

Comprehensive Overview of Endarterectomy Procedures and Patient Outcomes

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DESCRIPTION

Endarterectomy is a surgical procedure aimed at removing atherosclerotic plaque or other blockages from the inner lining of arteries to restore proper blood flow. It is commonly performed in arteries such as the carotid, femoral and coronary arteries, with carotid endarterectomy being one of the most frequently performed types due to its role in preventing strokes. The procedure is essential for patients with significant arterial narrowing caused by atherosclerosis, which can lead to reduced blood flow, tissue ischemia, or life-threatening complications such as stroke or myocardial infarction. Understanding the surgical techniques and outcomes of endarterectomy provides valuable insights into its effectiveness, risks and long-term benefits.

The surgical technique for endarterectomy involves several critical steps to ensure the safe removal of plaque and restoration of blood flow. Initially, the patient is administered general or regional anesthesia depending on the location of the affected artery and the patient's overall health. The surgeon carefully exposes the artery through a precise incision, taking care to avoid damage to surrounding nerves and tissues. Once the artery is exposed, it is temporarily clamped to halt blood flow and an arteriotomy is performed to access the inner lining. Using specialized instruments, the surgeon carefully dissects and removes the atherosclerotic plaque, ensuring that the artery walls are smooth and free of debris that could cause future blockage. After the plaque is removed, the artery is closed using sutures, sometimes with the placement of a patch to widen the artery and improve long-term blood flow. Throughout the procedure, meticulous attention to detail is important to prevent complications such as arterial injury, embolization of plaque fragments, or excessive bleeding.

Endarterectomy can also be performed with adjunctive techniques to improve safety and outcomes. In carotid endarterectomy, for example, surgeons may use a temporary shunt to maintain cerebral blood flow while the artery is clamped. In some cases, intraoperative monitoring, including ultrasound or cerebral oximetry, is employed to ensure adequate blood supply to critical organs during the procedure. Advances in minimally invasive techniques have also allowed for

endarterectomy to be combined with endovascular procedures such as angioplasty or stenting in complex cases, offering patients improved recovery times and reduced surgical risks.

The outcomes of endarterectomy are generally favorable when performed on appropriately selected patients. Carotid endarterectomy, in particular, has been shown to significantly reduce the risk of stroke in patients with severe carotid artery stenosis. Studies indicate that the procedure is most beneficial for patients with symptomatic narrowing, such as those who have experienced transient ischemic attacks or minor strokes. Long-term follow-up often demonstrates sustained improvement in blood flow, reduced recurrence of arterial blockages and enhanced quality of life. Similarly, femoral or coronary endarterectomy can alleviate symptoms such as claudication or angina, prevent tissue damage and improve overall cardiovascular function.

However, like all surgical interventions, endarterectomy carries potential risks. Complications may include infection at the incision site, hematoma formation, nerve injury, restenosis of the treated artery, or, in rare cases, perioperative stroke or heart attack. Careful patient selection, preoperative evaluation and adherence to surgical protocols are essential to minimize these risks. Postoperative care, including anticoagulation therapy, monitoring for complications and lifestyle modifications such as smoking cessation, dietary management and regular exercise, further contribute to positive outcomes and long-term success.

Advances in surgical techniques, better understanding of vascular physiology and improved perioperative care have significantly enhanced the safety and efficacy of endarterectomy over the years. Modern outcomes are characterized by lower complication rates, shorter hospital stays and quicker recovery periods. Additionally, patient education and follow-up care play a vital role in ensuring lasting benefits, as patients are encouraged to manage cardiovascular risk factors and attend routine checkups to monitor arterial health.

CONCLUSION

In conclusion, endarterectomy is a highly effective surgical intervention for restoring blood flow in patients with arterial

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blockages caused by atherosclerosis. The procedure involves precise surgical techniques, careful handling of the artery and, in some cases, adjunctive measures to optimize outcomes. When performed on carefully selected patients, endarterectomy provides significant benefits, including reduced risk of stroke or heart attack, improved circulation and enhanced quality of life.

Despite potential risks, advances in surgical methods and comprehensive postoperative care have made endarterectomy a reliable and essential option in modern vascular surgery, emphasizing the importance of both technical skill and long-term patient management in achieving successful outcomes.