1987

The Year Book of PEDIATRICS®

Editors
Frank A. Oski
James A. Stockman III

1987
YEAR BOOK OF
PEDIATRICS®

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Year Book Medical Publishers, Inc.
Chicago • London

Printed in U.S.A.

International Standard Book Number: 0-8151-6572-2

International Standard Serial Number: 0084-3954

The editor for this book was Linda H. Conheady, and the production manager was H. E. Nielsen. The Editor-in-Chief for the Year Book series is Nancy Gorham.

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Introduction

The 1987 YEAR BOOK OF PEDIATRICS reflects the events described during the past year. In 1986, we witnessed the clarification of many long-standing problems in pediatrics and the identification of new and challenging clinical problems.

Otitis media continued to attract our attention. Risk factors for otitis media were defined, and the consequences of unremitting middle-ear disease in early life were elucidated. The role of IgE-mediated hypersensitivity in recurrent otitis media was discussed, and the incidence of otitis media with effusion in preschool children was established. Last year, we also were provided with long-needed information on the extrusion of grommets, a common treatment of recurrent otitis media. These topics and others regarding otitis media are summarized and commented on in this edition of the YEAR BOOK.

Another long-standing problem—sickle cell disease—continued to attract our attention. Covered in the YEAR BOOK are the clinical presentation of homozygous sickle cell disease in infants and children and the natural history and management of acute splenic sequestration in this disease, as are the etiology and clinical correlates of acute chest syndrome. New insights into sickle cell disease are found in discussions of stuttering priapism induced by stilbestrol and the clinical correlates of the in vitro adhesion of sickle cells to the endothelium.

In addition, the YEAR BOOK covers the newly recognized retinoic acid embryopathy and the vasculopathic hepatotoxicity associated with the use of E-Ferol in infants with low weight at birth. At last, an overview of cat scratch-disease, based on a study of 1,200 patients from one pediatrician's experience, was provided, and the possibility that the disease may produce osteolysis was recognized.

Last year, we recognized that persistent rubella virus infection is associated with chronic arthritis in children, that ribavirin treatment is effective in the management of respiratory syncytial virus infections in infants with underlying cardiopulmonary disease, and that penicillin therapy alters the course of streptococcal pharyngitis.

We learned more about the appropriate time to discontinue anticonvulsant therapy in children with idiopathic epilepsy, ways in which transient hyperammonemia of the newborn can be differentiated from urea cycle enzyme defects, the clinical characteristics of myocardial infarction following Kawasaki disease, the identification of infants unlikely to have serious bacterial infections, and previously unrecognized characteristics of the male genitalia in newborns.

Last year, as in the past, our knowledge expanded. Many advancements are captured and distilled for you in the pages that follow.

Frank A. Oski, M.D.

1 The Newborn

Characteristics of the Male Genitalia in the Newborn: Penis
Joseph Ben-Ari, Paul Merlob, Francis Mimouni, and Salomon H. Reisner (Beilinson Med. Ctr., Petah Tiqva, Israel)
J. Urol. 134:521–522, September 1985 1–1

All male newborns were examined prospectively during a 2-month period to determine normal characteristics of the penis. Of 274 neonates examined, 3 were excluded because of hypospadias with chordee. The newborns included were of gestational ages 36–42 weeks.

The anatomical position of the root of the penis was always in midline of the infrapubic region above the scrotum. The spontaneous (nonerectile) direction of the penile shaft was in the midline in 76.8%, to the left in 15.5%, and to the right side in 7.7%. The prepuce covered the entire glans in 244 neonates. Partial absence of the prepuce was observed in 27, and the foreskin was unretractable in 63. The mean of the greatest diameters of the meatus was 2.6 mm and the meatal direction was estimated in degrees (Fig 1–1). The median raphe was present in all newborns.

The relatively high incidence of torsion of the penile shaft is of interest and has not been reported in the literature. Only a few patients with isolated torsion of the penis have been reported. Early diagnosis and follow-up study of these neonates may be helpful in determining further treatment of this condition.

▶ In this study from Israel, the authors noted a mild degree of torsion of the penis in 2.2% of the infants studied. They have continued to observe mild torsion in about 1.5% of all apparently healthy newborn males and conclude that this is nothing more than a normal variant. It puts a new twist on life. For more on normal penile lengths and widths see Schonfeld, W.A.: *Am. J. Dis.*

Fig 1–1.—Meatal directions and respective incidence. (Courtesy of Ben-Ari, J., et al.: J. Urol. 134:521–522, September 1985. © by Williams & Wilkins, 1985.)

Child. 65:535, 1943, and Feldman, K.W., et al.: *J. Pediatr.* 86:395, 1975.—Frank A. Oski, M.D.

The Anus in the Newborn

M. El Haddad and J. J. Corkery (The Children's Hosp., Birmingham, England)

Pediatrics 76:927–928, December 1985 1–2

The size of the anus was determined in newborns of varying weights. Seven groups of neonates, ten in each group, were studied; each group was classified by weight from 1.0 kg to 1.5 kg, 1.5–2.0 kg, and so on up to 4.0–4.5 kg.

The mean anal diameter in each of the 7 groups is given in the table. The linear relationship between anal size and body weight is shown in Figure 1–2. Even if a rectal thermometer can be inserted into the anus, this does not mean that there is not a severe degree of anal stenosis present (Fig 1–3). The little finger is still the best probe to use, because it allows the physician to assess anal elasticity. For practical purposes, the formula anal diameter (millimeters) = 7 + (1.3 × weight in kilograms) is satisfactory for determining the size of the anus.

▶ We continue this mini-seminar on the perineum. It is reassuring to learn that the little finger, with the nail trimmed, is still the best probe to judge the adequacy of the anus because it averages about 10 mm in diameter and should fit the anus of the 2.0 kg infant. If the finger is too large, Hegar's sounds, which are usually available, should be used. Hegar's uterine sounds are numbered according to their external diameters, thus size 8 is 8 mm in diameter. Why speculate on the diagnosis of anal stenosis when it can easily be ruled in or ruled out without even the need for a rule?—Frank A. Oski, M.D.

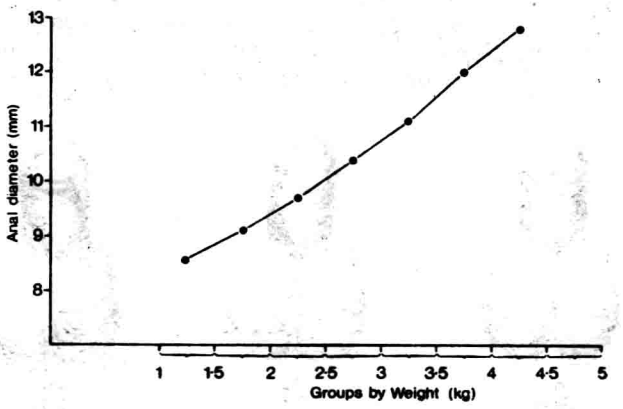

Fig 1–2.—Linear relationship between weight and anal diameter with a correlation of .960146. (Courtesy of El Haddad, M., and Corkery, J.J.: Pediatrics 76:927–928, December 1985. Reproduced by permission of Pediatrics.)

MEAN ANAL DIAMETER OF INFANTS IN EACH OF SEVEN WEIGHT GROUPS

Wt (kg)	Mean Anal Diameter (mm)
1.0–1.5	8.6
1.5–2.0	9.1
2.0–2.5	9.7
2.5–3.0	10.4
3.0–3.5	11.1
3.5–4.0	12.0
4.0–4.5	12.8

(Courtesy of El Haddad, M., and Corkery, J.J.: Pediatrics 76:927–928, December 1985. Reproduced by permission of Pediatrics.)

Fecal Bilirubin Excretion and Serum Bilirubin Concentrations in Breast-Fed and Bottle-Fed Infants

Manoel De Carvalho, Steven Robertson, and Marshall Klaus (Case Western Reserve Univ. and Michigan State Univ.)

J. Pediatr. 107:786–790, November 1985 1–3

Twenty-four breast-fed and 13 bottle-fed infants were studied during the first 3 days after birth to assess the rate of excretion of bilirubin in stools and its effect on serum bilirubin levels. Each day, breast-fed infants had serum bilirubin values higher than those in bottle-fed infants (Table 1). Breast-fed infants lost significantly more weight ($P < .001$), but there was no correlation between weight loss and serum bilirubin levels ($P > .10$). Breast-fed infants passed the first meconium stool at about the same

Fig 1–3.—Relative diameters of a rectal thermometer (4 mm) and the Hegar's sound (8 mm), which fits comfortably in the anus of a 1-kg baby. (Courtesy of El Haddad, M., and Corkery, J.J.: Pediatrics 76:927–928, December 1985. Reproduced by permission of Pediatrics.)

TABLE 1.—Total Serum Bilirubin Concentrations and Hematocrit in Breast-Fed and Bottle-Fed Infants During First 3 Days After Birth

	Serum bilirubin (mg/dl)		*Hematocrit (%)*	
	Breast	***Bottle***	***Breast***	***Bottle***
24 Hours				
Mean	6.0 ± 1.1	4.7 ± 1.5*	56 ± 6.0	56 ± 6.0
Range	3.1-7.6	1.5-7.0	45-67	47-69
48 Hours				
Mean	8.7 ± 2.1	5.8 ± 2.2*	54 ± 6.0	57 ± 6.7
Range	4.4-12.4	0.8-8	45-62	44-73
72 Hours				
Mean	9.5 ± 3.5	6.8 ± 2.0†	54 ± 7.0	53 ± 6.3
Range	4.2-16.5	2.5-9.8	42-63	46-69

*$P < .01$.
†$P < .02$.
(Courtesy of De Carvalho, M., et al.: J. Pediatr. 107:786–790, November 1985.)

time after birth as bottle-fed infants did. Bottle-fed infants, however, stooled significantly more frequently in the first 3 days after birth.

There was a wide variation in stool output and fecal excretion of bilirubin (Fig 1–4). During the first 3 days after birth, bottle-fed infants eliminated significantly more stool ($P < .001$) and excreted more bilirubin ($P < .02$). The absolute bilirubin excretion in the stool was also greater (Table 2). There was a significant negative correlation between serum bilirubin levels on the third day after birth and cumulative weight of stool

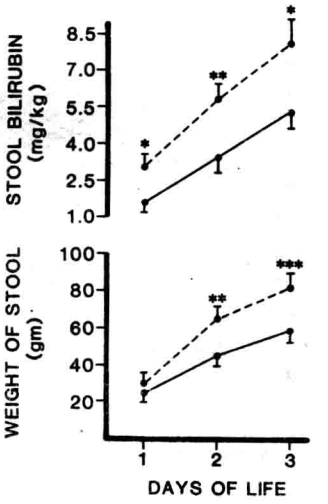

Fig 1–4.—Mean ± SEM cumulative weight of stools and fecal bilirubin excretion (mg/kg body weight) in breast-fed *(solid line)* and bottle-fed *(broken line)* infants. *$P < .02$, **$P < .01$, ***$P < .001$. (Courtesy of De Carvalho, M., et al.: J. Pediatr. 107:786–790, November 1985.)