Interesting image

Aspiration pneumonia diagnosed by esophageal transit SPECT/CT scintigraphy

Neumonía por aspiración diagnosticada mediante gammagrafía SPECT/TAC de tránsito esofágico

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We present a 20-year-old male with agranulocytosis secondary to metimazole. The patient was admitted to intensive care unit (ICU) for sepsis, retrofaringeal abscess, and upper airway obstruction. Tracheal intubation and mechanical ventilation was used. Severe tetraparesia and critical illness polyneuropathy was developed while the patient was in the ICU requiring prolonged mechanical ventilation and tracheostomy. Once the patient improved, oral nutrition was started. However, repeated pneumonia was observed which required antibiotic therapy, so oral nutrition was stopped.

Chest X-ray showed a condensation in the lower lobe of the right lung (Fig. 1). Multidrug sensitive Escherichia coli was isolated. After 10 days with amikazine and aztreonam therapy, antifungals were introduced for persistent fever. With the suspicion of esophageal-bronchial fistula related to polyneuropathy of the critical ill patient, an esophageal transit scintigraphy was performed.

Patient fasted before the exam. A dynamic study in anterior view was carried out immediately after the oral administration of a tablespoon of gelly labeled with 99mTc-DTPA (37 MBq). Images demonstrated the passage of the radiotracer to the airway and to the lower lobe of the right lung.

Fig. 1. (A) Chest X-ray. Alveolar-interstitial infiltrate in the lower lobe of the right lung suggestive of pneumonic process. Minimal right pneumothorax. (B) Esophageal transit scintigraphy. Dynamic images in anterior view. Radiotracer accumulation is observed in the lower lobe of the right lung.
Fig. 2. Fusion SPECT/CT images. Upper row: air bronchogram condensation in the lower lobe of the right lung. Lower row: pathological accumulation of the radiotracer in the right main bronchus. These findings confirm the aspiration pneumonia.

the lower lobe of the right lung (Fig. 1). SPECT/CT images showed a correlation between the radiotracer uptake, the lung condensation, and the right main bronchus (Fig. 2). Therapeutic management was modified and nasogastric tube feeding was initiated until patient recovery.

Oropharyngeal dysphagia related to mechanical ventilation or neuromuscular diseases may determine a high rate of mortality caused by dehydration, malnutrition, and pneumonia secondary to tracheo-bronchial aspirations.1

The diagnostic approach of aspiration pneumonia secondary to swallowing disorders (dysphagia) is established in high-risk patients of aspiration who developed radiographic abnormalities. In this case, the clinical impact of scintigraphy lies in the demonstration of passage of the gastrointestinal content to the respiratory system which identified the etiology of aspiration pneumonia.2,3

Conflict of interest

The authors have no conflicts of interest to declare.

References

