

Trigger :

You are an intern working on a neurology ward, where a nurse informs you that one of your patient's, an 83F day 2 post-ischaemic MCA-territory stroke (initially managed with thrombolysis), is now febrile, increasingly delirious and saturating at 91% on room air. You perform a CXR, as part of a septic screen and compare your findings with a CXR performed at admission.

Task 1: Interpret the CXR.

At presentation



Day 2 admission



Details and demographic	AP CXR of an 83F day 2 post-ischaemic MCA-territory stroke initially managed with thrombolysis.
RIPE/Quality	Rotation : No rotational artifact
	Inspiration: Adequate inspiratory effort with 6 anterior ribs showing.
	Projection: AP
	Exposure: initial CXR adequate exposure, underexposure of most recent CXR (portable)
Airways and lung fields	<p>Trachea is equidistant between two clavicles, not indicative of any tracheal deviation.</p> <p>Lung fields:</p> <ul style="list-style-type: none"> • New dense patchy opacifications seen in the right upper middle and lower zones. • Increased opacification in the left lower zone • Increased vascular markings most obvious in CXR at presentation
Bones and soft tissue	<ul style="list-style-type: none"> • No obvious fractures • Scoliosis as seen in both CXRs
Cardo-mediastinum	<ul style="list-style-type: none"> • Mediastinum appears to be midline • Right cardiac border cannot be visualised, left cardiac border can be visualised. • Cardio-mediastinum appears to be >60%, however AP CXR does not accurately assess cardiomegaly.
Diaphragm	No blunting of left and right costophrenic angles.
Everything else	No free gas under the diaphragm, no subcutaneous emphysema is noted.
Interpretation	In summary, this is the AP portable CXR of an 83F with suspected sepsis, day 2 post-ischaemic MCA-territory stroke. The most recent portable CXR demonstrates sub-optimal penetration however, there are new opacifications throughout the right lung fields and left lower zone. In a febrile patient who is day 2 post-stroke with new changes on CXR, my working differential is sepsis secondary to aspiration pneumonia .

Follow-up questions:

Question 1: Why are stroke patients at increased risk of aspiration pneumonia?

Question 2: What side is aspiration pneumonia most common and why?

Question 3: What is the empirical treatment for aspiration pneumonia in the hospital setting?

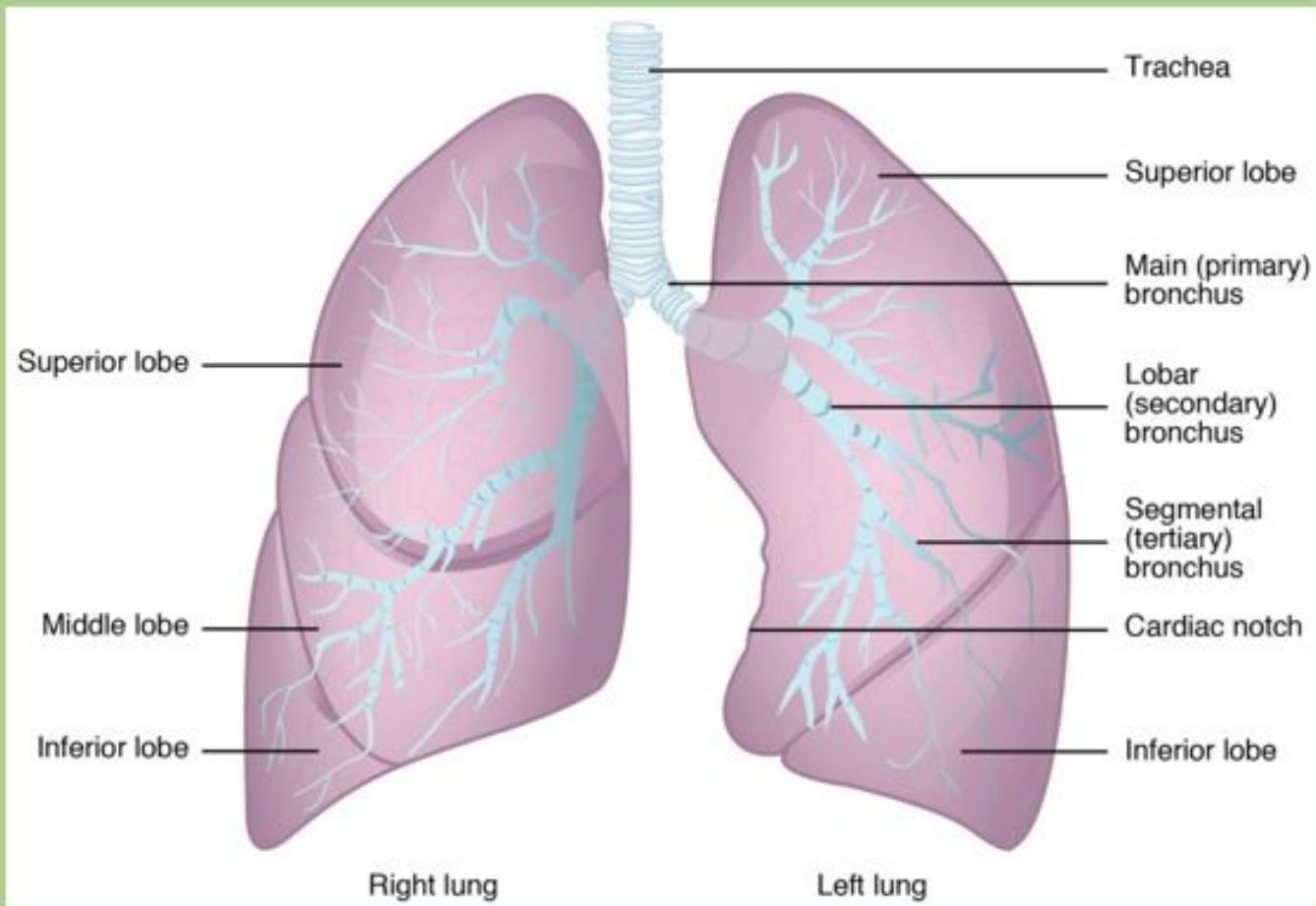
Answers:

Q1:

Cortical or brain stem strokes can cause dysphagia through damage to the upper motor neurones involved in swallowing and therefore increasing the risk of aspirating (inhaling) gastric contents/food etc.

All patients should remain nil-by-mouth (NBM) until they have their swallowing assessed by trained staff (often speech therapists).





Answers:

Q2:

Anatomically, the R main bronchus is straighter than the L main bronchus which is more horizontal due to the heart underneath it.

As this offers a more direct pathway for foreign contents to travel, the R lower lobe is a common spot for aspiration pneumonia.



Answers:

Q2 (continued):

Aspiration pneumonia more commonly affects the basal segments of the lower lobes when patients aspirate whilst sitting upright.



Posterior segments of the upper lobe or apical segments of the lower lobe are affected in patients who aspirate whilst flat.

Answers:

Q3:

Empirical antibiotics for aspiration pneumonia in hospital, is the same as empirical management of hospital-acquired pneumonia (HAP).

Assess the severity of the pneumonia using clinical scoring systems such as CURB-65, and then treat accordingly with supportive care and IV antibiotics (until swallowing is assessed). Examples of regimes:

Low-moderate severity HAP: IV ceftriaxone

Severe HAP: IV piperacillin + tazobactam

→ If septic shock: consider adding vancomycin and gentamicin

How to assess severity of pneumonia:

CURB-65 / SMART COP

<https://litfl.com/community-acquired-pneumonia/>