

SAFETY MINICOURSE: CASE STUDIES

1 – X-RAY

A 19-year-old man presented to the emergency department with respiratory distress after blunt chest trauma. A digital chest radiograph was labeled backwards; a "left" marker was mistakenly placed over the right chest. There was a moderate pneumothorax seen on the film on the anatomic left side (the side of the aortic arch). On the radiograph, however, the pneumothorax appeared to be on the patient's right (Figure).

The resident assigned to the patient performed a brief physician examination, but based his localization of the pneumothorax largely on the reading of the chest radiograph. He thus placed a right chest tube. A correctly labeled follow-up chest x-ray showed persistent pneumothorax on the patient's left and the right-sided chest tube. A second chest tube was then placed, this time in the patient's left chest. The patient remained stable. The right chest tube was removed after the physicians confirmed that there was no air leak. There were no further sequelae.

2- INFANT RESUSCITATION

An infant was born with sluggish respirations. During labor the infant's mother had received meperidine [Demerol, a pain medication], a narcotic with a half-life of 2.5-4.0 hours in adults and 12-39 hours in neonates. The physician started resuscitation and ordered naloxone [an opiate antagonist]. Shortly after administration of the medication, the infant's condition began to deteriorate further.

Prompted by the proximity of the deterioration to the administration of the naloxone the physician checked the packaging of the drug. The syringe had inadvertently been filled with Lanoxin [digoxin, a cardiac medication] instead of naloxone. The packages of both drugs, made by the same manufacturer, were almost identical. ECG revealed bi-directional ventricular tachycardia, consistent with digoxin toxicity.

Approximately 1 hour later the infant died. A post-mortem digoxin level was 17 ng/ml (therapeutic range 0.8 to 2 ng/ml).
