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Gastroesophageal Reflux in Infants and Children

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Gastroesophageal Reflux in Infants and Children

Erwin D. Sanchez, MD, and David A. Gremse, MD

INTRODUCTION

Gastroesophageal reflux (GER) is the term used to describe the passage of gastric contents into the esophagus. GER in infants is a common, self-limited process that usually resolves by 12 months of age. Vomiting is the most common presenting symptom, occurring in 50% of all infants.¹ The incidence of recurrent vomiting peaks at age 4 months, when it occurs in 67% of infants, then declines to affect only 5% to 10% of infants at age 12 months.¹ Although regurgitation associated with simple GER is common in healthy infants, a smaller proportion of infants will develop complications of GER (eg, esophagitis) that produce symptoms of gastroesophageal reflux *disease* (GERD). The clinical presentation of normal regurgitation in infants is compared to that of GERD in infants and children in **Table 1**.

The prevalence of GERD, as documented by distal esophageal pH monitoring in a population of unselected infants, is estimated to be 8%.² The severity of symptoms varies widely, from isolated regurgitation not associated with any other symptoms to irritability and persistent emesis to persistent emesis. The high incidence of GER during infancy results in GERD occurring in association with other problems of infancy, such as failure to thrive, persistent respiratory problems, and apnea. In some instances, GERD is causally related to these other symptoms, but in many other cases, respiratory problems and apnea occur simultaneously with GER merely by chance.

The “GERD iceberg” has been used to compare the epidemiology and clinical presentation of GERD in adults and infants (**Figure 1**). The bottom of the iceberg represents the most common symptoms of mild GERD, whereas the tip represent patients with more severe disease requiring subspecialty evaluation.

CLINICAL PRESENTATION AND PROGNOSTIC FEATURES

INITIAL CASE PRESENTATION

A 2-month-old boy has excessive “spitting up” after

feeding. His emesis does not contain blood or bile. He is irritable after eating and awakens frequently at night. The infant is exclusively formula-fed, he is not on any medications, and his past medical history is unremarkable. His weight is at the tenth percentile, and the results of physical examination are normal except for diaper dermatitis.

- **What is the most appropriate initial work-up and management of this patient?**

CLINICAL FEATURES OF GASTROESOPHAGEAL REFLUX

It is useful to distinguish the manifestations of GERD in infants (younger than 1 year) from those in children older than 1 year and adolescents. The incidence of GERD is reportedly lower in breast-fed infants compared to formula-fed infants.³ The clinical presentation of GERD in infants may include symptoms of regurgitation, coughing, choking, upper respiratory symptoms, and lower respiratory symptoms.⁴ Symptoms of GERD in preschool children include intermittent vomiting, abdominal pain, unexplained nighttime awakening, feeding resistance, or respiratory symptoms. Older children have a clinical presentation similar to that of adults, which may include heartburn, epigastric pain, chest pain, nocturnal pain, dysphagia, odynophagia, and water brash.

Regurgitation is the most common presentation of infantile GER⁵ but occurs rarely in older children and adults. The character of regurgitation varies from drooling of gastric contents to effortless emesis and occasionally to projectile vomiting.⁵ Infants with significant regurgitation or emesis must be evaluated for possible anatomic, metabolic, infectious, or neurologic causes.

Because infants cannot talk, crying and irritability or arching of the back may be the only indications of esophagitis, which is diagnosed by esophagoscopy with biopsy.⁶ Children with esophagitis may develop an aversion to food as they begin to associate eating with pain.⁷ This aversion, together with the parents’ resistance to feeding infants who are repeatedly regurgitating and substantial nutrient losses resulting from emesis, all contribute to malnutrition. Although malnutrition occurs infrequently as a complication of GERD in infants, its presence is more likely to develop in infants with esophagitis. Erosive esophagitis can lead to chronic blood loss with anemia,