

Carotid Artery Disease

Enfermedad carotídea

WHERE ARE CAROTID ARTERIES LOCATED AND WHAT IS THEIR FUNCTION?

Like all organs, the brain needs blood to get nutrients and oxygen. Blood reaches the brain through two large blood vessels located in the neck called right and left carotid arteries, which branch out to supply all the areas of the brain (Figure 1). The two vertebral arteries which run up the back of the neck also supply the brain.

WHAT IS CAROTID ARTERY DISEASE?

Blood flows through the lumen of the arteries. Carotid artery disease consists of wall thickening towards the lumen, reducing its caliber from minimum degrees to complete obstruction of blood flow.

Arterial wall thickening is called “atheromatous plaque”; it occurs in certain segments and is the consequence of atherosclerotic disease.

The plaque is formed as an ‘inflammatory’ process due to cell and cholesterol deposits.

WHO IS AT RISK FOR CAROTID ARTERY DISEASE?

Individuals with the same “risk factors” that predispose to myocardial infarction and arterial disease of the lower limbs and the aorta are at risk for carotid artery disease. Some of these factors are unchangeable (age, sex, family history); others are reversible, as hypertension, high bad cholesterol (LDL-C), triglycerides and lipids (fats), and also low levels of protective good cholesterol (HDL-C), diabetes, obesity, smoking, alcoholism, and physical inactivity.

WHY DO SYMPTOMS OCCUR?

Symptoms occur either by the progressive narrowing of the lumen due to atheroma, or by blood clots or atheroma fragments that travel through the bloodstream to the brain and can completely block the lumen of the small arteries (a phenomenon called embolism).

WHAT ARE THE SYMPTOMS OF CAROTID ARTERY DISEASE?

There are two possibilities:

- It may have no symptoms, even in cases of severe narrowing (>70%) or total occlusion, because of self-regulatory mechanisms that let blood flow through other arteries to the brain areas at risk.
- When those mechanisms fail, stroke symptoms are experienced. Stroke has two modalities: “transient ischemic attack” (TIA), lasting from minutes to 24 hours, with complete patient recovery, or “cerebrovascular accident” (stroke), leading to permanent brain damage, and symptoms persisting over time (hemiplegia, coma, etc.).

WARNING SYMPTOMS

- Weakness, numbness or paralysis in an arm or leg on one side of the body.
- Deviation of the corner of the mouth.
- Momentary loss of sight or trouble seeing with one or both eyes.
- Fainting or coma.
- Difficulty speaking or understanding what is happening around.
- Sudden difficulty with walking.
- Sudden loss of coordination or balance.

WHAT YOU NEED TO KNOW AND DO

- Like myocardial infarction, stroke is a medical emergency.
- It is the second cause of death and the leading cause of disability worldwide.
- Prevention and early treatment are essential to avoid stroke consequences and sequelae.
- Call the emergency service immediately if you or anyone else experiences stroke symptoms.
- Record the time of symptom onset and episode duration, as this is valuable information.

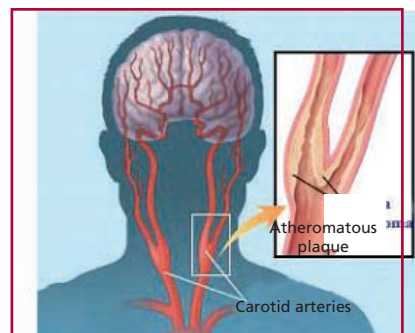


Fig. 1. Diagram of the carotid arteries.



Author: Ricardo L. Beigelman, M.D.
Instituto de Investigaciones Cardiológicas
“Prof. Dr. Alberto C. Taquini”, UBA.

Editor: Julio Manuel Lewkowicz, MD^{MTSAC}
Sanatorio Güemes, Buenos Aires

REFERENCES

- Guidelines for the Prevention of Stroke in Patients With Stroke and Transient Ischemic Attack. *Stroke* 2015;46:e87-9.
- Díaz MF. Accidente cerebrovascular is quémico. *Rev Argent Cardiol* 2016; 84:196.

INFORMATION IN THE WEB

- www.nlm.nih.gov videos de salud
- Encuestas Nacionales de factores de riesgo en Argentina (2005-2009-2013). Ministerio de Salud Pública de la Nación. Dirección de Promoción de la Salud y Control de Enfermedades no transmisibles. www.msal.gov.ar/ent

The information provided is intended to be informative and educational and is not a replacement for professional evaluation, advice, diagnosis or treatment by your health-care professional.

This page cannot be photocopied for commercial purposes, unless authorized by the Argentine Society of Cardiology.