

Extracranial internal carotid artery aneurysm

A case report

D. F. DU TOIT, J. A. VAN ZYL, L. LAKER, J. H. GROENEWALD

Summary

A patient with an asymptomatic, right-sided internal carotid artery aneurysm is reported. The entity was accurately located and diagnosed pre-operatively by utilizing a duplex ultrasonographic scanner. Treatment comprised aneurysmectomy and restoration of arterial continuity by autogenous venous grafting. The patient recovered without the occurrence of any sequelae.

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Aneurysms of the extracranial carotid artery are rare when one considers the total number of aneurysms of the arterial system.¹⁻³ Because of the potential danger of serious complications, aneurysms in this location should be resected as soon after diagnosis as feasible.⁴

This article presents the clinical findings in a case of internal carotid artery aneurysm (rupture did not occur) and discusses the pre-operative diagnosis and management.

Case report

A 30-year-old Black man was admitted with a 6-month history of a pulsatile mass in the right anterior triangle of the neck. The mass had enlarged progressively during the past few months. There was no history of trauma, an inflammatory process, cardiac disease or transient ischaemic attacks.

Clinical examination revealed a pulsating mass measuring 3 x 2 cm in the right anterior triangle of the neck below the angle of the mandible. A prominent bruit was present on auscultation of the mass. The patient was normotensive and the differential blood count and blood sugar level were normal. Serological tests for syphilis were negative.

A clinical diagnosis of carotid body tumour was considered, and the patient was subjected to non-invasive duplex Doppler scanning of the right carotid tree. This study revealed a saccular aneurysm of the internal carotid artery situated immediately distal to the carotid artery bifurcation. The patient was operated on without undergoing pre-operative carotid angiography.

At operation the presence of a saccular aneurysm of the internal carotid artery measuring 3 x 2 cm was confirmed. The aneurysm was resected without difficulty and arterial continuity was achieved by means of interposition grafting with autogenous vein. Approximation of the cut ends of the artery after resection of the aneurysm without grafting was not possible.

Shunting to the brain during cross-clamping of the carotid artery was not used. Histological examination of the aneurysm revealed no evidence of atherosclerosis. The patient recovered without the occurrence of any sequelae.

Discussion

Carotid aneurysms should be differentiated from carotid body tumours, carotid kinking, tortuosity of the carotid vessels in hypertensive patients, cervical lymphadenopathy and branchial cleft cysts.^{1-3,5,6} A thrombosed aneurysm may be difficult to distinguish from true solid neck tumours.⁶

Surgical resection with reconstitution of the extracranial cerebral vasculature should be considered in every case in order to prevent associated neurological complications from thrombosis, rupture or embolization, resulting in transient ischaemic attacks and cerebral infarction.^{2,3} Previous reports emphasized the natural history of carotid artery aneurysm as one of progression and increased occurrence of symptoms. Aneurysmectomy with restoration of arterial continuity is the treatment of choice. In most cases mobilization of the elongated and sometimes dilated arterial tree allows resection of the aneurysm with direct end-to-end anastomosis.^{2,3} Internal jugular vein or saphenous vein grafting may be used to bridge the arterial defect, as in our patient. Proximal and distal ligation, banding and wrapping of the aneurysm are only of historical interest.¹ However, ligation has a definite place in the management of life-threatening complications of aneurysms.⁴ Occasionally carotid artery aneurysms may be irresectable because they extend to the base of the skull. Ligation of the aneurysm in these cases results in permanent neurological deficit, including hemiplegia, in 30 - 60% of patients.¹ During resection of a carotid aneurysm provision should be made for continued cerebral perfusion, even though on occasion this may not be necessary because the 'stump' pressure is satisfactory. Satisfactory cerebral perfusion can be provided by employing a temporary carotid shunt (either external or internal) with total-body heparinization.⁶

After excision of the aneurysm and reconstruction of the carotid artery convalescence is good in the uncomplicated case, and long-term results are excellent.⁶

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Department of Surgery, University of Stellenbosch and Tygerberg Hospital, Parowvallei, CP

D. F. DU TOIT, D. PHIL., F.R.C.S., *Principal Surgeon*

J. A. VAN ZYL, M.B. CH.B., *Registrar*

L. LAKER, B.SC., *Research Assistant*

J. H. GROENEWALD, M.MED. (CHIR.), *Principal Surgeon*