

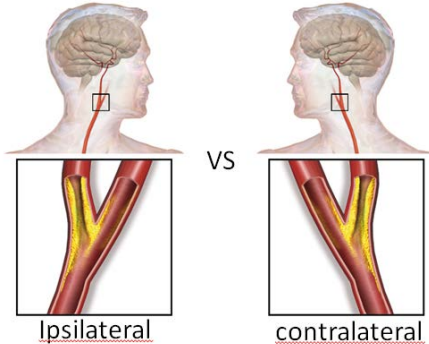
Repeated carotid endarterectomy: Do plaques change over time?

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Research question:

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



Methods en materials:

- Athero-Express Study (2003-)2000+ plaques
- 56 patients operated on both left and right carotid artery
- Comparable timing and symptomatology at both carotid endarterectomies (CEA)
- Paired analysis

Results:

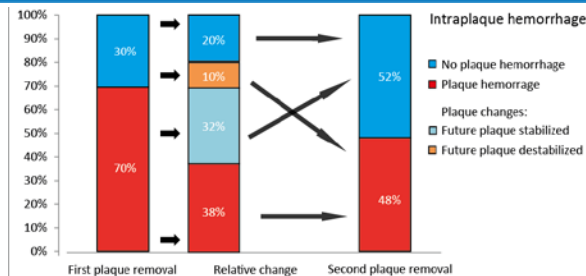
	First plaque removal	Contralateral plaque removal	P-value
Semi-quantitative plaque characteristics	n=56	n=56	
Ø Fibrous plaque	12(21.4)	22(39.3)	0.040
Ø Fibroatheromatous plaque	31(55.4)	22(39.3)	0.089
Ø Atheromatous	13(23.2)	12(21.4)	0.820
Moderate/heavy calcifications, % (n)	26 (47.3)	29(51.8)	0.634
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

Duration of statin treatment:

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

Features associated with new onset of intraplaque hemorrhage were diabetes and male sex.

Relative plaque changes:



Conclusion/Discussion:
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 the stabilization of the contralateral carotid artery.