

Pneumothorax following misplacement of a Nasogastric (NG) tube in stroke patient with hiatal hernia : A case report

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BACKGROUND



Fig 1. Nasogastric (NG) tube
 Nasogastric (NG) tube is a flexible double or single lumen tube that passes from the nose to the stomach or small intestine.

- NG tube misplacement is uncommon but can lead to serious complications.
- We report rare pneumothorax in intracranial hemorrhage (ICH) patient with hiatal hernia during inserting NG tube.

CASE DESCRIPTION

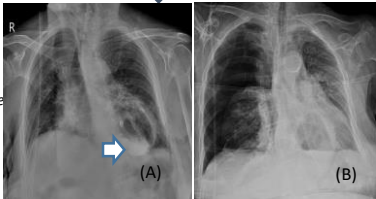
Female, 90 years-old,
 Hypertensive left temporal
 intracranial hemorrhage (ICH)

Post-stroke Dysphagia

★ NG tube insertion tried Tens of times
 Impossible to insert correctly

Finally Levin tube was inserted instead.

Fig 2. Chest PA
 Post Levin tube inserted state.
 Even Levin tube was twisted (white arrow) (A) and it was positioned properly (B)



Repetitive trials for proper positioning of the NG tube possibly punctured the trachea and then the lung, resulting in a **iatrogenic pneumothorax**. Chest tube was inserted.

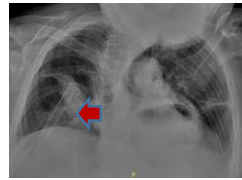


Fig 4. Chest AP
 Post chest tubing state.
 Chest tube was inserted due to drainage air and serous effusion, Chest tube (red arrow)

- After pulmonary complication was resolved, → we found hiatal hernia, by gastroendoscopy,
- which was probably the reason of difficulty in inserting NG tube.

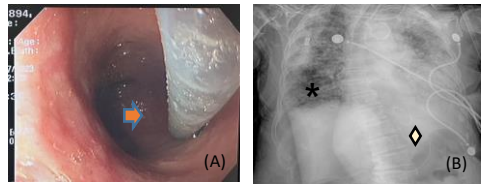


Fig 5. Gastroendoscopy and Chest AP
 Levin tube insertion under endoscopy and hiatal hernial sac (orange arrow) (A) and Pneumonia (star) and biapleural effusion (rhomboid) (B)

1 day later,

Dyspnea and Oxygen saturation decreased
 Gradually (95 → 88 → 78) SaO₂ ↓

Large amount of pneumothorax
 at the anterior aspect of whole right lung

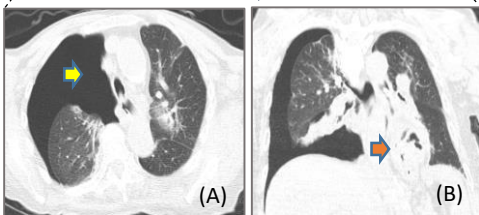


Fig 3. Chest CT
 Large amount of pneumothorax at the anterior aspect of whole right lung (yellow arrow) (A) and Hiatal hernia (orange arrow) (B) were detected.

DISCUSSION

- Pulmonary complications in dysphagia patient such as pneumothorax, pneumonia, can occur by following misplacement of the NG tube.
- Proper positioning and confirmation of tube is essential to prevent pulmonary complications.

CONCLUSIONS

- The radiologic or endoscopic evaluation is recommended **before, during, and after** tube placement is completed.
- If physician has difficulty in inserting NG tube in spite of following correct procedure manual, **consider diagnostic evaluations** to find lesions or **anatomic variations** around the respiratory and gastrointestinal tract.