H-type Tracheoesophageal Fistula Detected by Radionuclide Salivagram

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Congenital H-type tracheoesophageal fistula is a rare anomaly in infants and the early diagnosis of this disorder is still a challenge to pediatricians due to scarcity, non-specific symptoms and lack of a single diagnostic examination. We report

the case of a 3-month-old baby with choking and recurrent aspiration which finally turned out to be a tracheoesophageal fistula without esophageal atresia (H-type) by radionuclide salivagram (Fig. 1).

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Fig. 1 A 3-month-old baby girl with choking and recurrent aspiration was referred to our hospital for the surgical correction of an alleged laryngeal diverticulum. She was a full-term baby born by Cesarean section without any perinatal complication. One month ago, she underwent a chest computed tomography (CT) scan in the local hospital owing to chief complaints above. Her symptoms seemed to originate from a laryngeal diverticulum seen on the chest CT. However, when laser microscopic surgery for the correction of an alleged laryngeal diverticulum was performed in our hospital, no abnormal finding was seen in the larynx. Afterwards, she was consulted to the general pediatric department to work up for other reasons for the aspiration. Then, radionuclide salivagram was performed by a sublingual dropping of 0.1 mCi (3.7 MBq) of Tc-99 m Phytate with 0.3 ml saline. The serial records for a 10-min dynamic image of anterior view (a) and one frame of a delayed 15-min static image of anterior and posterior view (b) are shown, respectively. An abnormal linear radioactivity was observed in right paramedian lung field with atypical aspiration feature (black arrow). On barium esophagography, H-type TEF was

confirmed by aspirated contrast material (c, white arrow), and 3-mm fistula tract was ligated by pediatric surgeon in the end. Congenital H-type tracheoesophageal fistula (TEF) is an extremely rare anomaly in infants and the early diagnosis of this disorder is still a challenge to pediatricians due to scarcity, non-specific symptoms and lack of a single diagnostic examination [1–3]. Radionuclide salivagram (RS) is a physiological modality designed to assess the pulmonary aspiration using only a tiny volume of saline sublingually and has been widely used with the advantages of less radiation exposure and minimal patient cooperation [4, 5]. Previously, two cases of H-type TEF detected by scintigraphy technique were reported, and each of the results was accomplished by esophageal transit study, a somewhat different scintigraphic modality compared with RS [6–8]. Even though, the process of procedure and the clinical application is absolutely distinguishable from two studies, considering the challenge of early diagnosis in H-type TEF, radionuclide study could be a considerable option to patients in whom H-type TEF is suspected

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