AIRLINK CRITICAL CARE TRANSPORT

Peripheral Arterial Blood Draw

Objective:

This procedure is used to draw a peripheral arterial blood specimen in order to assess the respiratory system of a patient through arterial blood gas analysis.

Indications:

Any intubated patient or patient in respiratory or ventilatory failure.

Contraindication:

Absolute

- Positive Allen test
- Cellulitis or other infections over the radial artery
- Absence of palpable radial artery pulse

Relative

- Coagulation defects.

Procedure:

1. Don appropriate PPE.
2. Determine the appropriate arm from which to draw the specimen.
3. Perform an Allen test. Have the patient raise the hand above the level of the heart. Then have the patient make a fist while you simultaneously compress the radial and ulnar arteries.
4. When the patient's hand turns white or pale, release compression of the ulnar artery and assess circulation. The color should return to normal in approximately 5 to 7 seconds.
5. Repeat while releasing the radial artery. Sluggish return of color may indicate occlusion in one or both of the arteries. Arterial puncture should not be performed on this extremity.

6. If possible, position the patient's arm with a small towel roll beneath the wrist to slightly extend the wrist (do no overextend).
7. Cleanse the site.
8. Palpate the radial artery with your index and middle fingers (do not use your thumb).
9. Locate the radial artery and puncture the skin with the bevel of the needle at a 45-degree angle. The syringe should rapidly fill with bright red blood. Do not dig or probe with the needle. If you have difficulty, slightly reposition the needle. If you continue to have difficulty, stop and restart the procedure or use other limb.
10. Once the appropriate amount of blood has filled the syringe rapidly remove the needle and hold pressure for approximately 2 to 5 minutes.
11. Safely remove the needle and expel any air contained within the syringe.
12. Immediately perform the test with the specimen.
13. Reassess neurovascular status.

Complications:

1. Arterial spasm.
2. Ischemic changes to the hand and wrist.
3. Impaired circulation to extremity.

References:

1. Pollak, Andrew. 2011. *Critical Care Transport*. Sudbury, MA. Jones and Bartlet Publishers.