FIG 23-8 Clubbing of the fingers.

Hypercyanotic spells, also referred to as **blue spells** or **tet spells** because they are often seen in infants with tetralogy of Fallot, may occur in any child whose heart defect includes obstruction to pulmonary blood flow and communication between the ventricles. The infant becomes acutely cyanotic and hyperpneic because sudden infundibular spasm decreases pulmonary blood flow and increases right-to-left shunting (the proposed mechanism in tetralogy of Fallot). Spells, rarely seen before 2 months of age, occur most frequently in the first year of life. They occur more often in the morning and may be preceded by feeding, crying, defecation, or stressful procedures. Because profound hypoxemia causes cerebral hypoxia, hypercyanotic spells require prompt assessment and treatment to prevent brain damage or possibly death.

Persistent cyanosis as a result of cyanotic heart defects places the child at risk for significant **neurologic complications**. Cerebrovascular accident (CVA; stroke), brain abscess, and developmental delays (especially in motor and cognitive development) may result from chronic hypoxia.

Diagnostic Evaluation

Cyanosis in a newborn can be the result of cardiac, pulmonary, metabolic, or hematologic disease, although cardiac and pulmonary causes occur most often. To distinguish between the two, a hyperoxia test is helpful. The infant is placed in a 100% oxygen environment, and blood parameters are monitored. A PaO_2 of 100 mm Hg or higher suggests lung disease, and a PaO_2 lower than 100 mm Hg suggests cardiac disease (Park, 2014). An accurate history, a