

Vascular Conditions of the Brain

Carotid Stenosis

Carotid artery stenosis occurs when cholesterol plaque builds up at the carotid bifurcation. Stenosis of the external carotid artery is not clinically significant, nor is stenosis of the common carotid artery (with rare exceptions). Stenosis of the internal carotid artery is clinically significant when the degree of stenosis is greater than 50% if symptomatic, or 60% if asymptomatic.

Carotid stenosis carries risk of **stroke**. An embolic stroke occurs when thrombus (blood clot) forms on a carotid plaque and breaks loose, traveling downstream to lodge in a smaller artery in the brain or retina. This stops blood flow to the smaller artery (called **ischemia**), causing cellular death to the tissue fed by the artery (called **infarction**). The worse (higher grade) the stenosis, the greater is the risk of stroke. Stroke can also occur if the internal carotid artery thromboses (clots off) entirely (called thrombotic stroke, Figure 1).

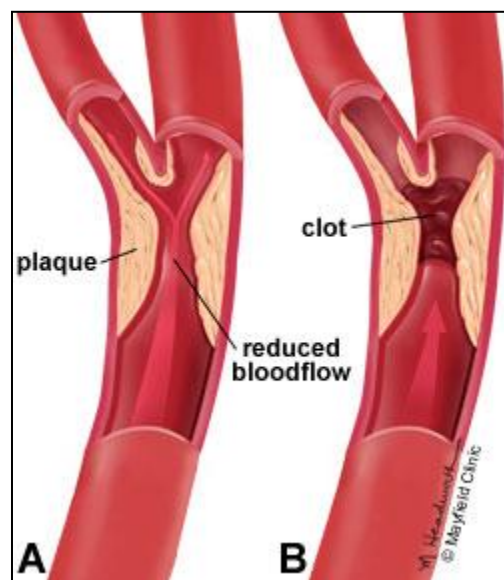


Figure 1: Carotid stenosis and thrombosis.

A. Carotid stenosis.

B. Thrombosis at the carotid bifurcation.

Occasionally patients will experience temporary ischemia to the brain (called **transient ischemic attack**, or **TIA**) or retina caused by a very small embolus which briefly lodges in an artery and quickly dissolves. This causes transient stroke-like symptoms (speech arrest, facial droop, one-sided weakness, loss of vision in one eye).