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COVER

"Sara Handing a Toy to the Baby" was painted by Mary Cassatt (1845–1925). Cassatt, an American artist, was the daughter of a wealthy Philadelphia businessman. She went to Paris to study and never returned. Most of her paintings are of mothers and children, although she herself never married. This lovely painting shows an older sibling handing a toy to her younger brother. We all know that sibling relations are never this serene at all times, but we can always encourage the sharing and love so beautifully shown here. (This painting is reproduced with the permission of the Hill-Stead Museum, Farmington, CT.)

ANSWER KEY

**RUBELLA HI TITERS (IgG)**

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**Comment**
- Passive transfer of antibody
- No congenital rubella
- Congenital rubella

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**PIR QUIZ**

1. A true statement regarding laboratory techniques useful for diagnosing bacterial pneumonia is:
   - A. Accurate diagnosis of chlamydial infections requires that purulent material be obtained.
   - B. *Chlamydia pneumoniae* infections are best diagnosed by rapid antigen detection methods.
   - C. Rapid antigen detection methods for diagnosing *Chlamydia trachomatis* infections are at least as sensitive as culture.
   - D. Serologic techniques are less reliable than culture for diagnosing *Mycoplasma pneumoniae* infection.
   - E. Urine antigen detection techniques for *Haemophilus influenzae* are especially helpful because of high specificity.

2. Of the following viruses, the one for which antibody titer is the preferred method of diagnosis is:
   - A. Cytomegalovirus
   - B. Enterovirus
   - C. Herpes simplex virus
   - D. Human herpesvirus type 6
   - E. Respiratory adenovirus

3. A true statement regarding the use of antibody titers for viral diagnosis is:
   - A. Currently, there is no serologic test to diagnose parvovirus B19 infection.
   - B. Given the sensitivity of current methods, serodiagnosis is no longer fully dependent on the immune competence of the host.
   - C. Specific Epstein Barr virus antibody tests are most useful in children less than 5 years of age.
   - D. The time required to diagnose arboviral infection makes the technique less valuable for the individual patient, but may provide useful epidemiologic information.
   - E. A virus-specific immunoglobulin G (IgG) test is more likely to influence the diagnosis of acute infection than is a virus-specific IgM test.

4. A true statement regarding the diagnosis of pediatric pneumonia syndromes is:
   - A. Bacterial culture of nasopharyngeal secretions in a 2-year-old girl who has lobar consolidation is likely to provide useful diagnostic information.
   - B. Collection of nasopharyngeal secretions for viral antigen detection and culture is inappropriate in a febrile 2-month-old infant who has pneumonia and severe respiratory distress.

5. A true statement regarding the diagnosis of perinatal infections is:
   - A. An elevated cord blood level of virus-specific serum IgG is diagnostic of congenital infection.
   - B. For best results, specimens for viral culture should be frozen in a regular freezer before transport.
   - C. Human immunodeficiency virus infection characteristically manifests clinical findings shortly after birth.
   - D. Immunoglobulin G (IgG) titers are important for the rapid diagnosis of acute perinatal viral disease.
   - E. In an acutely ill neonate who has both pneumonia and hepatitis, the differential diagnosis should include herpes simplex virus and enterovirus infection.

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**INFECTION DISEASE Laboratory Diagnosis**


Serious symptoms of failure to thrive, with few stools and infrequent voidings, deserve a full evaluation.

SUGGESTED READING

ABSTRACT

New Manifestations of Rheumatic Fever


A resurgence of acute rheumatic fever (ARF) occurred in the mid-1980s, as evidenced by several reports of outbreaks in various regions of the United States. Around the same period, some reports described a dramatic increase in the virulence of Group A Beta-hemolytic Streptococcus (GABHS), resulting in fulminant disease in both adults and children. Although several strains of GABHS were implicated in these outbreaks, the most common isolate identified was the mucoid group A type 18 strain (M-18).

In contrast to the pre-World War II classic ARF, which was described in overcrowded, indigent urban populations, the current outbreak was noted predominantly in suburban, medium-sized, middle class families who had access to medical care. Also, the patients affected by the newer ARF reported either a mild pharyngitis or no pharyngitis preceding the diagnosis. However, the clinical manifestations of ARF did not change as substantially as the epidemiology of the disease.

The diagnosis of ARF is made on the basis of the Revised Jones Criteria (Major and Minor Manifestations) plus supporting evidence of streptococcal infection. The major manifestations include: 1) carditis, 2) polyarthritis, 3) chorea, 4) erythema margination, and 5) subcutaneous nodules. Minor manifestations of the Jones Criteria include: 1) previous ARF or rheumatic heart disease, 2) arthralgia, 3) fever, 4) an elevated erythrocyte sedimentation rate, 5) a positive C-reactive protein, 6) leukocytosis, and 7) a prolonged PR interval or other electrocardiographic changes. Either two major criteria or one major and two minor criteria are required to make the diagnosis of ARF in the presence of supporting evidence of a preceding streptococcal infection (eg, elevated titer of antistreptococcal antibodies, positive throat culture for GABHS, or recent scarlet fever).

Carditis and arthritis remain the most commonly encountered clinical manifestations, occurring in more than 50% of the recent outbreaks. Mitral insufficiency and aortic insufficiency are the most common murmurs associated with ARF. While the classic ARF was associated with a migratory polyarthritis, some recent cases have exhibited arthritis of an additive nature. The appearance of a new murmur of mitral insufficiency or aortic insufficiency is highly suggestive of carditis. With the advent of echocardiography, the clinician’s ability to detect the presence of carditis has been enhanced greatly.

Therapy for ARF includes eradication of any persistent streptococcal pharyngitis and prophylaxis against recurrent infections. Salicylates are still the cornerstone of therapy and usually produce a dramatic improvement in symptoms of arthritis within 24 to 36 hours. Many authorities recommend the addition of an antiinflammatory corticosteroid regimen in patients who have severe carditis.

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PIR QUIZ

6. One of the many special qualities of human milk when compared with formula is:
A. Increased methionine content
B. Increased phenylalanine content
C. Lower cysteine content
D. Lower protein content
E. Lower taurine content

7. Strict vegetarian mothers are at risk for nutritionally inadequate breast milk, which is deficient in:
A. Antibodies
B. Vitamin A
C. Vitamin B12
D. Vitamin C
E. Vitamin E

8. Which of the following statements regarding colostrum is correct?
A. It is high in fat content.
B. It is low in lactose content.
C. It is low in protein content.
D. It is replaced by mature milk within 48 to 72 hours.
E. It provides enzymes to stimulate gut maturation.

9. Epidemiologic studies provide provocative information regarding possible immunologic protection of breast feeding against each of the following except:
A. Childhood onset diabetes
B. Celiac disease
C. Crohn disease
D. Juvenile rheumatoid arthritis
E. Lymphoma

10. Which of the following would be a contraindication to breast feeding in the United States?
A. Allergic disease in the family
B. HIV infection
C. Infantile diarrhea
D. Marijuana smoking
E. Maternal use of ibuprofen

11. Which of the following is the most common cause of inadequate breast milk supply?
A. Lack of proper instruction
B. Maternal vegetarian diet
C. Nursing on demand
D. Sore nipples
E. Substitute bottle feedings
few minutes up to a maximum of 300 mcg/kg until heart block is achieved. The usual effective dose is 75 to 150 mcg/kg. Most patients report a brief sensation of flushing, dyspnea, or chest pain with the administration of adenosine. Some patients experience extreme anxiety or nausea, and a few develop bronchospasm. The effectiveness of adenosine may be attenuated in patients taking theophylline preparations, while it may be increased in patients taking dipyridamole or who have reactive airways disease.

The major advantages of adenosine are the short duration of action and the lack of side effects as the myocardial suppression associated with beta blockers and verapamil. Because of its short duration of action, however, it is not useful for preventing the recurrence of PSVT. Patients in whom PSVT recurs following conversion with adenosine may require the addition of a longer acting agent, such as digoxin, verapamil, a beta blocker, or procainamide.

If adenosine is not available, verapamil (0.1 to 0.3 mg/kg IV over 2 to 3 minutes, not to exceed 5 mg) can be used, for it has a well-established role in the acute termination of PSVT. However, because verapamil can be associated with hypotension and bradycardia, calcium chloride (20 mg/kg IV), isoproterenol, and volume expanders must be available immediately at the time of its administration. Calcium gluconate and calcium gluconate cannot be substituted for calcium chloride in this setting because the calcium ion in these compounds is not immediately available. Verapamil is contraindicated in children less than 12 months of age and in the presence of congestive heart failure, hypotension, or shock.

Following conversion to normal sinus rhythm, an ECG should be obtained and a physical examination performed. If either is abnormal, a pediatric cardiologist should be consulted. A child who has electrocardiographic evidence or a history of Wolff-Parkinson-White syndrome should not be treated with digoxin except under the care of a pediatric cardiologist. Otherwise, the child should be started on a maintenance oral dose of digoxin (0.01 mg/kg per day up to a maximum of 0.125 mg/day). Follow-up with a pediatric cardiologist for elective screening echocardiography is important because a small fraction of children who have PSVT have associated cardiac lesions (eg, Ebstein anomaly, corrected transposition, etc.)

In summary, the smooth and successful management of SVT requires a careful evaluation to confirm the diagnosis and an understanding of the underlying mechanism. In the hemodynamically stable patient, vagal stimulation maneuvers followed by digoxin usually are the only interventions required. Adenosine has become accepted as a safe, effective alternative to verapamil or cardioversion in the initial management of this disorder.

**SUGGESTED READING**


O'Connor BK, MacDonald D II. What every pediatrician should know about supraventricular tachycardia. Pediatr Ann. 1991;20:368-376

covery program is becoming popular. For this reason, physicians should be aware of its contraindications and how it is being used to treat nicotine addiction.

The literature surrounding the use of scopolamine as treatment for nicotine addiction is scanty and has methodologic deficiencies. In 1970, it was reported that mecamylamine and scopolamine reduced puffing in monkeys. A medical protocol using scopolamine was developed later and piloted in humans. Nicotine-dependent patients are treated with one injected dose of scopolamine, atropine, and chlorpromazine. The anticholinergic injection is supplemented with 2 weeks of an oral combination medication containing an anticholinergic and a benzodiazepine. The pilot study reported that 40% of the 500 smokers treated with the anticholinergic protocol remained nicotine-free at the end of 1 year. One commercial smoking-cessation program has been using this anticholinergic protocol for more than 6 years and has treated thousands of patients in dozens of locations across America. The anticholinergic protocol should not be administered by physicians inexperienced with the medicines or the procedure.

A simplified version of the anticholinergic protocol outlined previously has been tried and has revealed that transcutaneous scopolamine alone eliminates nicotine craving and reduces withdrawal symptoms. One study found 87% of 31 subjects treated with transdermal scopolamine to remain nicotine-free at the end of 6 months. Other uncontrolled studies report a decrease in nicotine craving and withdrawal symptoms after the use of transcutaneous scopolamine. Patients who have been assessed medically and found appropriate for scopolamine treatment apply one 1.5-mg transcutaneous patch to the mastoid area for 3 additional days. Transcutaneous scopolamine is not recommended for use beyond 6 days and is contraindicated in patients who are hypersensitive to scopolamine or who have glaucoma. Scopolamine use should be avoided in patients who are recovering from alcohol or drug addiction or have mental disorders, cardiac problems, or intestinal problems. Scopolamine usually is reserved for the difficult-to-treat nicotine addict or for those who have had multiple relapses and is used only in the short term.

SUGGESTED READING
Schneider N. How to Use Nicotine Gum & Other Strategies to Quit Smoking. New York, NY: Pocket Books; 1988
Warburton DM. The functions of smoking. In:
ABSTRACT

Infant Walkers


Many parents view infant walkers as being safe sources of infant stimulation and activity. The infants can explore their environment independently and are entertained for hours. Unfortunately, walkers often substitute for vigilant parental supervision. Parents also believe that infant walkers stimulate early independent walking. However, mobility is increased greatly well before the infant reaches the normal developmental stages necessary for cruising in a walker, and this increased mobility places the infant in many perilous situations not anticipated by parents. More than 70% of infants, mostly between 5 and 12 months of age, use infant walkers. Almost 50% of these children are involved in a walker-related accident.

Common injuries include those from falls down stairs, tipping over, and finger entrapment. Most walker-related accidents occur with one or both parents in the home. Fifty percent of all falls down stairs occur in homes that have stairwell gates. The probability of an accident increases with the amount of time spent in a walker. Falls occur in fewer than 30% of infants who spend less than 2 hours a day in a walker and in 55% of those who spend greater than 2 hours daily in a walker. Many of these injuries are minor and not brought to medical attention.

Infant walker-related accidents from falls down stairs can cause severe injuries. In a retrospective review of children under 2 years of age seen in the Mayo Clinic for head trauma, Partington found that infant walker use was the third most common mechanism of injury after falls from furniture and falls down stairs. A total of 47.4% of these infants sustained skull fractures, and one patient required treatment for posttraumatic meningitis.

There is no evidence to support parental beliefs in early ambulation due to infant walkers. Infants use different sets of muscles for walkers and for ambulation. Walkers actually may delay walking in some children who have cerebral palsy.

The combination of decreased supervision and increased mobility makes the infant walker a very dangerous device. Parents need to be cautioned about the likelihood of walker-related injuries, especially among unsupervised infants in walkers for long periods of time. Education also should stress that walkers do not promote independent walking and are not safe babysitters. Parents then can make informed decisions about appropriate infant walker use.

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Comment: "Unsafe at any speed" is what I tell my patients' parents, and we actively discourage the use of walkers in our practice. Given the significant doubts about their impact on development (which I have felt for a long time) and the large number of associated injuries, it is not really surprising that the American Academy of Pediatrics feels very strongly about discouraging the use of infant walkers. Caring for just one child who comes into the office or emergency room after having fallen down a flight of stairs in a walker and sustaining a significant head injury is enough to convince anyone that exposing young babies to this risk simply is not worth it. I do feel, however, that more vigilance must be taken on the part of all organizations involved with children and their environment. These injuries are entirely preventable.

Steven P. Shelov, MD
Abstracts Editor