

Early detection of recent onset achalasia from a chest radiograph

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A 65-year-old woman presented with a 1-year history of intermittent acid reflux and heartburn. In the prior month, she regurgitated swallowed food when lying down. Endoscopic examination revealed reflux esophagitis without mechanical obstruction. Although treatment was administered with a proton pump inhibitor, the symptoms continued to gradually progress. Physical and laboratory examinations were unremarkable. A chest radiograph (Fig. 1a) showed an air collection along the left side of the trachea with the displacement of the trachea to the right. Simultaneously, a convex opacity was observed immediately behind the right cardiac border, obscuring the lung markings. These findings indicated a dilated esophagus. Computed tomography (CT scans) (Figs. 1b–d, 2a) confirmed a dilated esophagus containing food residue with the compression of the trachea, indicating achalasia. A barium swallow study (Fig. 2b) demonstrated a dilated

esophagus with a “bird’s beak” appearance of the distal esophagus, which is a typical finding in the cases of achalasia. The patient underwent an esophagomyotomy, and she has continued to demonstrate favorable recovery in follow-up.

Achalasia is a primary esophageal motor disorder characterized by a loss of peristalsis in the distal esophagus and a lack of relaxation of the lower esophageal sphincter in response to swallowing [1]. Achalasia should be considered when patients present with dysphagia, chest pain, and refractory reflux symptoms when an endoscopy does not reveal mechanical obstruction or an inflammatory cause of esophageal symptoms [2]. Recent onset of achalasia is easy to misdiagnose as gastroesophageal reflux disease [3], which occurred in this case. The mean duration of symptoms is 4.7 years prior to diagnosis, and the quality and intensity of symptoms has no effect on early diagnosis [4]. Frequent delay in confirming the diagnosis of achalasia is not due to the atypical clinical presentation of this disease, but rather to misinterpretation of typical findings [4]. Diagnosing recent onset of achalasia is challenging when pathognomonic symptoms and signs are nonspecific, but a chest radiograph is occasionally valuable. As shown in this case, a chest radiograph revealed a dilated esophagus and absence of a gastric air bubble, which were the radiological clues prior to considering the diagnosis of achalasia. These specific findings may be missed even by experienced radiologists and clinicians, delaying the diagnosis of achalasia. However, a chest radiograph is inadequate for confirming the diagnosis of achalasia, and further study is required. A CT scan should follow the chest radiograph to confirm the diagnosis and to assess the severity of aspiration. The barium swallow study showed a dilated esophagus with tapering at the distal end. This tapering is often referred to

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Fig. 1 **a** Chest radiograph (posteroanterior view) showing an air collection along the left side of the trachea (*arrowheads*) with the trachea displaced to the right. A convex opacity is displayed behind the right cardiac border (*arrow*), obscuring the lung markings. **b** CT-scan image (mediastinal window) revealing a dilatated esophagus (*arrowheads*) containing food residue (*arrow*). **c, d** Compressed trachea (*arrows*) resulting from a dilatated esophagus, which was filled with food residue (*arrowheads*)

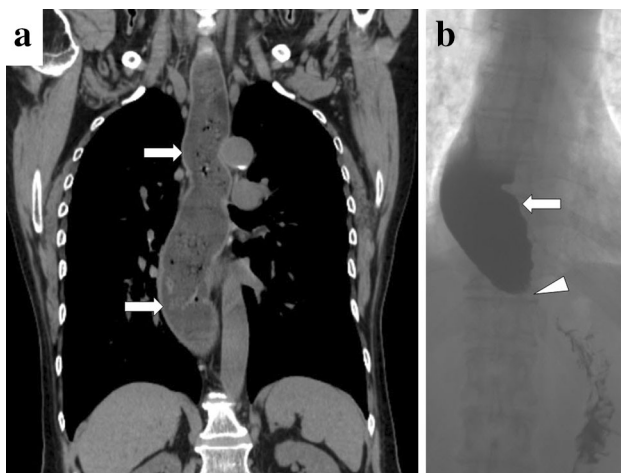
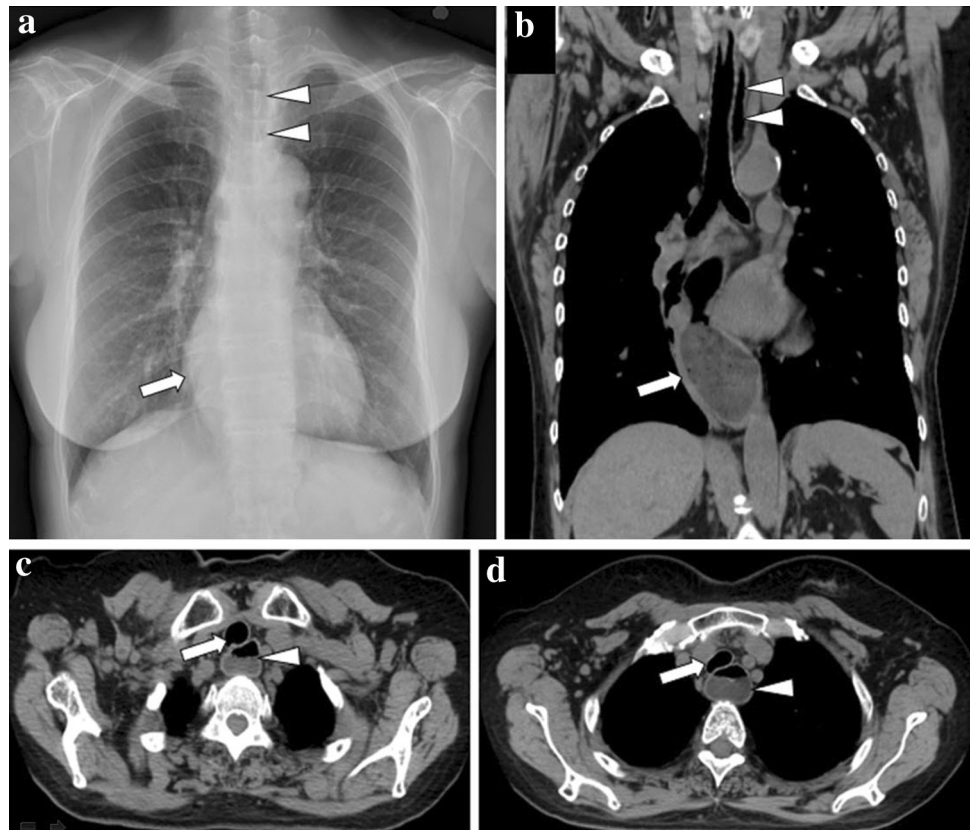


Fig. 2 **a** CT-scan image (mediastinal window) revealing a dilatated esophagus containing a large amount of food residue (*arrows*). **b** Barium swallow study showing a dilatated esophagus (*arrow*) with tapering at the distal end (*arrowhead*), which is the classic “bird’s beak” appearance

as a “bird’s beak” appearance, and is a characteristic finding of achalasia [5]. The present case is valuable as a reference for the early detection of recent onset achalasia, because a dilatated esophagus along the left side of the trachea and behind the right cardiac border is clearly identifiable on a chest radiograph.

Compliance with ethical standards

Conflict of interest The authors declare that they have no conflict of interest.

Statement of human and animal rights All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional or national research committee and with the 1964 Helsinki Declaration and its later amendments or comparable ethical standards. This article does not contain any studies with animals performed by any of the authors.

Informed consent Informed consent was obtained from the individual participant included in the study.

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