MARCH 1962

OFFICE GYNECOLOGY

Edited by

ROGER B. SCOTT, M.D.

HOEBER MEDICAL DIVISION
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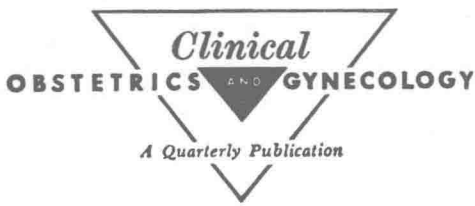

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Clinical
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THE NEWBORN

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MICHAEL NEWTON, M.D.

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GUEST EDITOR

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FOREWORD

TWO IMPORTANT QUESTIONS need to be answered in regard to the newborn. First, how may perinatal mortality and morbidity be reduced? Although maternal mortality in childbirth has decreased to the low level of 3.6 deaths per 10,000 live births in this country (1959), the infant mortality rate has not shown so sharp or steady a decline. In fact, there has been a slight upward trend in the last 3 years (26.4 deaths per 1000 live births in 1959 as compared with 26.0 in 1956). Moreover, the infant mortality rates in 10 other countries (Australia, Denmark, Finland, Iceland, Netherlands, New Zealand, Norway, Sweden, Switzerland, and the United Kingdom) are lower than that in the United States. Second, how do current methods of infant care affect physical and emotional health in later life? During the last 50 years there has been a tremendous change in the techniques of infant care in this country and in Western Europe. The development of the separate newborn nursery has resulted in the removal of the neonate from his mother for a large part of the first few days of life, in contrast to the close proximity of mother and baby under traditional care. In infant feeding, too, there has been a great change. In 1900 almost every baby was breast fed. In 1956, only 21 per cent of babies left hospitals in the United States totally breast fed, and an additional 16 per cent were receiving both breast and bottle: The remainder, 63 per cent, were being fed entirely by bottle.

The answer to these problems is as important to the obstetrician as to the pediatrician. Their investigation and eventual solution depend upon increasing understanding of the newborn in three areas. First, there is need for increased understanding of the origins of the newborn baby. For example, the diet and physical fitness of the teen-age girl may well have an important effect upon the condition in which the young mother enters her pregnancy. Preconception examinations may lead to the correction of defects before pregnancy begins. Moreover, the relationships between the care of the mother during pregnancy and labor and the immediate condition of the newborn are of great importance.

Second, wider understanding of the physiology and psychology of the newborn and of his role in the family and community is required. What, for example, are the normal variations in the pattern of neonatal response and behavior and how are they affected by newer methods of pharmacologic and other therapy given to mother and infant? And, again, what

is the exact method of spread of staphylococcal infections in the newborn, and what factors determine the resistance of individual babies?

Third, greater understanding of the newborn depends upon cooperation in seeking and applying knowledge from different disciplines. In research, the contributions of obstetrics and pediatrics remain important but will continue to need supplementation from such fields as genetics, psychology, epidemiology, and many others. In the practical management of the newborn, conditions which involve both mother and infant, such as Rh or ABO incompatibility, or even the physiologic process of lactation, too frequently fall between different specialties.

In the articles that follow, the care of the newborn is viewed from many angles. No short symposium can hope to be comprehensive. The aim, instead, has been to offer representative types of information which will give not only a broad perspective on the problems mentioned but also useful details in the management of the mother-baby unit.

MICHAEL NEWTON, M.D.

RESPIRATION AND THE CARDIOVASCULAR SYSTEM

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IN THIS ARTICLE, the normal physiology of respiration and the cardiovascular system in the newborn will be considered. The limits of normal for many phenomena in the human newborn have not been well defined. We are often dealing with a range of responses in which the distinction between health and illness is not clear. Hence, reference must occasionally be made to disease states.

Information in this field is scanty. Much may be learned from work in animals over many decades; one must be on watch for species differences, but at least some of these, arising from problems in technique, are apparent and not real. Comparison with the adult is most valuable since the newborn in the right conditions for testing exhibits many of the mature physiologic responses. Attention will be paid to some questions concerning which recent investigation suggests revision of earlier conclusions.

INTRAUTERINE OXYGEN SUPPLY

The belief which prevailed for some time that fetal metabolism is adapted to a hypoxic environment must be re-evaluated in the light of fresh observations. Barcroft was reserved at the time of his classic investigations, pointing out the extreme reactivity of the vessels of the placental circulation and the difficulty in reaching a steady state experimentally. Because the low saturation with oxygen which he found in the arterial blood of the animal fetus matched similar observations made on umbilical-cord blood of the human infant at birth, the idea that the normal conditions in which the fetus exists are hypoxic by ordinary standards took firm root. However, considerably higher values of oxygen saturation are found in animals when rigorous technical precautions are observed.

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