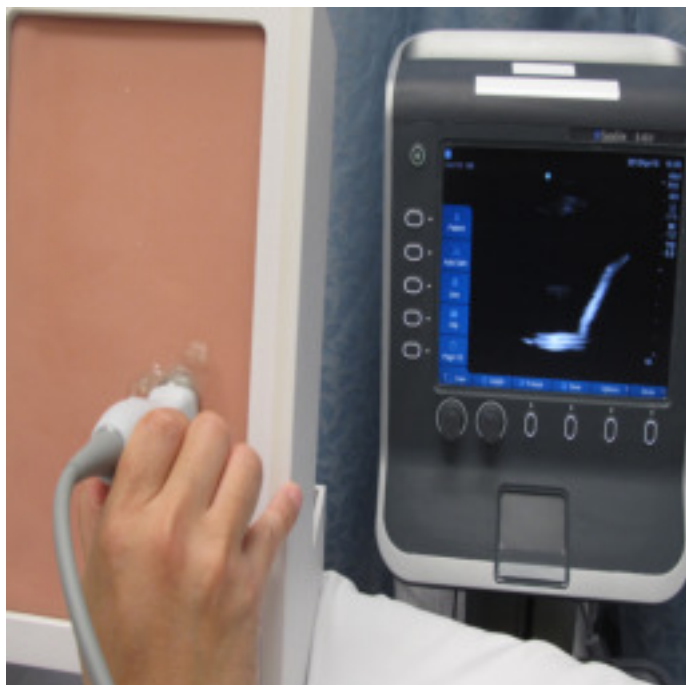


Ultrasound Guided Thoracentesis



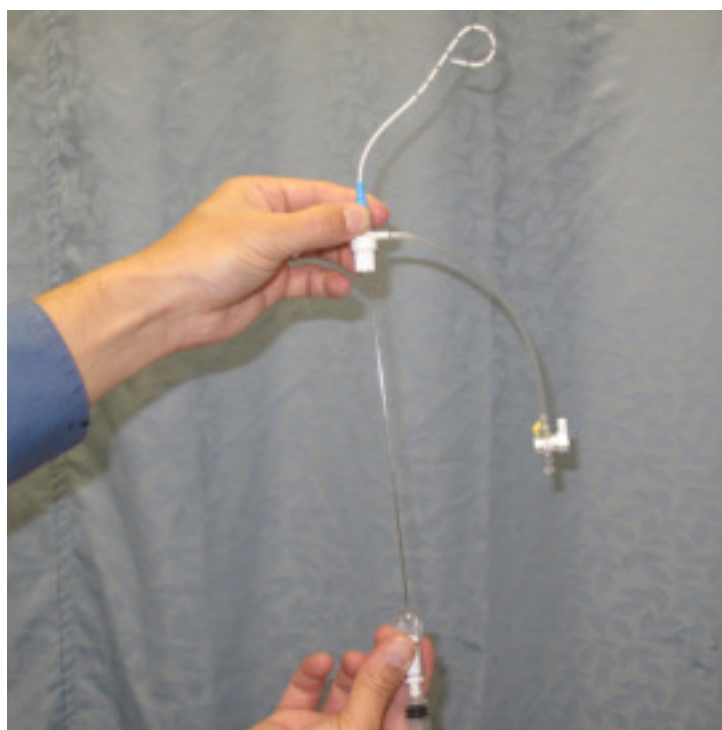
Step 1: Locate pleural space and position of diaphragm with the ultrasound probe and confirm adequate fluid to perform thoracentesis safely



Step 2: Optimally position ultrasound probe so that large fluid collection centered on screen

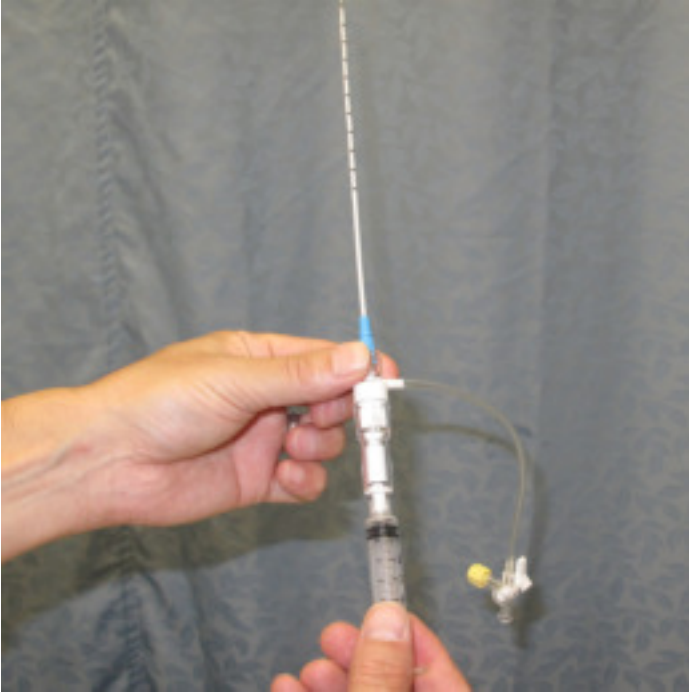


Step 3: Mark skin insertion site adjacent to ultrasound probe by indenting skin with ball point pen

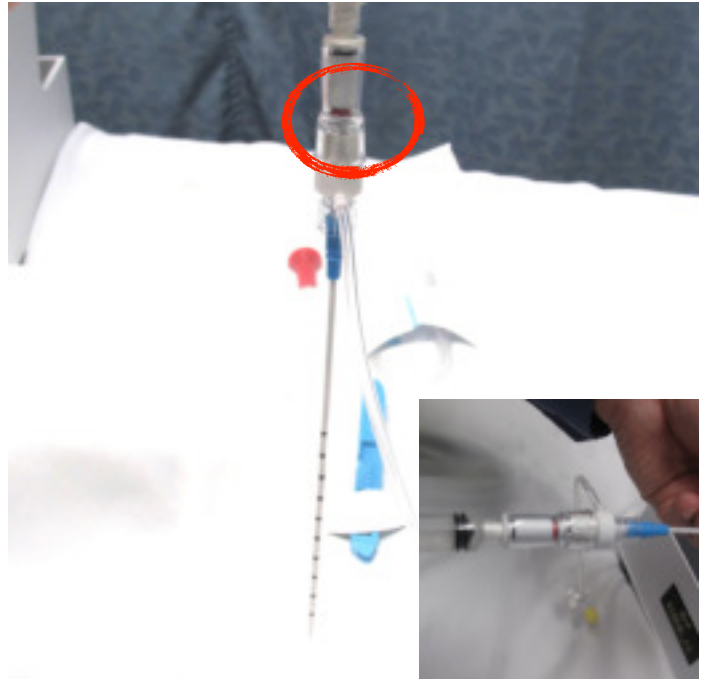


Step 4: Prepare equipment by inserting long needle with obturator into pigtail catheter

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Step 5: Guide needle to end of pigtail catheter so that tip protrudes through tip of catheter



Step 6: Test safety mechanism by pushing tip of obturator against hard surface; color change indicator transitions from white to red as spring loaded obturator retracts into needle

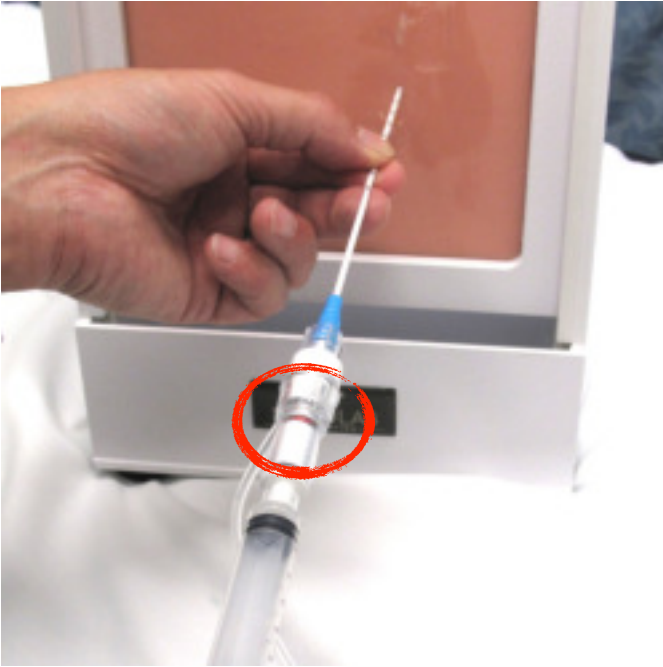


Step 7: Make incision in skin at location of previously indented skin insertion site

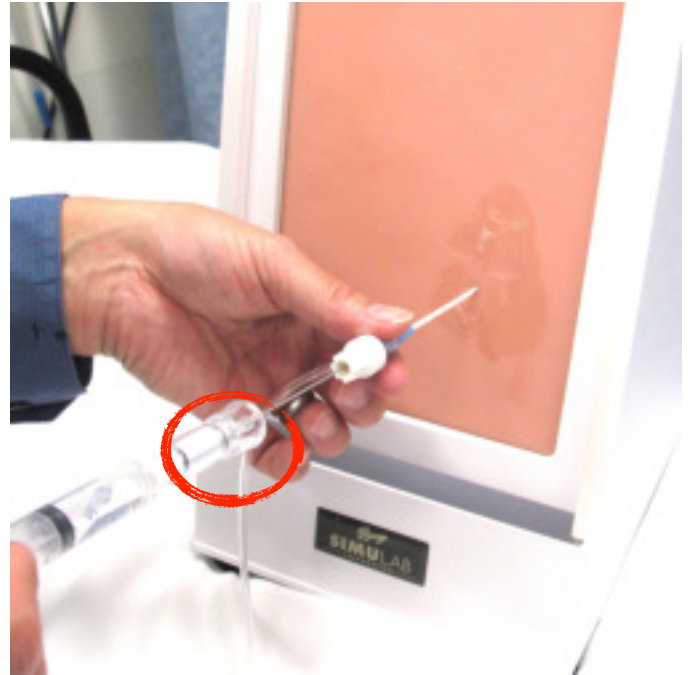


Step 8: Advance device through skin incision by advancing syringe and guiding catheter through subcutaneous tissue

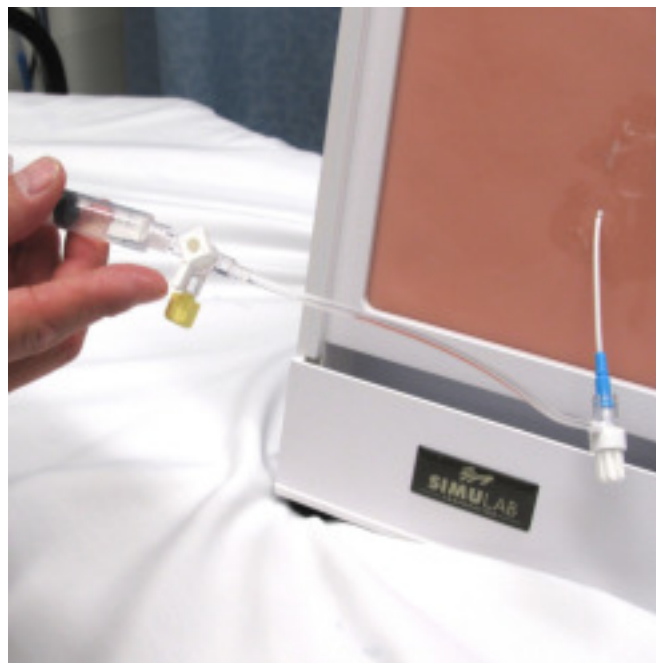
Ultrasound Guided Thoracentesis



Step 9: Watch as color change indicator changes from white to red as obturator meets resistance at pleural surface



Step 10: Color change indicator transitions back to white as the pleura is punctured and fluid fills syringe. Stabilize syringe and advance catheter into pleural space



Step 11: Position three way stop cock so that pleural fluid may be aspirated into syringe

