



Thrombosis of External Carotid Artery after Internal Artery Endarterectomy Causing Ischemic Events

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Abstract

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BACKGROUND: Carotid endarterectomy is a widespread and safe procedure associated with very little risk. Only at our hospital surgeons perform nearly 1000 of these surgeries annually, with serious complications occurring extremely rarely. Cerebral ischemic events due to external carotid artery (ECA) thrombosis following a successful internal carotid artery (ICA) endarterectomy are one of such complications.

CASE PRESENTATION: We present a case of ECA thrombosis, following ICA endarterectomy that caused ischemic events.

CONCLUSION: External carotid artery is very rarely the culprit artery for ischemic cerebral event, which is especially true after flawless internal CEA. However, as it is proven by this case, it can still happen and lead to major postprocedural complications.

Case Report

Male patient aged 63 was admitted to our hospital for the right-sided carotid endarterectomy (CEA) following the finding of significant right internal carotid artery (ICA) stenosis (between 70 and 75%) on both duplex scan and MSCT. Plaque was described as calcified. He was asymptomatic for carotid disease. His medical history included repeated myocardial infarctions, following which he underwent triple aortocoronary bypass with simultaneous left-sided CEA a year before this hospitalization. He also had diabetes mellitus, hypertension, and dyslipidemia and was a smoker.

His physical examination was unremarkable, but the echocardiography findings have shown wakened left ventricular ejection fraction, estimated at 30%.

After usual pre-operative preparation, the patient underwent the procedure. Surgery itself was unremarkable and was performed under general anesthesia with cervical block. Clamping time was around 10 min. On the 1st day after the operation, the patient complained on weakness in his left hand. Attending neurologist verified monoparesis of the

left hand and the adequate symptomatic therapy was administered. Control carotid artery duplex scan (CDS) was performed and found fresh thrombus of the right-sided ACE which was confirmed through MSCT (Figures 1 and 2). Brain CT revealed fresh ischemic lesion in the right parietal lobe.

After administering the adequate therapy for the next 3 days, the patient showed significant improvement and was discharged with minimal residual left hand monoparesis.

Discussion

Conventionally, severe stenosis or occlusion of ECA presents with face and neck pain, jaw claudication, or retinal ischemic symptoms and rarely as ipsilateral ischemic events [2]. However, a study [3] proved the importance of collateral circulation provided by ECA when ipsilateral ICA is occluded, maintaining the cerebral flow through intracranial connections, most notably due to anastomosis between angular artery and dorsal nasal artery which is the terminal

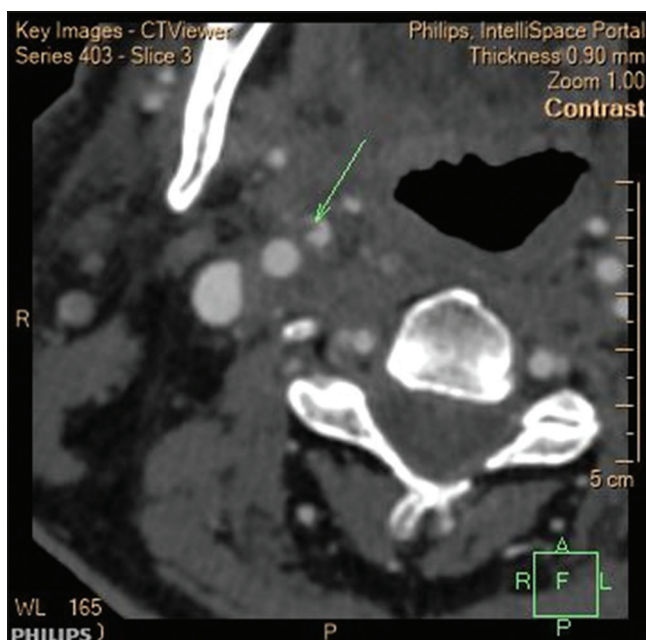


Figure 1: Thrombus in ECA, horizontal view

branch of the ophthalmic artery. When the ipsilateral ICA is patent, the most common mechanism of ipsilateral cerebral event is by paradoxical emboli from atherosclerotic ECA [4]. On the other hand, there is a common case of ligation or transcatheter embolization of ECA [5] because of epistaxis and in presence large, hypervascular tumors [6]. Ascher *et al.* proved that combined ECA endarterectomy with classic CEA is unnecessary as it yields little result [7], [8], furthermore, Archie *et al.* proved that CEA of both internal and

external carotid arteries lead to poor early and late outcomes, too [9].

Conclusion

External carotid artery is very rarely the culprit artery for ischemic cerebral event, which is especially true after flawless internal CEA. However, as it is proven by this case, it can still happen and lead to major postprocedural complications.

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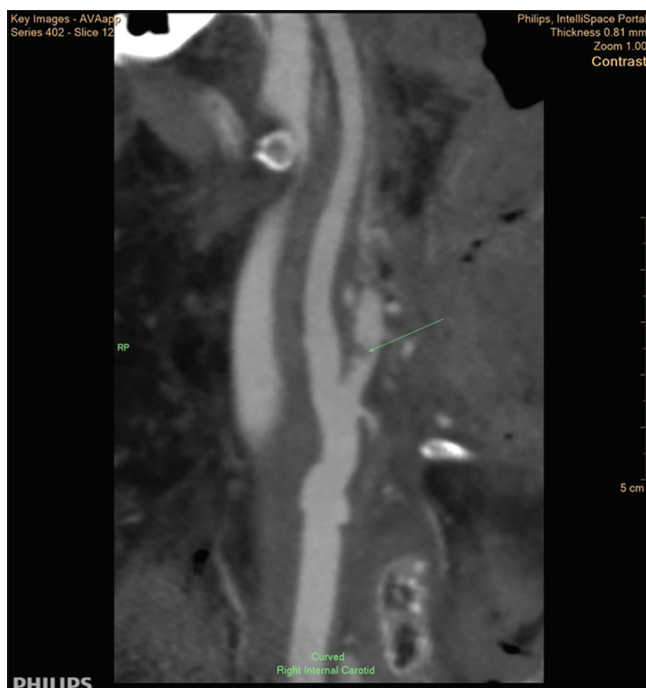


Figure 2: Thrombus in ECA, sagittal view