching consequences, both physical and psychological, for the developing infant. The vehemence of the protestations of some medical men and women against the dangers of overfeeding suggests that their views are charged with emotion, perhaps derived from their own feeding experiences in infancy and childhood.

Summary

In a series of 503 healthy infants a definite diagnosis of overfeeding had been made in 71 (14%) and had been suspected in a further 59 (12%) between the ages of 2 and 8 weeks.

Of those infants whose feeds were reduced for this reason 72% were fully breast-fed at the time the diagnosis was made.

Retrospective inquiry definitely supported the original diagnosis in only six cases, five of which were being force-fed. In none were the symptoms alarming.

The commonest cause for the diagnostic errors lay in ignorance of the normal characteristics of early infancy with regard to the rate of gain, frequency of bowel action, and the reasons for crying and vomiting.

A conflict of interests exists between infant-welfare clinics and mothers. Of the overfed group 69% were first so diagnosed at the clinics, whereas 70% of the underfed babies were first so regarded by their mothers.

The literature does not contain factual evidence to support the view that true overfeeding is ever dangerous. Faulty feeding in years gone by, incorrectly referred to as overfeeding, has been responsible for the persistence of the traditional objections to allowing the baby to feed to repletion.

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SELF-DEMAND FEEDING IN A MATERNITY UNIT

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Self-demand feeding of infants has for some time been advocated as preferable to feeding at fixed regular intervals on the grounds that fixed intervals, being unnatural, do not give full scope to the smooth development of the normal infant/mother relationship, especially during the first few weeks of the infant's life (Simsarian and McLendon, 1942; Winnicott, 1948). More recently it has also been shown to be accompanied by more satisfactory breast-feeding and a more rapid gain in weight of the infant than occurs on a fixed feeding schedule (Illingworth *et al.*, 1952). In a trial carried out in 1949 in a large maternity hospital certain other points of importance emerged. We feel that they are complementary to recent papers and therefore worth recording.

An infant who is being fed on demand may require as many as ten or even twelve feeds in a period of twenty-four hours during the first ten days of life. Such frequent feeding, which is usually also at irregular intervals, may not give rise to insuperable difficulties at home, where only one infant has to be considered, but might be expected to interfere not a little with the established routine and care of mothers and babies in large maternity units, especially with routine ward procedures such as meals, swabbings and dressings, bed-pans, supervision of breast hygiene and feeds, and changing of babies' napkins, all of which are usually arranged at fixed times.

Experiment

An experiment was conducted in the Mill Road Maternity Hospital, Liverpool, of 115 beds, the main aim of which was to assess the practicability of self-demand feeding in such a unit. Secondary aims were to observe, if possible, any psychological influence of the method on the mothers and any effect it might have on the establishment and maintenance of breast-feeding and the rate of gain in weight of the infants. Self-demand feeding was instituted in two 22-bed wards in the unit and was practised for a period of four months. In one ward the paediatric registrar carefully supervised both the staff and the mothers. He personally instructed each mother in what was expected of her. In the other ward only the sister and staff were instructed, and it was left to them to put the scheme into effect.

The regime was as follows. The baby was placed in his cot at the foot of his mother's bed some three to four hours after birth, and it was explained to the mother that it was her responsibility to listen for his cry and to pick him up and feed him when she thought that he was hungry. It was further explained to her that she need not worry about the baby forming irregular habits—he would settle down into a regular rhythm quite soon. She was also told that she was at liberty to cuddle and play with him for a time after feeding and at other times if she so desired. In order that we might know how often the babies were being fed the mothers

were asked to make a note of the time of each feed. They were also instructed to hang a red disk on the cotside whenever they picked their babies up, and to put it inside the cot when the baby was put down again, in order that the nursing staff might know, especially at night, when a baby was not in his cot, and therefore possibly liable to overlaying.

The degree to which we actually achieved self-demand feeding depended, of course, on several factors: the enthusiasm and intelligent co-operation of the nursing staff; the time which the paediatric registrar was able to devote to interviewing each mother and explaining what was required of her; and the intelligence and willingness of the mothers to co-operate with us. All of these varied from time to time and, in the case of the nursing staff, from ward to ward. Of special importance was the time available to the paediatric registrar to keep in close contact with the mothers and supervise the whole procedure, for at times his other duties did not permit of such adequate supervision. Self-demand feeding did, however, operate fully in a large proportion of cases. A total of 124 babies were fed by this method.

Practicability of Scheme

The self-demand schedule was found to be practicable in that it did not seriously disturb the routine care of the mother. Any lack of supervision of breast hygiene which may have occurred did not, at any rate, result in an increased number of cracked nipples. Engorgement of the breasts appeared, if anything, to be less frequent than on a fixed feeding schedule. The supervision of feeding was unavoidably inconstant, but this was felt to be a good thing from the mother's point of view, for it enabled her to gain self-confidence. The babies were weighed daily. It was not our practice at any time to allow mothers to know of minor fluctuations in weight, but it is of course especially necessary that all concerned should appreciate that with self-demand feeding there will be fluctuations in the rate of weight gain owing to the variable times of feeding and the varying quantity of milk taken at each feed. From the point of view of the breast-milk bank it was a disadvantage, as there was no fixed time for expressing milk, and mothers did not willingly give up milk when they did not know how soon baby might require another feed. Changing of the babies' napkins was, at any rate, frequent enough to prevent the development of sore buttocks.

With regard to the amount of work falling upon the nursing staff, the nurses were of the opinion that in general they were less overworked than with a fixed feeding schedule, but that at night greater vigilance was required because of the possible risk of overlaying. The light which the sister considered to be necessary at night to reduce this risk was disliked by the mothers.

Psychological Aspect

The most important psychological benefits which may result from self-demand feeding are a better parent/child relationship, an increased sense of security for the child, and fewer behaviour problems—all long-term effects which could not be observed in this series.

The immediate effects, however, were noteworthy. There was no doubt that many of the mothers appreciated the self-demand regime. Some multiparae, who had nursed a previous baby at fixed times and were able to compare the two methods, preferred self-demand. They stated that they felt that the baby was, in fact, theirs and not a baby loaned to them by the sister every three hours for feeding purposes. They appreciated the greater sense of responsibility, the feeling that their baby really needed them, and the freedom to use their own initiative in meeting his needs.

Breast-feeding

The 124 mothers (37 primiparae and 87 multiparae) and infants on self-demand feeding while in hospital were followed up for 10 months. A total of 110 mothers (44

primiparae and 66 multiparae) and infants on a fixed feeding schedule in hospital were selected as controls, but on following them up after several months it was found that 34% of these had adopted self-demand feeding at home on their own initiative and for their own convenience. The follow-up "control" group therefore included a considerable element of self-demand.

It is sufficient to record that in the self-demand group 30% of the cases were breast-fed for 5 months or over and the average length of time of breast-feeding was 3.17 months; while in the control group, including those who changed to self-demand at home, 28% of cases were breast-fed for 5 months or over and the average length of time of breast feeding was 3.85 months. In general, self-demand feeding involved frequent feeds at irregular intervals only during the first fortnight. Thereafter feeds were "demanded" at fairly regular intervals. As already mentioned, the frequency of sore nipples and engorged breasts was not increased by demand feeding. The infants on self-demand appeared, on the whole, to take the breast better than a fixed feeding schedule.

Comparison of the weight charts of infants on self-demand and on a fixed regime while in hospital was made only in a limited number of cases. In 15 cases on self-demand the average fall in weight after birth was 7 oz. (200 g.), in 15 controls 8 oz. (227 g.). In a period of hot weather, on the other hand, the average fall in the self-demand group was 7.7 oz. (220 g.), in the controls 7 oz. (200 g.). Of 15 cases on self-demand 9 were above their birth weight on discharge from hospital, and of 15 controls 5 were above their birth weight.

Discussion

Illingworth *et al.* (1952) refer to self-demand feeding in the Jessop Hospital for Women, Sheffield, but make no reference to the possible difficulties of such a regime and how they were overcome. Other large maternity hospitals which have not yet introduced this method may be thinking of doing so, and for this reason it was thought that a description of our experience of the above experiment might be of interest. Certain points require to be stressed.

The aim of self-demand feeding is not primarily to eliminate difficulties which arise in the maternity hospital. With the usual ward discipline and routine, which includes a fixed feeding schedule, there are few such difficulties with mother or infant in the ward; troubles usually begin when the mother finds herself responsible for her child for the first time when she is back in her own home. Here she is probably offered advice by mother, mother-in-law, and neighbours, each of whom may advise her differently, with the result that she becomes confused and probably discouraged. With self-demand feeding, on the other hand, the mother's troubles are largely met in hospital, where help and reassurance are readily forthcoming and advice is likely to be easily understood and followed by the mother.

The successful introduction of self-demand feeding depends primarily upon a thorough understanding of its purpose and method of working by the nursing staff and mothers. This involves individual instruction of each mother within 24 hours of delivery, as it is the first few days that count most. It also entails detailed individual instruction of each nurse at the beginning of her tour of duty in the maternity ward. In our experience, inadequately instructed nurses were inclined to impose their own ideas of feeding on the mother rather than to supervise a true self-demand schedule. The keynote of the scheme should be that mother and child manage it together, with a minimum of interference by nurses and doctors, help being confined to a little practical assistance and reassurance, usually only when asked for or when medically indicated.

Supervision of self-demand feeding, however, especially during the early months of its introduction in a unit, must be constant and detailed. The paediatric registrar is well situated to supervise the whole procedure, but it is essential

that he should have adequate time to keep in close contact with all the mothers and perhaps to assist the sister in the instruction of nurses. It is noteworthy that Illingworth *et al.* found the services of two registrars to be necessary at the Jessop Hospital for Women, Sheffield.

Where supervision is not adequate self-demand is likely to degenerate into regular feeding, with "a little drop in between if he cries." This happened in our ward not supervised by the registrar.

We wish to thank Professor T. N. A. Jeffcoate and Mr. C. H. Walsh for permitting us to make a trial of this method of feeding in their wards, and also to express our appreciation of the willing co-operation of the nursing staff.

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ACUTE LABYRINTHITIS

BY

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In the *Lancet* of February 9, 1952 (p. 299), it was suggested that there was prevalent at the time an unusual epidemic characterized by the sudden onset of vertigo and nystagmus. Nystagmus is described as "a rapid oscillatory movement of the eyes, independent of the normal movements, which are not affected" (Law, 1945). Vertigo, the causes of which are many, depends upon "a disturbance of the sense of equilibrium" (Farquar Buzzard, 1945), and can be divided into general vertigo and special vertigo. In the latter, objects appear to move, or the patient may himself tend to fall in a definite direction. Nystagmus has been classified (Russell Brain, 1947) into several distinct groups: (1) defective or abnormal retinal impulses; (2) abnormal labyrinthine impulses; (3) lesions of the cervical spinal cord; (4) lesions involving the central paths concerned in ocular posture; (5) weakness of the ocular muscles; (6) congenital abnormality of unknown aetiology; and (7) hysterical. In the present series the nystagmus fell into group 2, and was labyrinthine in origin.

Labyrinthitis has been described in two forms (Tidy, 1945): (1) Ménière's disease, and (2) Ménière's symptom-complex, in which there occur tinnitus, attacks of vertigo, nausea, and progressive deafness. Ménière's disease has three main classes of symptoms (Purves-Stewart, 1945): first, violent giddiness and reeling caused by involvement of the semicircular canals and vestibular mechanism; then with involvement of the cochlear auditory apparatus, tinnitus, and nerve deafness, incomplete at first but fluctuating in intensity; and, thirdly, cold, clammy sweat, and nausea and vomiting of bulbar phenomenon, due to affection of the adjacent medullary centres. Finally, Ménière's disease usually occurs in later years, and is relatively uncommon.

The six cases recorded below have all been seen in routine practice within the last year. They are my own patients, visited in the usual manner. They all reside within a radius of one mile from my surgery.

Case 1

A man aged 58 was first seen at my surgery on the evening of April 12, 1951, with a history of severe vertigo of sudden onset from early afternoon. In standing and walking he was assisted by his wife, and was literally falling

around the room. His oral temperature was normal, and his pulse, although fast, was regular and of good volume. No pathological condition was found in the ears, and examination of the heart and lungs provided no clue to his condition. His blood pressure was 180/90 mm. Hg. There was gross rotating nystagmus, but no other abnormality was found in the central nervous system. He was seen at his home on April 13, when there was little change in his general condition. Nystagmus was produced by opening the eyes and attempting to focus on an object, or on very slight movement of the head. When the nystagmus was present the patient had intense vertigo, which produced vomiting, sweating, and a cold clammy skin. On the 14th he had improved, and on the 16th could sit up in bed without vertigo. On the 19th he was able to attend the surgery, but complained of "lightness of head," so that he did not feel well enough to return to work until April 30.

On May 7 he was examined by an otorhinologist, who reported: "This case suggests an acute labyrinth irritation, which has not recurred since. The right Eustachian tube is completely blocked." On June 4 an audiometric test showed slight impairment of both auditory nerves. Some 11 months later the patient was well and symptom-free.

Case 2

A married woman aged 73 suffering from pernicious anaemia had been receiving regular liver therapy, and her last blood report showed 5,000,000 red cells and 98% Hb. I first saw her on November 10, 1951, when she was in bed in a shocked state, suffering from intense vertigo and sickness. It appeared that she arose as usual at 6.30 a.m., fed her fowls, and had breakfast. At about 8.30 a.m. she was bending over her sink preparing the lunch, when suddenly she was overcome with intense vertigo, vomiting following shortly afterwards. She was carried to her room, and was lying in bed, fully clothed, terrified to move or to open her eyes. Rotatory nystagmus was gross, and she was violently sick and dizzy when attempting to sit up or to move her head. There was no pyrexia, and, apart from the nystagmus, there were no abnormal findings in the central nervous system. I visited her daily for some days, during which her recovery was progressive, and on November 16 she was able to walk down the stairs unaided. I have seen her several times since then, and she has remained perfectly well.

Case 3

This patient was a man aged 61. I visited him at his home on December 17, 1951, and his syndrome was similar to that of Cases 1 and 2. He was finally seen at his home on December 24, when he was able to move about the house. He did not return to work until January 14, 1952, because of feeling "light-headed" on sudden movement. His daughter was, at the same time, confined to bed with a severe tonsillitis. Unfortunately I did not have a throat swab taken, but the case responded to penicillin injections, and the pathological state suggested infection by the haemolytic streptococcus.

Case 4

A man aged 56 went to work on January 10, 1952, feeling fit. He was writing on the blackboard, when suddenly he found that it had begun to dance before his eyes. He got into his car and drove four miles to his home. When I visited him shortly after his return he had slight rotatory nystagmus on moving his head. The next day the vertigo and the nystagmus had gone and he felt quite fit. He returned to work on January 14, and has had no recurrence of his complaint.

Case 5

A married woman aged 30 awoke on the morning of January 15, 1952, feeling perfectly well. On attempting to get out of bed she had intense vertigo. When seen by a trained nurse about two hours later the vertigo had not decreased and there was extreme nausea. She was reported