A HUNDRED YEARS AGO

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BREAST MILK: VOMITING AND DIARRHOEA

By William J Maloney, MD

The unborn child cares little for its sustenance: it enjoys the privileges of a maternal organ, and bestows on nutrition only the energy required to distribute and to utilise the elaborated food which it obtains from the mother's blood. The vital revolution of birth leaves the infant dependent upon its own efforts for the assimilation of the nutritive materials demanded by its tissues. Lest life should then cease, the mother is endowed with the power to supply the food best adapted to conserve the feeble forces of the newly born.

Yet a Gilbertian school of physicians has arisen who place breast-feeding in the same category as original sin and other evils of human heritage; and who stridently proclaim the superhuman virtues of unsterilized cow's milk; in their ministrations they analyse an infant's stool at a glance; it is given to them then to know the percentage composition of cow's milk which the infant needs; they prescribe in accordance with the revealed proportions and assert that on such a diet an infant thrives better than on its mother's milk.

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The nutrition of the young is after birth as inalienable a function of motherhood as it is before. Bunge and others have shown that the chemical composition of milk conforms to a law which prevails among all species of mammals except man: the ash of the young and the ash of its mother's milk each contains the same elements in the same ratios; thus, if the body of a kitten, pup, or colt be incinerated, the inorganic substances of the resulting ash are identical with those found in the ash of the milk of a cat, bitch, or mare, respectively, and, with the exception of iron are in the same proportions. As the composition of the ash of maternal blood or serum differs radically from that of milk, the epithelium of the mammary gland possesses the power, not only to select from the blood the mineral substances needed by the newly born, but also to secrete them in proportions precisely analogous to those in which they are built up in the economy of the offspring.

This provision for rapid growth is naturally absent in the human species. The slow physical development peculiar to man demands other qualities from maternal milk. The necessity for the maintenance of body heat overshadows the claims of tissue growth. The average newly-born infant daily needs a quantity of nutritive material sufficient to produce 300 calories. In human milk the abundance of the heat-producing elements, fat and sugar, is in striking contrast with the relative poverty in proteins and in salts; the materials needful for the life and growth of the infant are contained in ideal ratio and form; and proteolytic, amylolytic, and fat-splitting enzymes are present, which conserve to the mother a remnant of her former function of elaborating her infant's food.

A nursing mother admits hunger as the only cause of an infant's tears. The amount of milk which she supplies depends upon the demands of the infant. The child's capacity for food is limited, but the instinct to suck prevails each time the breast is offered. Hence, among nurslings, over-feeding is rife and alimentary disorders are common.

As assistant casualty officer at the Hospital for Sick Children, Great Ormond Street, London, during the winter of 1906-07, I tended many breast-fed infants suffering from vomiting and diarrhoea. Their treatment consisted of an initial dose of castor oil, and careful regulation of the amount and hours of their feeds. The mother was instructed to leave her sick child at the breast not longer than 2, 3, or 5 minutes, according to the severity of the illness; and to suckle it 9 times daily – at noon, 2, 4, 6 and 10 p.m., 2, 6, 8, and 10 a.m. In 48 hours the child returned to hospital usually greatly improved. As the symptoms abated the duration of each feed was gradually lengthened, till the infant's rate of increase of weight reached the standard demanded by its age and size. Then the child was receiving an adequate diet, which was continued unaltered as long as growth was satisfactorily maintained.

Sometimes, however, this regulation alone was insufficient to arrest vomiting. The infant, then, was weighed before and after several meals to determine the average amount of its feeds. Occasionally a strong infant was thus found to overfill its stomach from a generous milk supply, even in the restricted time prescribed for its meal. In such cases adjustment was difficult; but if the mother drew off the first of her milk the infant obtained less at each meal and the vomiting soon ceased; the child's nutrition improved also, for the milk now was not only retained, but was also of a richer quality.

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