

Background

Labor epidurals are commonly placed using the loss of resistance (LOR) technique with either air or saline. Although both methods are acceptable and usually based on provider preference, LOR with air may carry slightly higher risks including pneumocephalus and pneumomediastinum.

Case Presentation

33-year-old female, G2P1 at 37 weeks GA complicated by GDMA2, asthma, pre-eclampsia with severe features presented with severe left-sided back pain, headache, congestion, cough, and decreased oxygen saturation.

- Exam: BP 171/82, SpO2 93% on RA, left lower back tenderness, FHT 145bpm with moderate variability
- Labs: serum Cr 0.73, urine P/C ratio 0.17, platelet 176, respiratory viral panel negative
- Admitted for induction of labor. Labor epidural was placed using LOR with air technique
- Persistent back pain and decreasing oxygen saturation despite adequate labor analgesia, concern for pulmonary embolism (PE)
- CT angiography negative for PE, notable for left sided 11th rib fracture, small pneumomediastinum extending into right sternocleidomastoid, thoracic spinal canal, paraspinal muscles
- Supplemental oxygen administered during uncomplicated vaginal delivery

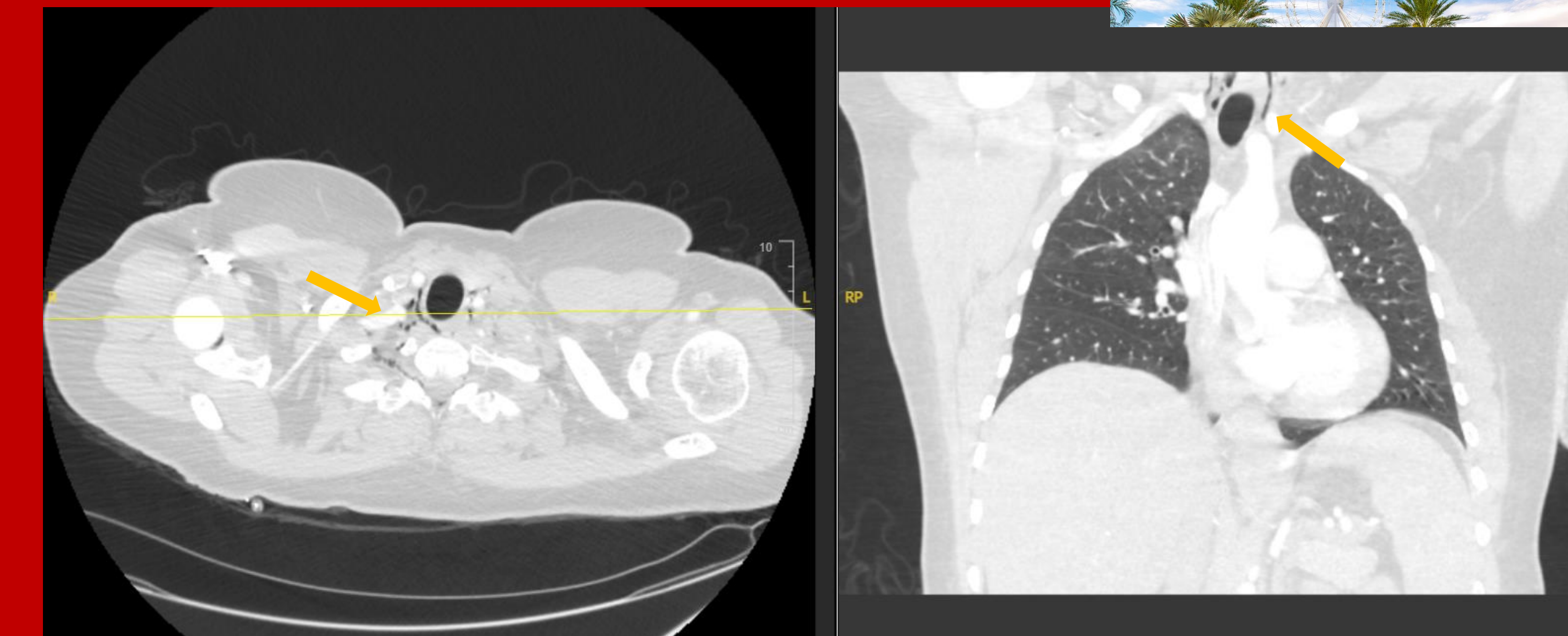
Discussion

- Pneumorrhachis is defined as air within the intradural or extradural spinal canal, often asymptomatic but can cause severe pneumocephalus or pneumothorax if significant volume
- Epidural space is not covered by fascial planes, thus air can travel
- Difficult to prove causation, rib fracture complicates this case
- Patients are not routinely imaged, so incidence of pneumorrhachis or pneumomediastinum after epidural with LOR to air technique may be more common than we think

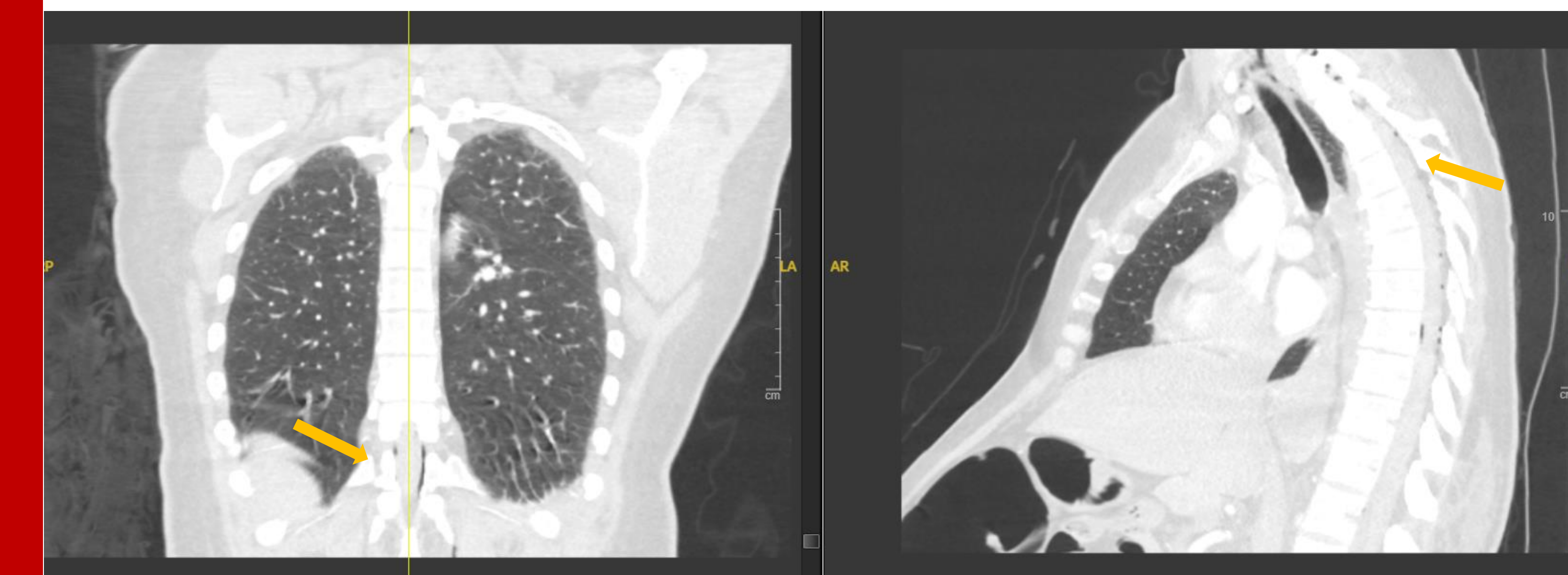


References available upon request

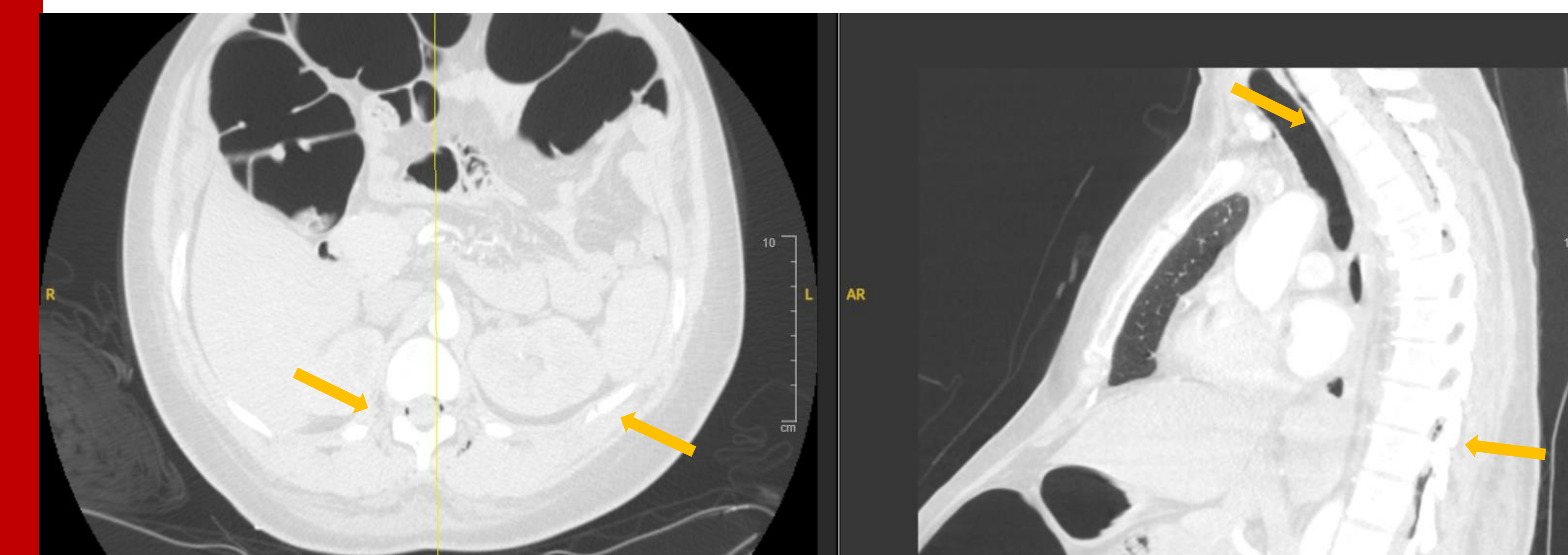
Pneumomediastinum and pneumorrhachis may occur after epidural placement utilizing the loss of resistance to air technique



Pneumomediastinum extending to right paratracheal musculature



Coronal section of pneumorrhachis in thoracic to cervical spinal column



Pneumorrhachis in thoracic spinal column and left 11th rib fracture