

# Endarterectomy and its Role in the Treatment of Ischemic Stroke

Jessica Natali\*

Department of Angiology, University of Benin, Benin City, Nigeria

## DESCRIPTION

Ischemic stroke is one of the leading causes of morbidity and mortality worldwide, necessitating effective strategies for prevention and treatment. Among the various interventions available, Carotid Endarterectomy (CEA) has long been a fundamental in the management of ischemic strokes associated with carotid artery stenosis. This article analyse the evolving role of endarterectomy in stroke treatment, considering its benefits, limitations, and the need for a multidisciplinary approach to optimize patient outcomes.

### Ischemic stroke and carotid artery stenosis

Ischemic stroke occurs when blood flow to the brain is obstructed, leading to tissue damage and neurological deficits. A significant proportion of ischemic strokes is attributed to atherosclerosis of the carotid arteries, which can lead to severe stenosis or occlusion. The narrowing of these vessels can result in reduced cerebral perfusion or the formation of emboli that travel to the brain, causing strokes. Carotid endarterectomy is a surgical procedure aimed at removing atheromatous plaque from the carotid artery to restore normal blood flow. This intervention is typically indicated for patients with symptomatic carotid artery stenosis greater than 50% or asymptomatic patients with stenosis greater than 70%, as supported by clinical guidelines and trials.

### Efficacy of endarterectomy

Numerous studies have demonstrated the efficacy of CEA in reducing the risk of stroke in patients with significant carotid artery stenosis. For symptomatic patients, the procedure can decrease the risk of recurrent strokes and improve overall prognosis. The benefit is particularly prominent in those with high-grade stenosis, where the risk of stroke is markedly increased. Endarterectomy not only elucidates the immediate risk of stroke but can also improve quality of life by restoring cerebral blood flow and reducing the long-term risk of further vascular events. As such, CEA remains a vital option in the therapeutic array against ischemic stroke.

### Emerging techniques and considerations

While traditional open surgical endarterectomy has been the standard approach, advancements in minimally invasive techniques, such as Carotid Artery Stenting (CAS), have emerged. CAS involves the placement of a stent within the carotid artery to maintain patency, often with a lower immediate risk of complications compared to traditional endarterectomy. This has led to ongoing discussions regarding the optimal management strategy for individual patients. The choice between CEA and CAS often depends on patient-specific factors, including anatomy, comorbidities, and the presence of significant carotid artery disease. A multidisciplinary approach involving neurologists, vascular surgeons, and interventional radiologists is important for customized treatment to the individual patient's needs.

### Risks and complications

Despite its benefits, CEA is not without risks. Potential complications include stroke, myocardial infarction, and local complications such as hematoma or nerve injury. Therefore, careful patient selection and thorough preoperative assessment are essential to minimize these risks. Furthermore, as with any surgical intervention, there exists a learning criteria associated with the procedure. Training and experience of the surgical team can significantly impact outcomes, emphasizing the importance of performing CEA in high-volume centers where expertise can enhance safety and efficacy.

### Future of endarterectomy in stroke management

The evolving landscape of stroke treatment necessitates ongoing research to refine the role of endarterectomy. Emerging studies focusing on patient-centered outcomes, long-term effects of intervention, and comparisons between endarterectomy and stenting will be critical for guiding clinical practice. Additionally, incorporating advances in imaging technology can enhance the precision of preoperative assessments, leading to more informed decision-making regarding the need for intervention. High-resolution imaging techniques, such as intravascular ultrasound

**Correspondence to:** Jessica Natali, Department of Angiology, University of Benin, Benin City, Nigeria, E-mail: natalijessica@gmail.com

**Received:** 29-Oct-2024, Manuscript No. AOA-24-35116; **Editor assigned:** 01-Nov-2024, PreQC No. AOA-24-35116 (PQ); **Reviewed:** 15-Nov-2024, QC No. AOA-24-35116; **Revised:** 22-Nov-2024, Manuscript No. AOA-24-35116 (R); **Published:** 29-Nov-2024, DOI: 10.35841/2329-9495.24.12.521

**Citation:** Natali J (2024). Endarterectomy and its Role in the Treatment of Ischemic Stroke. Angiol Open Access.12:521.

**Copyright:** © 2024 Natali J. This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

and magnetic resonance angiography, can provide detailed insights into plaque characteristics, potentially guiding treatment strategies.

## CONCLUSION

Carotid endarterectomy plays a pivotal role in the treatment of ischemic stroke associated with carotid artery stenosis, providing significant benefits in stroke risk reduction and improved patient outcomes. However, the advent of minimally invasive

techniques and the growing understanding of patient-specific factors necessitate a significance approach to treatment selection. A multidisciplinary framework that strengthens the expertise of various healthcare professionals will be essential in optimizing care for patients at risk of ischemic stroke. As we continue to advance our understanding of stroke management, endarterectomy will remain an important tool in our efforts to strive against this impairing condition, ensuring that patients receive the most effective and modified interventions available.