

Carotid Ultrasound and Brain Scan

Disease can affect the circulation to the brain. It is usually caused by atherosclerosis (fat and calcium deposition in artery walls) which can lead to strokes or bleeding into the brain. Atherosclerotic plaque encroachment into the lumen of the vessel leads to narrowing (stenotic) lesions that obstruct flow. Significantly obstructive lesions may be referred for surgery (endarterectomy or stent). Besides risk to the brain circulation, atherosclerosis in the carotid artery signals an increased risk of heart disease. Risk factor modification is crucial, particularly blood pressure and lipid management. Aspirin is commonly prescribed. The carotid arteries travel along the sides of the neck and are easily felt with the fingertips on physical examination. Listening to the neck with a stethoscope may reveal a whispering sound known as a *bruit*. Ultrasound (sound waves) evaluation of the carotid arteries includes intimal-medial thickness (IMT), plaque information, and percent stenosis. IMT testing measures the thickness of the inner wall of the artery. The next step in carotid pathology after an increase in IMT, is plaque formation. Eventually, plaque encroachment into the lumen of the vessels leads to stenotic lesions that obstruct flow. Because of technical and patient variables, serial carotid ultrasound testing may show inconsistent amounts of disease, particularly if there is only mild disease. Computer tomography (CT) scan of the brain is used to find evidence of stroke or bleeding within the brain. MRI scan of the brain is also used to find old stroke disease. Another common finding by brain MRI is white matter hyperintensity (WMHI). WMHI are strongly related to age and hypertension, and they predict an increased risk of stroke and cognitive impairment. Although strokes and bleeding into the brain are mainly due to atherosclerosis or hypertension, there are nonatherosclerotic causes: migraine, adverse drug reactions, trauma, ruptured congenital aneurysm, vascular heart disease, congenital heart disease, clotting disorders, connective tissue disease (example lupus) and others. The long term prognosis varies, depending on the cause; and additional tests (such as echocardiogram, clotting studies, and other blood and imaging tests) may be required.

If your client has carotid artery disease or abnormal brain scan, please answer the following:

1. Please check the type(s) of vascular disease present:

Bruit on physical examination with no further testing _____

Abnormal IMT _____

Stenosis of the carotid arteries by ultrasound (provide percentage)

Abnormal brain scan _____

Please provide dates and copies of reports

2. Have there been any other symptoms? Please

describe _____

3. Has your client had any surgical procedures such as endarterectomy or stent? _____

4. Is your client on any medications?

If yes, please give details

5. Has your client smoked cigarettes or other form of tobacco in the last 5 years?

If yes please give details _____

6. Does your client have any other major health problems (ex: heart problems, cancer, etc.)?

If yes, please give details
