

Gastroesophageal scintigraphy in children: a comparison of posterior and anterior imaging

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The purpose of this study was to compare the posterior dynamic imaging with the anterior imaging in the evaluation of children with gastroesophageal reflux (GER). Sixty-eight children (26 female, 42 male; age range 4 months to 7 years, median 21 months) were studied. After 4-hour fasting, all the subjects underwent gastroesophageal scintigraphy. Synchronous dynamic imaging in the anterior and posterior projections was performed with the subject in the supine position with a dual-head gamma camera equipped with low-energy general-purpose collimators at a rate of 30 s/frame for 40 min. The anterior and posterior images were visually evaluated for the presence of gastroesophageal reflux by two nuclear medicine physicians. The anterior and posterior images were correlated by Pearson correlation analysis, and inter-observer variability was evaluated by paired t-test and kappa value. There was a good correlation between the two projections with r-values of 0.906–0.990. The inter-observer agreement for interpretation of the anterior and posterior imaging was excellent (k: 0.83). In conclusion, anterior and posterior dynamic imaging showed excellent correlation in detection of GER in children. Posterior imaging is superior to anterior imaging in that it is more comfortable, and it reduces motion artifacts, especially for infants and anxious children; thus, it may be preferred over anterior imaging.

Key words: gastroesophageal reflux, gastroesophageal scintigraphy, posterior imaging, pediatrics