

# Progression evaluation in number and total volume of atherosclerotic plaque using carotid duplex sonography

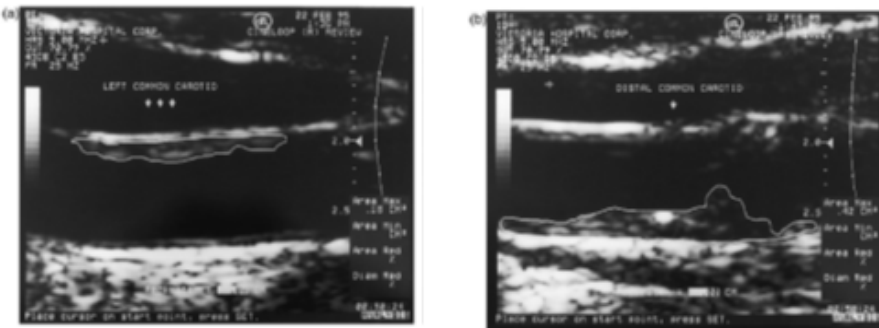
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## Introduction

- Area measure. of atherosclerotic plaques using CDU (J Hypertens 1997;15:49-55)



## Volume measurement for the plaque?

### Objectives

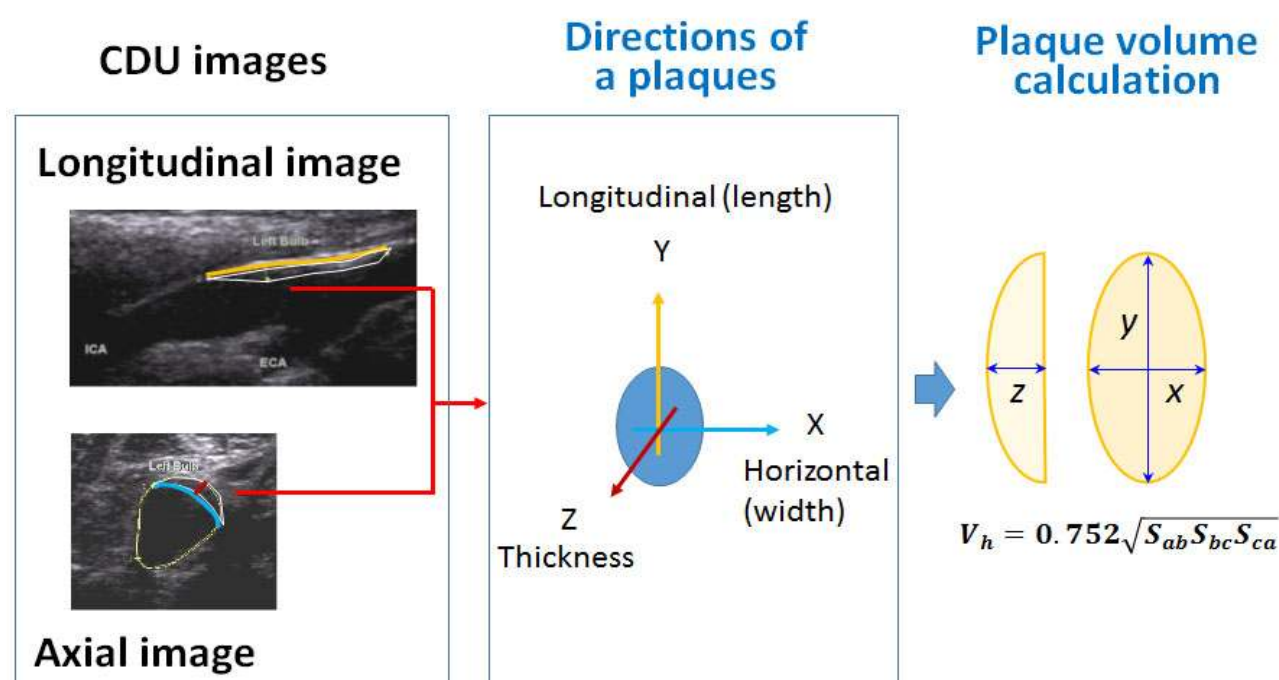
- To evaluate progression in total no. and Vol. of atherosclerotic plaques
- developing in CCA & ICA
  - measured by CDU

### Methods

#### Patients & CUD device

- : 134 patients
- : underwent initial and F/U CDU (Acuson X300, Siemens)
- : for both CCA and ICA between mean 2-years interval

#### Location evaluation and volume measure.



### Results

#### Demographics & risk factors

Parameters	Values
F/U duration (days)	733 ± 417
Age (years)	71.6 ± 10.0
Sex (M:F)	92:59
Risk factors	
Smoking	24 (16%)
Alcohol	36 (24%)
Hypertension	95 (63%)
Diabetes	48 (32%)
AF hx	26 (17%)

#### Plaque no. and vol. changes on f/u CDU

	Initial	F/U
<b>Plaque no.</b>		
Total	2.4 ± 1.6	3.4 ± 1.8
CCA	0.4 ± 0.7	0.6 ± 0.9
ICA	2.0 ± 1.3	2.8 ± 1.4
<b>Plaque vol. (mm<sup>3</sup>)</b>		
Total	0.981 ± 1.173	1.406 ± 1.387
CCA	0.191 ± 0.425	0.289 ± 0.691
ICA	0.790 ± 0.961	1.116 ± 1.013

#### Multivariate analysis

	Total plaque volume		Total no. of plaques	
	B	p-value	B	p-value
(Constant)	0.366	0.757	3.218	0.071
Age	0.005	0.423	0.001	0.942
TG	0.001	0.337	0.003	0.076
T-Chol	0.000	0.959	0.001	0.836
Cr	0.000	0.993	-0.088	0.232
UA	-0.007	0.872	0.027	0.651
Glucose	-0.002	0.219	0.001	0.678
Hb	0.065	0.089	-0.022	0.705
WBC	-0.026	0.275	-0.068	0.086
Platelet	0.000	0.814	-0.001	0.489
Homocysteine	0.004	0.634	-0.006	0.639
Hs-CRP	0.001	0.767	0.000	0.952
HbA1C	-0.053	0.459	-0.112	0.248
Fibrinogen	0.000	0.801	0.000	0.865
HDL-C	0.012	0.396	0.030	0.193
LDL-C	0.002	0.758	-0.004	0.673
Apo-A	-0.004	0.535	-0.016	0.155
Apo-B	-0.006	0.437	0.007	0.569
LP(a)	0.006	0.083	0.001	0.837
Smoking	0.196	0.053	0.061	0.676
Hypertension	0.110	0.369	-0.108	0.572
Diabetes	-0.406	0.020	-0.548	0.041
AF	-0.083	0.594	-0.234	0.346

### Conclusion

On CDU f/u in mean 2 years

1. Plaque number on carotid arteries  
↑ from 2.4 to 3.4
2. Plaque volume on carotid arteries  
↑ from 0.981 mm<sup>3</sup> to 1.406 mm<sup>3</sup>

Diabetes