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COVER

Working in the medium of batik, Paul Nzalamba creates images that are drawn from his native country, Uganda, and that reflect the strength, struggle, and beauty of all people, especially children and adolescents. We chose to use his "At Play" (1988) to show a modern, indigenous artist’s work that illustrates the color and joy of such artists. Mr. Nzalamba’s works are on display at his studio in Los Angeles, California. Reproduced with permission.

ANSWER KEY

Pediatrics in Review to Hold 1996 Cover Art Contest: Works by Children!

In 1996, we plan to display a piece of art by children on the covers of our 1996 issues. Four pictures will be chosen, and the cover artwork will be changed quarterly.

Rules of the Contest
1. The contest will run from January through July 1995. (Winners will be chosen in August 1995 for display in 1996. PRIZES will be awarded to each winner!)
2. The theme of each submission: Draw a picture of you (ie, the child/adolescent artist) doing your favorite thing.
3. Qualification: The artist must be either between the ages of a) 5 and 10 years or b) 11 and 15 years. (There will be two categories, by age, for submission and judging.)
4. Requirements: The picture must be in color and be reproducible to a size of 3 inches by 4 inches. FREE HINT TO ARTISTS: Think Big! Small details don’t show up as well.

Pediatricians: Please have your patients send art they would like considered to:
Sydney Sutherland,
Editorial Assistant
Pediatrics in Review
c/o The Department of Pediatrics, Box 777
University of Rochester Medical Center
601 Elmwood Avenue
Rochester, NY 14642
(716) 275-0170

PIR Quiz-CME Credit

The American Academy of Pediatrics is accredited by the Accreditation Council for Continuing Medical Education to sponsor continuing medical education for physicians.

The American Academy of Pediatrics designates this continuing medical education activity for 56 credit hours in Category 1 of the Physician’s Recognition Award of the American Medical Association.

This program has been reviewed and is acceptable for 56 Prescribed hours by the American Academy of Family Physicians. (Term of approval: beginning date January 1995. Enduring materials are approved for 1 year, with option to request renewal.) For specific information, please consult with the AAFP Office of Continuing Medical Education.

This program has been reviewed and is acceptable for 32 AOA Category 2-B CME hours by the American Osteopathic Association. For specific information, please consult with the AOA Department of Education.

In addition, this course has been approved for 56 NAPNAP contact hours. An individual requesting contact hours should submit proof of participation and verification of PREP accreditation to the NAPNAP National Office.

The questions for the PIR quiz are located at the end of each article in this issue. Each question has a SINGLE BEST ANSWER. To obtain credit, record your answers on the PIR Quiz Card found in the January issue and return the card to the Academy. (PREP group participants will receive the PIR Quiz Card and Self-Assessment Credit Reply Sheet under separate cover.) To receive CME credit on the 1995 annual credit summary, you must be enrolled in PREP or subscribe to Pediatrics in Review and return the PIR Quiz Card by February 28, 1996. PIR Quiz Cards received after this deadline will be recorded in the year they are received, with cards from the 1995 PIR journals accepted through December 31, 1997.

The PIR Quiz Card is bound into the January issue. Complete the quizzes in each issue and send to: American Academy of Pediatrics, PREP Office, PO Box 927, Elk Grove Village, IL 60009-0927.

PREP EDUCATION AWARD:
The PREP Education Award provides recognition and support for those Academy Fellows and Candidate Fellows who participate in PREP. Individuals who qualify for the PREP Education Award will receive their award automatically. To be eligible for this award, a Fellow or Candidate Fellow of the American Academy of Pediatrics must receive, over a 3-year period, 150 hours of Category 1 CME credits from the following sources:

- 75 hours must be obtained from participation in PREP (the Self-Assessment Exercise and/or Pediatrics in Review) or PREP: The Course.
- The balance (75 hours) of the 150 CME credits may be obtained through other programs sponsored or approved by the Academy. These include: the AAP Spring Session or Annual Meeting, CME courses, Academy-approved courses, the Pediatric UPDATE audiocassette tape program, or AQUIP.

The correct answers to the questions in this issue appear on the inside front cover.
Bottani A, Xie Y, Binkert F, Schinzel A. A case of Hirschsprung’s disease with a chromosome 13 microdeletion, del (13)(q32.3q33.2); potential mapping of one disease locus. Hum Genet. 1991;87:748–750


Taxman TL, Yulish BS, Rothstein FC. How useful is the barium enema in the diagnosis of infantile Hirschsprung’s disease? AJDC. 1986;140:881–884


**GASTROENTEROLOGY**

Hirschsprung Disease

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**PIR QUIZ**

1. Gina, a newborn female, recently was started on formula feedings. Examination at birth was normal. She now has developed bilious vomiting. Gastrointestinal contrast studies were ordered to help determine the cause of intestinal obstruction. Of the following diagnoses, which is the most difficult to demonstrate on radiologic evaluation?

   A. Annular pancreas.
   B. Hirschsprung disease.
   C. Jejunal atresia.
   D. Meconium ileus.
   E. Small left colon syndrome.

2. Billy is a 6-month-old male who has Down syndrome. He was admitted with a history of abrupt onset of foul-smelling diarrhea and fever. He was delivered at term and has been breastfed. There is no illness in the family. Physical examination reveals a slightly dehydrated infant whose abdomen is distended. You suspect Hirschsprung disease. Which of the following clues would be most useful in excluding the possibility of Hirschsprung disease?

   A. A history of intermittent diarrhea and constipation.
   B. Normal anorectal manometry findings.
   C. Passage of stool every 4 days.
   D. Passage of meconium within the first 48 hours after birth.
   E. Plain abdominal radiograph suggestive of intestinal obstruction.

3. Ryan is a 9-month-old male who was delivered at term. He was breastfed for 6 months, then two formula feedings a day were begun. Rice cereal was started at 6 months, and other cereals and strained vegetables have been introduced. He had constipated stools as a newborn, and the problem has increased in severity. You suspect Hirschsprung disease on that basis and would like to confirm the diagnosis. The diagnosis of Hirschsprung disease should be made on the basis of:

   A. Bowel pattern.
   B. Family history.
   C. Physical examination.
   D. Radiologic examination.
   E. Tissue biopsy.

4. Julia is a 12-month-old female who was delivered at term. Examination at that time was normal. She was breastfed for the first 9 months. Cereal feedings were started at 6 months, and strained vegetables were started by 8 months. She was constipated by the age of 4 months and passes small, firm stools about every fourth day. Her abdomen is distended from time to time. Recurrent vomiting has not been a problem. You have established the diagnosis of Hirschsprung disease. Effective treatment of this disease consists of:

   A. Bowel training exercises.
   B. Dietary management.
   C. Enemas as needed for decompression.
   D. Immediate surgical therapy.
   E. Use of laxatives as needed.
program reduced delinquent behavior, arrests, and especially institutionalization significantly. The data indicate that the program may result in 33 fewer institutionalizations per 100 hyperactive youths treated. Compared with a $3000 annual cost for a multimodality treatment program, the cost of institutionalization is approximately $30 000 per year. This savings includes neither the savings from decreased costs of vandalism and theft and court costs that occurred nor the human grief caused by delinquency.

Jones and Offord describe another project that provides skill-development training to the disadvantaged youth of a publicly supported housing complex. Antisocial behaviors were significantly reduced, and a cost-benefit analysis indicated that the potential savings greatly exceeded the cost of the program.

The prevention of delinquency and the resulting cost benefits by such programs are impressive. Community pediatricians should be the leaders in their development and implementation.

SUGGESTED READINGS
Kroupa SE. Perceived parental acceptance and female juvenile delinquency. Adolescence. 1988;23:171
Moffitt TE. Juvenile delinquency and attention deficit disorder: boys' developmental trajectories from age 3 to age 15. Child Dev. 1990;61:893

PIR QUIZ
5. All of the following statements about juvenile delinquency are true, except:
A. 10- to 12-year-olds run away as often as do 17-year-olds.
B. For the same crime, the arrest rate for African-American youth is seven times greater than for white youth.
C. Males receive harsher treatments for status offenses.
D. More than 50% of both status offenders and criminal delinquents have been maltreated.
E. Sugar does not cause reactive hypoglycemia in delinquents.

6. All of the following statements are true, except:
A. Attention deficit hyperactivity disorder (ADHD) is a risk factor for later criminality.
B. High intelligence quotients may be protective against the development of delinquency.
C. Methylphenidate is the treatment of choice for hyperactive males.
D. More than 70% of delinquent youth have learning disabilities.
E. Of boys diagnosed as having ADHD and followed in adolescence, 50% were diagnosed as having conduct disorders.

7. The categories of health problems associated with delinquency include all the following except:
A. Cigarette and alcohol abuse.
B. Dental problems.
C. Injuries.
D. Seizure disorders.
E. Sexually transmitted diseases.

8. Family history of each of the following is associated with delinquency except:
A. Alcoholism.
B. Criminality.
C. Marital problems and parental separation.
D. Middle income.
E. Punitve disciplinary practices.

9. All the following form the cluster of the early warning signs for delinquency except:
A. Aggressive behavior.
B. Cruelty to animals.
C. Lying, petty stealing.
D. Oppositional behavior.
E. Schizophrenia.

**SUGGESTED READING**


Everett AD, Koch WC, Saulsbury FT. Failure to thrive due to obstructive sleep apnea. *Clin Pediatr.* 1987;26:90–92


**PIR QUIZ**

10. You are referred a previously well, 4-year-old girl who has a 6-month history of persistent daytime drowsiness. The parents report that their daughter’s sleep during this time has been characterized by loud snoring interspersed with periods of frightening silence. On physical examination, you are most likely to detect:
   A. Cyanosis of lips and nailbeds
   B. Exaggerated palmocentric component of S2
   C. Hyponasal voice
   D. Inspiratory crackles
   E. Morbid obesity

11. A 5-year-old boy hospitalized for impressive tonsillitis accompanying Epstein-Barr virus infection begins to display chest wall retractions and increasing apprehension. Despite provision of oxygen supplementation by face tent, pulse oximetry reveals an arterial oxygen saturation of 90%. Of the following therapeutic options, the most appropriate choice at this time is:
   A. Emergency tonsillectomy
   B. Emergency tracheostomy
   C. Nasopharyngeal airway placement
   D. Nasotracheal intubation
   E. Orotracheal intubation

12. A mother complains that her 5-year-old daughter has had impaired speech ever since she underwent adenotonsillectomy 1 year ago. You readily document that the girl’s speech is hypernasal. The most likely explanation is:
   A. Adenoidal remnants
   B. Frank congenital cleft palate
   C. Iatrogenic cleft palate
   D. Submucous cleft palate
   E. Vocal cord paralysis

13. Which one of the following children is the most appropriate candidate for palatine tonsillectomy?
   A. A 5-year-old boy who has had three bouts of confirmed group A streptococcal tonsillitis in the past year
   B. A 5-year-old boy who has had five episodes of sore throat in the past year
   C. A 5-year-old girl whose tonsils “kiss,” but who is otherwise asymptomatic
   D. A 3-year-old boy who has persistent bilateral otitis media with effusion
   E. A 3-year-old girl who has tonsillar hypertrophy and documented obstructive sleep apnea

14. You have recommended palatine tonsillectomy for an otherwise healthy 5-year-old boy who has obstructive sleep apnea. The mother asks you to outline potential complications of the procedure. The most common significant complication this boy is likely to encounter is:
   A. Aspiration pneumonia
   B. Dehydration
   C. Hemorrhage
   D. Postobstructive pulmonary edema
   E. Velopharyngeal insufficiency.
IN BRIEF

Neck Injury


Although rare in pediatrics, cervical spine injuries still are associated with serious morbidity, disability, and mortality. Many of these injuries are exacerbated by inadequate neck immobilization or improper manipulation. Thus, the physician should be aware of which children are at risk for cervical spine injury and how to assess these patients properly.

To find clinical markers that identify children who actually have cervical spine injuries, Rachelsky et al reviewed 2133 cervical spine radiographs obtained in pediatric patients during a 7-year period. Of these children, 25 (1.2%) had abnormalities confirmed on radiographs. The incidence of injury increased with age; only four of the children who had cervical spine injuries were less than 8 years old. Vehicular accidents, sports, and playground injuries accounted for almost 75% of confirmed injuries. In particular, diving accidents were responsible for cervical spine fractures in five children. In this study, the authors also found that no single clinical predictor had a sensitivity of 100%, but clinical assessment consisting of either a complaint of neck pain or involvement in a vehicular accident with head trauma would have identified all 25 cases of cervical spine injuries correctly.

Because the vertebral column in a child is more elastic than in adults, significant trauma may deform the spine and injure the spinal cord without fracturing or disrupting the surrounding bones and ligaments. Pang and Pollack describe the clinical profiles of 55 children who had spinal cord injury without radiographic abnormalities (SCIWORA). Of the 22 children who had profound neurologic injuries, all but one was younger than 8 years. This supports the suggestion that the upper cervical spine in young children has a great degree of physiologic mobility and, therefore, is susceptible to SCIWORA. Most anatomic features of the cervical spine assume adult character by the age of 8 years.

Identifying a cervical spine injury in a child can be very difficult and often results in a delay in diagnosis. Unfortunately, missing or not suspecting a spinal cord injury may lead to improper handling of a neck injury, thus increasing the risk of secondary neurologic injury or death. Orenstein et al discuss the causes that contributed to the delay in diagnosing cervical spine injuries in nine children. In five children, physician errors were made in interpreting radiographs, in three children the initial examination was delayed, and in one case, the obtaining of radiographs was delayed.

Because cervical spine injuries can cause significant morbidity and mortality, the physician must be acutely aware of which children are at risk for these injuries. Because diagnosis sometimes may be difficult, any child who has a spinal cord injury should be immobilized properly and transferred to an emergency department that has experienced personnel.

Jeffrey R. Avner, MD
Assistant Professor of Pediatrics
Albert Einstein College of Medicine
Bronx, NY

PIR QUIZ

15. Which of the following statements best describes grade III vesico-ureteral reflux?
   A. Dilatation of collecting system; blunted fornices.
   B. Early dilatation of collecting system; sharp fornices.
   C. Filling of a non-dilated ureter and a non-dilated renal pelvis.
   D. Massive dilatation and tortuosity of collecting system.
   E. Retrograde flow into a non-dilated ureter.

16. Any child of either sex should undergo radiographic evaluation for his or her:
   A. First documented urinary tract infection.
   B. Second documented urinary tract infection.
   C. Third documented urinary tract infection.
   D. Fourth documented urinary tract infection.
   E. Fifth documented urinary tract infection.

17. The diagnosis of vesicoureteral reflux is made by:
   A. Computed tomographic scan of the abdomen.
   B. Cystoscopy.
   C. Intravenous pyelography.
   D. Renal ultrasonography.
   E. Voiding cystourethrogram.

18. What is the major advantage of radioisotope voiding cystourethrogram compared with radiographic voiding cystourethrogram?
   A. Anatomy of the urethra is outlined better.
   B. Bladder distention may be seen more readily.
   C. Diverticuli may be seen more readily.
   D. Ovaries are exposed to less radiation.
   E. Ureteroceles may be seen more readily.

19. Patients who have symptoms of or findings of bladder irritability should avoid bladder irritants in the diet. Which of the following is not a bladder irritant?
   A. Caffeinated substances.
   B. Carbonated beverages.
   C. Chocolate.
   D. Citrus juices.
   E. Cranberry juice.


PIR QUIZ

20. You are considering the diagnosis of conversion reaction in a patient who is brought by both parents to your office. He is 10 years old, now healthy, but has had a variety of routine illnesses in the past. He is “popular, with good athletic skills.” “Not a care in the world, an ‘A’ student, and we have a relaxed and wonderful family life,” says the mother. He describes his symptoms involving several organ systems clearly and dramatically. Your impression is that the patient does not demonstrate organic disease. Your approach would include all of the following except:
A. Avoidance of extensive laboratory and other diagnostic studies.
B. Careful review of history, including family, personal, and social.
C. Discussion of complaints, problems, and physical and laboratory findings with parents and patient.
D. Exclusion of diagnosis of conversion because of age, sex, and apparent success in school and family support.

21. After taking a careful history and physical examination, you feel that the diagnosis is conversion. The family is hesitant. You discuss the differential diagnosis with the family, which includes all of the following except:
A. Attention deficit hyperactivity disorder.
B. Hypochondriasis.
C. Malingering.
D. Munchausen syndrome.
E. Panic disorder.

22. Treatment of this patient will include all of the following except:
A. Allowing the patient to stay home from school and recover rather than being embarrassed by staying in school, even in the nurse’s office, if necessary.
B. Avoiding the use of medication unless there are specific objective indications.
C. Discussing alleviation of symptoms rather than promising complete removal.
D. Having relatively frequent examinations and telephone contact.

23. After working with this family and patient, you feel that the problem is handled appropriately in a pediatric office for the following reasons except:
A. The diagnosis can be made with almost absolute diagnostic precision.
B. You can handle this problem of presumed psychiatric origin because you can provide broad-based, long-term pediatric management.
C. You can spare the patient and family unnecessary referral to subspecialists and/or a tertiary care center.
D. You discuss manipulative and other behavioral concerns as part of regular sick and well pediatric care.

24. Concerning conversion reactions, all of the following are true except:
A. Comorbidity with depression is rare.
B. Ethnic, cultural, religious, and/or family factors may be significant.
C. Incidence after puberty is diagnosed two to three times more often in girls but may be nearly gender-equal.
D. Incidence is increased after physical and sexual abuse.
E. Symptomatology often results in referral to subspecialists.