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Repeated carotid endarterectomy: Do plaques change over time?

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Disclosures

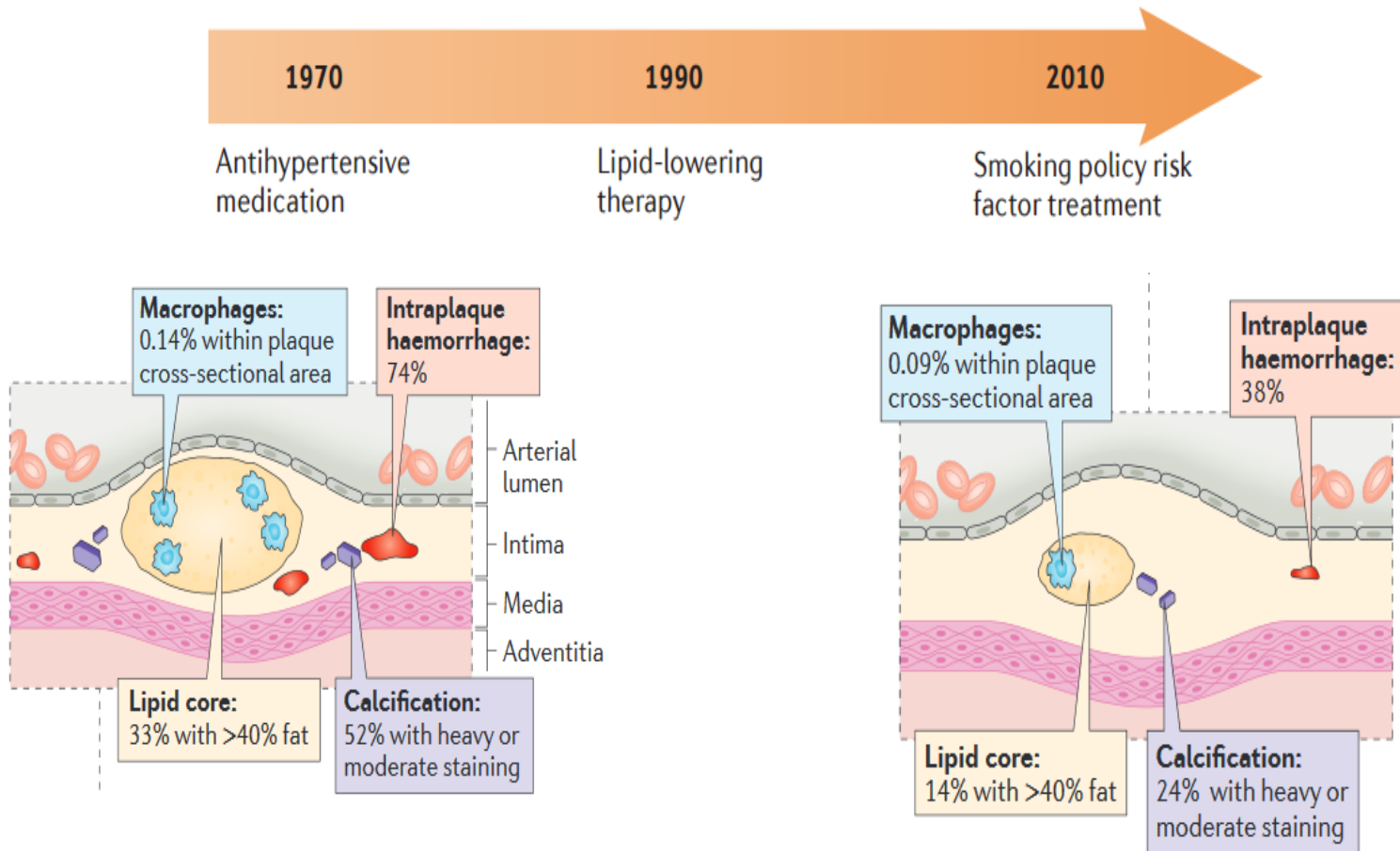
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✓ I do not have any potential conflict of interest

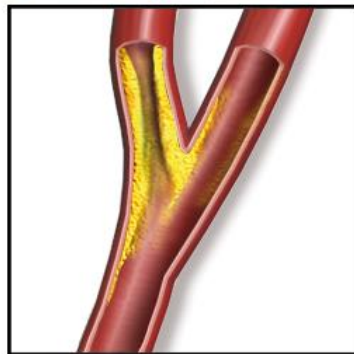
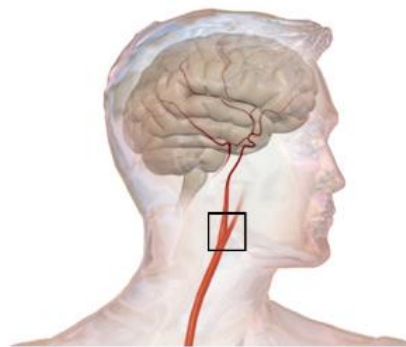


Time-Dependent Changes in Atherosclerotic Plaque Composition in Patients Undergoing Carotid Surgery



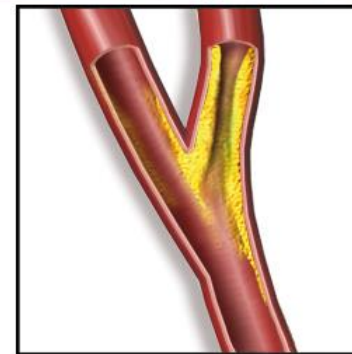
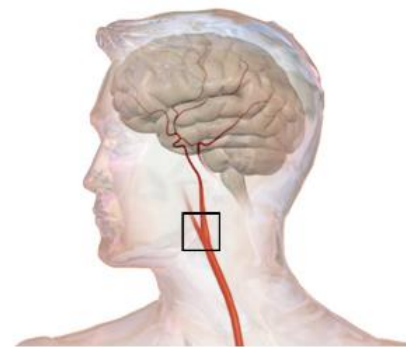
Research question:

Do plaques in patients operated on both carotid arteries show changes over time?



Ipsilateral

VS.

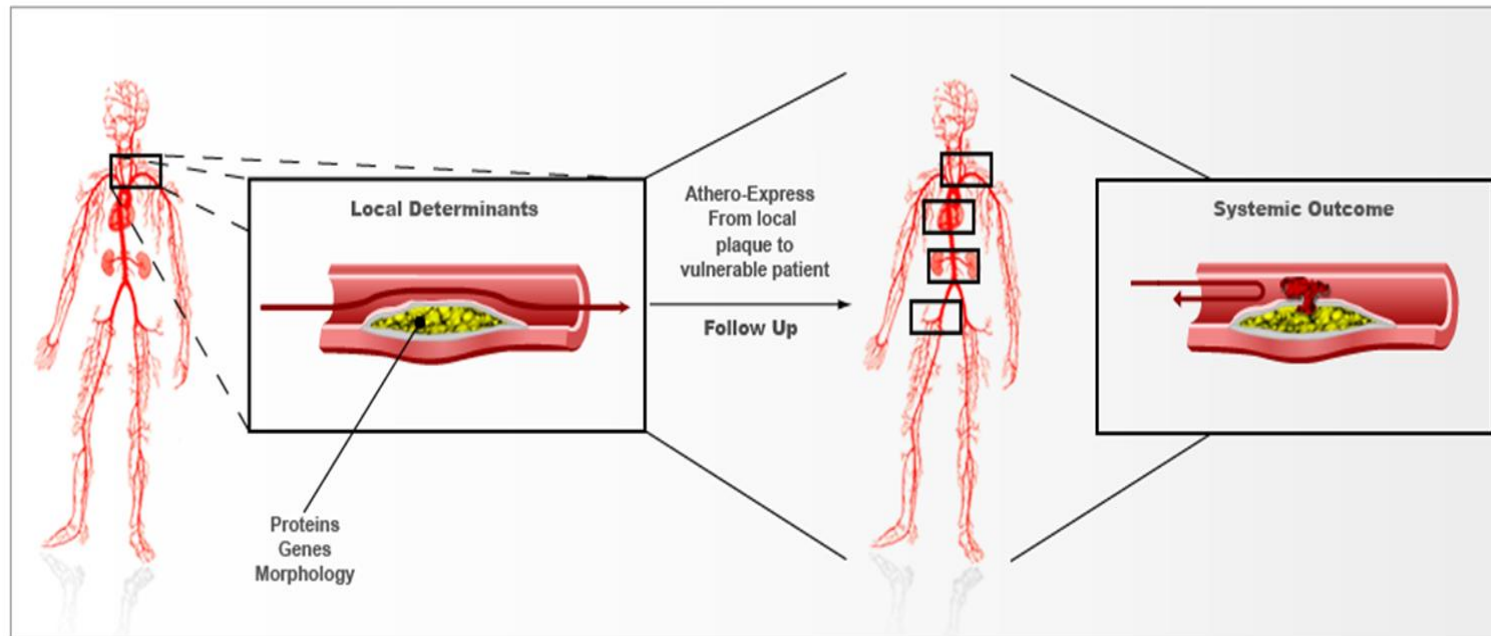


contralateral



Methods:

- Athero-Express Study (2003-,, ,,)
- n=2000+
- 56 patients operated on both left and right carotid artery
- Comparable timing and symptomatology at both endarterectomies



Results:

Semi-quantitative plaque characteristics	First plaque removal n=56	Contralateral plaque removal n=56	P-value
∅ Fibrous plaque	12(21.4)	22(39.3)	0.040
∅ Fibroatheromatous plaque	31(55.4)	22(39.3)	0.089
∅ Atheromatous	13(23.2)	12(21.4)	0.820
Moderate/heavy calcifications, % (n)	26 (47.3)	29(51.8)	0.634
Moderate/heavy collagen, % (n)	46(82.1)	50(89.3)	0.280
Presence of intraplaque hemorrhage, %(n)	39(69.6)	27(48.2)	0.021
Continuous plaque characteristics			
% of positive macrophage staining per plaque, (median IQR)	0.47 (0.12-1.06)	0.22 (0.05-0.59)	0.049
Mean number of microvessels per hotspot (median IQR)	9.38 (7.44)	8.45 (5.87)	0.492
% of positive SMC staining per plaque, (median IQR)	1.73 (2.30)	2.40 (4.76)	0.360



Results:

Table 2. Duration of statin treatment stratified by fist and contralateral carotid endarterectomy.

Initiation of statin treatment	First carotid endarterectomy N=48	Second carotid endarterectomy N=49	P-value
∅ On statin ≥ 1 year before CEA, n(%)	22(45.8)	35(71.4)	0.025
∅ On statin in year of CEA, n(%)	17(35.4)	7(14.3)	
∅ Not on statin treatment, n(%)	9(18.8)	7(14.3)	

Bold values were considered statistically significant with a $P < 0.05$.



Discussion/conclusions:

In patients operated on both carotid arteries, the second removed plaque showed a higher percentage of stable plaque features.

Duration of statin treatment could have contributed to stabilization of the second removed plaque.



Thank you

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