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CLINIPICS

Chest X-ray examination

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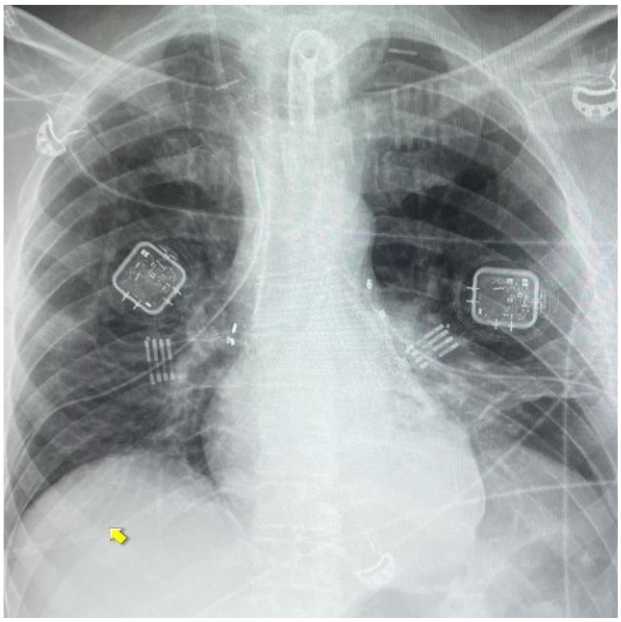
Chest X-ray examination is one of the cheapest and common investigation to detect and diagnose certain conditions, by providing the physicians specific clues and findings. A clinical history of the patient is always important for a correct interpretation of a chest X-ray film. Reading can be challenging at times and it is recommended to follow the basic steps before jumping onto the conclusions in order to avoid missing some of the important findings. Please have a look at the chest X-ray of a young man, who was involved in a trauma and had been dependent on long term ventilation.

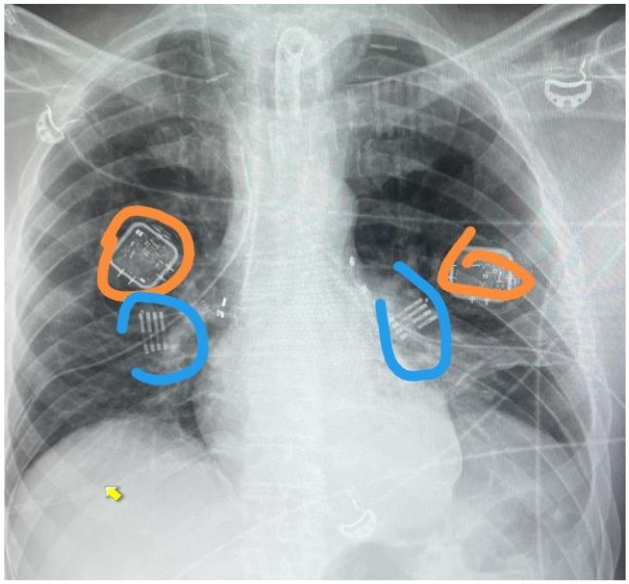


QUESTIONS:

1. Is this a PA or AP view?
2. Is there any pneumothorax?
3. Is there any infection?
4. Is the heart size normal?
5. Is there any chest drain?
6. Is there any rib fracture?
7. What other structures can you see?
8. Can you identify the structures marked?
9. What is the possible diagnosis based on structures marked?

ANSWERS:

Ans 1: AP view
Ans 2: No pneumothorax
Ans 3: No infection
Ans 4: heart size is normal
Ans 5: no chest drain present
Ans 6: no Rib fractures
Ans 7: structures visible are CVC, tracheotomy tube, ECG leads, phrenic nerve stimulator with wiring leads
Ans 8: phrenic nerve stimulator with wiring leads
Ans 9: Diagnosis in this patient is diaphragm paralysis due to high cervical spinal cord injury secondary to trauma



Few words on phrenic nerve stimulation

Phrenic nerve stimulation, also known as diaphragm pacing is done in patients who are dependent ventilator dependent due to high cervical cord injury. Through this, the electrical stimulation is given to the phrenic nerve by virtue of an implanted device. Stimulation leads to the contraction of the diaphragm. The receiver is attached to an external device which sends impulses to the receivers (implanted under the skin) which converts these impulses into stimulating current which are then relayed down to the phrenic nerve to cause diaphragmatic contraction. This contraction is rhythmic and causes the patient to inhale and exhale.

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