UPPER EXTREMITY ARTERIAL DOPPLER

Includes an evaluation of bilateral upper extremity arterial waveforms of the common carotid, subclavian, brachial, ulnar, and radial arteries utilizing spectral Doppler. The goal is to document any hemodynamic changes related to vessel narrowing or stenosis.

Patient prep: None

Patient is instructed to remove clothing from the waist up- gown open in the front.

Transducer: Highest frequency linear transducer possible- usually from 5 to 15 mHz. (Continuous wave “pencil-probe” is transducer of choice.)

Paperwork: Fill out Upper Extremity Arterial Doppler worksheet completely. Document reason for exam and all pertinent history. Record all measurements and fill in comments. Obtain reports of previous exams or other pertinent studies.

Protocol

Patient is instructed to relax supine on the bed. A blood pressure cuff is placed above the brachial artery on the upper arm. The cuff is inflated and a systolic pressure of the brachial artery is obtained. This number is documented. The brachial artery spectral waveform is evaluated for flow characteristics (triphasic, biphasic, or monophasic). Pressure differences are compared segmentally and contralaterally.

A blood pressure cuff is placed on the forearm and systolic pressures are obtained of the radial and ulnar arteries. Once again, flow characteristics are evaluated and ratios are calculated using the brachial pressure.

Examination is repeated on the contralateral arm.

Doppler Waveform Analysis

The following spectral doppler images must be obtained during the procedure:

- Right carotid
- Right subclavian
- Right axillary
- Right brachial
- Right radial
- Right ulnar

**Waveform analysis is repeated on the left arm**