

## Carotid Artery Intima-Media Thickness in Behcet's Disease without Significant Cardiovascular Involvement

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**Background :** Behcet's disease (BD) is a systemic disorder associated with characteristic vasculitis and recurrent inflammations in oral mucosa, skin, eye, and external genitalia. There are only few reports describing the frequency and clinical features of cardiovascular involvement in BD. To investigate the cardiovascular manifestations of BD, echocardiogram and measurement of intima-media thickness (IMT) of carotid arteries were performed. **Methods :** Carotid IMT was measured by B-mode ultrasound and conventional echocardiogram was obtained prospectively in 40 patients (24 male,  $39.1 \pm 8.5$  years) who diagnosed by international diagnostic criteria of Behcet's disease and 20 healthy controls (13 male,  $40.2 \pm 5.1$  years). Clinical data including age of onset, duration of disease, history of medication, activity score, and laboratory data were analyzed. **Results :** Mean age of patients was  $39.1 \pm 8.5$  years,  $32.5 \pm 11.5$  years at onset age. Duration of disease was  $5.2 \pm 4.0$  years. Cardiac involvement and major vessel involvement were not identified, however, minor vascular involvement was identified as 2 cases of deep vein thrombosis, 4 superficial thrombophlebitis, and 2 pseudoaneurysm. Carotid IMT in BD group was significantly larger than in control group ( $0.71 \pm 0.22$  mm vs.  $0.59 \pm 0.09$  mm,  $p < 0.01$ ). Carotid IMT in patients with posterior uveitis or retinal vasculitis was larger than in patients without those ( $0.85 \pm 0.21$  mm vs.  $0.64 \pm 0.10$  mm,  $p = 0.007$ ), but there was no difference of IMT according to minor vascular involvement. Carotid IMT has a positive correlation with patient's age and total clinical activity score, but not with the age of disease onset and disease duration. **Conclusion :** There is no significant cardiovascular involvement in BD, but carotid IMT was thicker in BD than in control.

## Differential responses of the individual carotid wall thickness to systemic risk factors

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**Backgrounds :** The clinical significance of the thickness of each layer of the common carotid artery (CCA) are not well defined. We assessed the clinical significance of intima thickness (IT), media thickness (MT), and intima-media thickness (IMT) of the CCA using B-mode ultrasonographic image processing. **Methods :** One hundred seventy consecutive patients underwent CCA scanning. A total of 150 patients could be analyzed using an ultrasonographic image processing, devised for individual measurement of mean IT, MT, and IMT. The each layers of the CCA were identified after acquiring the edge images using edge-detection algorithm and probabilistic detection method. **Results :** By univariate analysis, IT (ranged from 0.27 to 0.41 mm) was associated with age, while MT (from 0.27 to 0.74 mm) and IMT (from 0.49 to 1.12 mm) were associated with age, fibrinogen, and creatinine. Among atherosclerosis risk factors, hypertension was associated with thickness of all 3 layers, while smoking was associated with IT only. By multivariate analysis, the IT was associated with age, hypertension, and smoking, the MT was associated with age, hypertension, blood urea nitrogen level, and diabetes mellitus, and the IMT was associated with age, hypertension, and blood urea nitrogen level. **Conclusions :** Carotid IT is associated with smoking and MT is associated with diabetes mellitus, while age and hypertension are associated with thickness of all 3 arterial layers. Our results suggest a differential response of the vasculature to systemic risk factors.

