



hemodynamically significant lesion, the increase in systolic blood pressure in the arm is not matched by an increase in blood pressure in the leg. As a result, the ankle-brachial index decreases, the magnitude of which is proportional to the severity of the stenosis.

After significant vascular disease in the extremities has been identified, plethysmography can be used to determine the location and severity of the disease. With this method, a pneumatic cuff is positioned on the leg or thigh, and when inflated, it temporarily obstructs venous return. Volume changes in the limb segment below the cuff are converted to a pressure waveform, which can be analyzed. The degree of amplitude reduction in the pressure waveform corresponds to the severity of arterial disease at that level.

Doppler ultrasound uses reflected sound waves to identify and localize stenotic lesions in the peripheral arteries. This test is particularly useful for patients with severely calcified arteries, for whom pneumatic compression is not possible and ankle-brachial indices are inaccurate. In combination with real-time imaging (i.e., duplex imaging), this technique is useful in assessing specific arterial segments and bypass grafts for stenotic or occlusive lesions.

Magnetic resonance angiography and CTA allow high-quality and comprehensive imaging of the entire peripheral arterial circulation in a single study. The three-dimensional nature of these studies and the ability to perform extensive postprocessing views, including cross-sectional views, of all vessels, even those that are very tortuous, are attractive features of these modalities.

SUGGESTED READINGS

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