



ĐẠI HỌC Y DƯỢC
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Management of patients with extracranial carotid artery disease

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Introduction



- Carotid atherosclerosis is the carotid bifurcation
- Progression of atheromatous plaque
 - Luminal narrowing
 - Accompanied by ulceration
 - Ischemic stroke or transient ischemic attack
 - Embolization, Thrombosis
 - Hemodynamic compromise



Introduction



- Asymptomatic carotid atherosclerotic
 - ≥ 50 percent of the lumen diameter
 - Men and women aged < 50 years were 0.2 and 0%
 - Men and women aged ≥ 80 years were 7.5 and 5.0%



Risk of stroke and cardiovascular events

- Risk of ipsilateral stroke
 - Asymptomatic carotid atherosclerosis
 - Approximately 0.5 to 1.0 percent annually
 - Increased risk for myocardial infarction and vascular death

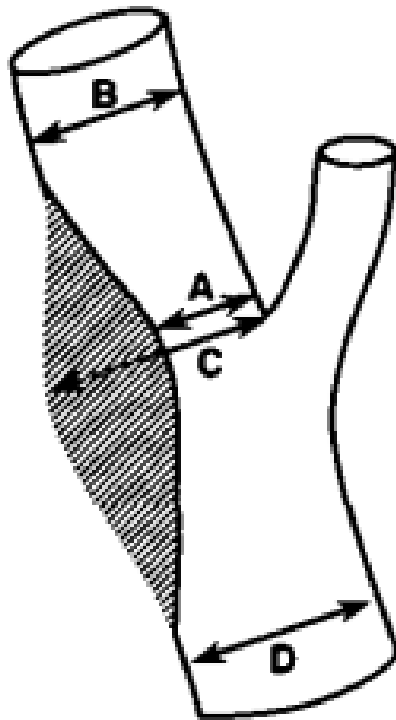


Definition of symptomatic disease

- Focal neurologic symptoms
 - Sudden in onset **and**
 - Referable to the appropriate carotid artery distribution
 - One or more transient ischemic attacks
 - Focal neurologic dysfunction
 - Or transient monocular blindness
 - One or more minor ischemic strokes
 - Within the previous six months



Method of stenosis measurement



ECST method: $\frac{C-A}{C} \times 100\%$ stenosis

NASCET method: $\frac{B-A}{B} \times 100\%$ stenosis

CC method: $\frac{D-A}{D} \times 100\%$ stenosis

FIG 1. Diagram of three methods of measuring carotid stenosis on an angiogram when the stenosis is within the bulb. A, B, and D are measurements made on a visible column of x-ray contrast; C is a visual estimate of the likely normal lumen diameter before development of the stenosis.



Indications for carotid bifurcation imaging

- Neurologically symptomatic patient
- Neurologically asymptomatic patient
 - Screening patients with asymptomatic bruit
 - Potential “high-risk groups” who might benefit from screening for asymptomatic stenosis



Carotid ultrasound



- Asymptomatic patients with two or more risk factors
 - Hypertension, Hyperlipidemia
 - Family history of atherosclerosis or ischemic stroke before 60 years of age
 - Tobacco smoking
 - Annually to assess the progression or regression of disease and response to therapeutic measures in patients with >50% stenosis



CTA and MRI



- Symptomatic patients when carotid US cannot be obtained or the initial test
- MRA
 - Sensitivity range of 97–100%
 - Specificity range of 82–96%
- CTA: 100% sensitivity and 63% specificity
- Catheter angiography



Approach to management

- Treatment of hypertension
 - Antihypertensive treatment is recommended for patients with hypertension and asymptomatic atherosclerotic ECVD to maintain blood pressure less than 140/90 mmHg
- Cessation of tobacco smoking
 - Patients with atherosclerotic ECVD who smoke cigarettes should be advised to quit and offered cessation interventions to reduce risk



Approach to management

- Control of hyperlipidemia
 - Treatment with a statin is recommended for all patients with atherosclerotic ECVD to lower low-density lipoprotein cholesterol
 - LDL < 70
 - Cholesterol < 130



Approach to management

- Management of diabetes mellitus
- Antithrombotic therapy
 - Antiplatelet therapy with aspirin, 75 to 325 mg daily
 - Clopidogrel 75 mg daily



Carotid revascularization

- Carotid endarterectomy IA
 - Patients at average or low surgical risk
 - Nondisabling ischemic stroke
 - Transient cerebral ischemic symptoms
 - Amaurosis fugax



Carotid revascularization

- Carotid endarterectomy

- Diameter of the lumen of the ipsilateral internal carotid artery is reduced more than 70%
 - Noninvasive imaging
 - More than 50% catheter angiography
- Rate of perioperative stroke or mortality is less than 6%



Carotid revascularization

- Carotid artery stenting IB
 - Symptomatic patients at average or low risk
 - Diameter of the lumen of the internal carotid artery is reduced more than 70%
 - Noninvasive imaging
 - More than 50% catheter angiography
 - Rate of periprocedural stroke or mortality is less than 6%



Carotid revascularization

- Asymptomatic patients for carotid revascularization should be guided by assessment
 - Comorbid conditions
 - Life expectancy
 - Other individual factors
 - Include a thorough discussion of the risks and benefits of the procedure with an understanding of patient preferences



Carotid revascularization

- CEA in asymptomatic patients IIA
 - More than 70% stenosis of the internal carotid artery
 - Risk of perioperative stroke, myocardial infarction, and death is low
 - It is reasonable to choose CEA over CAS when revascularization is indicated in older patients, particularly when arterial pathoanatomy is unfavorable for endovascular intervention



Carotid revascularization

- CAS IIB

- It is reasonable to choose CAS over CEA when revascularization is indicated in patients with neck anatomy unfavorable for arterial surgery
- Patients with TIA or stroke and there are no contraindications to early revascularization
 - Intervention within 2 weeks of the index event is reasonable rather than delaying surgery



Carotid revascularization

- Prophylactic CAS might be considered in highly selected patients with asymptomatic carotid stenosis
 - Minimum 60% by angiography
 - 70% by validated doppler ultrasound
 - Effectiveness compared with medical therapy alone in this situation is not well established



Carotid revascularization

- Symptomatic or asymptomatic patients
 - High risk of complications for carotid revascularization
 - Either CEA or CAS
 - The effectiveness of revascularization versus medical therapy alone is not well established



Carotid revascularization

- Comorbidities

- Age >80 years, Class III or IV heart failure
- Left ventricular ejection fraction <30%
- Class III or IV angina pectoris
- Left main or multivessel coronary artery disease, need for cardiac surgery within 30 days
- MI within 4 weeks, severe chronic lung disease



Thank you