Cardio Ankle Vascular Index

CAVI

CAVI Clinical Report

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Effectiveness of CAVI and IMT

Vol. 1

FUKUDA DENSHI CO.,LTD.
39-4, Hongo 3-chome, Bunkyo-ku, Tokyo 113-8483, Japan
Tel: +81-3-5684-1455 Fax: +81-3-3814-1222
www.fukuda.com

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Diagnostic Values of Coronary Angiography (CAG) and Arteriosclerosis Index (Cardio-Ankle Vascular Index, CAVI) in the Cases with Coronary Lesion Suspected

High CAVI and Intima-Medial Thickness (IMT) ultrasonography

Ultrasonography is used in many institutions to assess IMT as an arteriosclerosis index. However, the approach is local assessment, since the target region is limited to the carotid artery. Recently, the arteriosclerosis index CAVI (cardio-ankle vascular index) is favorably evaluated, as many studies have reported that the index presents arteriosclerotic degrees involving the aorta while promptly revealing functional changes in the arteries. In addition to such an excellent performance, the good reproducibility and easy examination method have made the index widely used.
Here, I am showing the importance of early detection of functional changes of the arteriosclerosis by comparing between CAVI, coronary angiography and carotid echography of the organic and functional changes of the arteriosclerosis.

Yoh Miyashita MD,
Associate Professor,
Internal Medicine,
Toho University
Sakura Medical Center

IMT + CAVI
(Ultrasound) (Arteriosclerosis Index)

Early detection of organic and functional changes in blood vessels

CAVI criteria

CAVI < 8.0	In normal range
8.0 ≦ CAVI < 9.0	Border line
9.0 ≦ CAVI	Possible Arteriosclerosis

CAVI: ABNORMAL / IMT: NORMAL

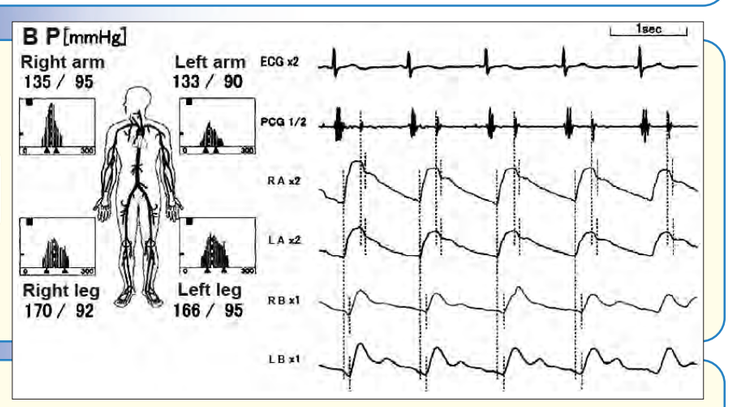
Case 1 Early 50s Male
- Clinical History: Hyperlipidemia, Hypertension, Diabetes
- Smoking History: Stop smoking since 10 years ago

Outpatient with diabetes, hyperlipemia and hypertension. Feeling chest disorder at exertion, the patient came to the Cardiovascular Center. Since angina pectoris was suspected, the case underwent cardiac catheterization for the purpose of further investigation.

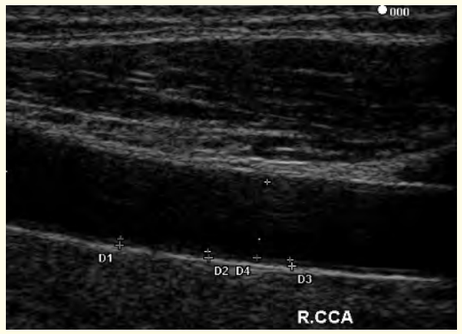
CAVI TEST

CAVI:9.4

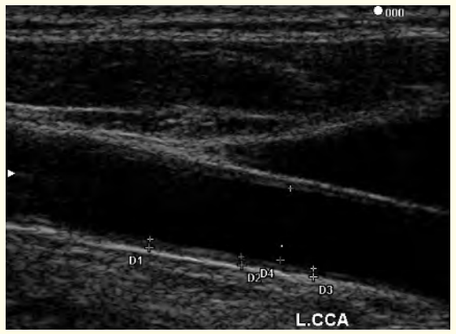
Diagnosis: Possible Arteriosclerosis



IMT TEST



R-CCA: mean-IMT 0.7 Plaque-Score: 1.5

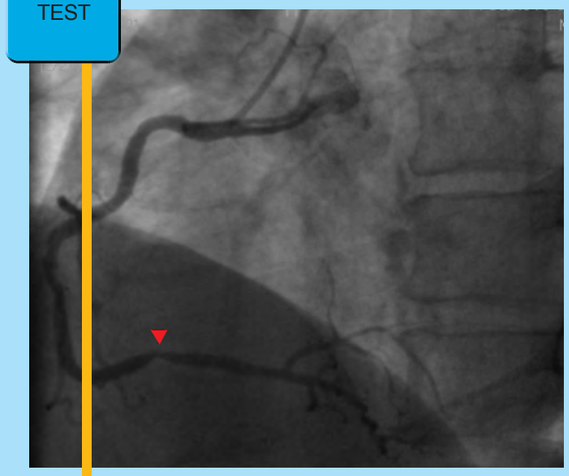


L-CCA: mean-IMT 0.7

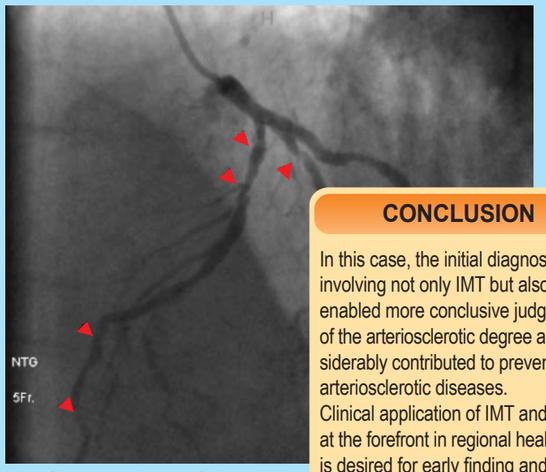
IMT 1.1 Below

Diagnosis: **In normal range**

CAG TEST



RCA Stenosis



LAD Stenosis CX Stenosis

CONCLUSION

In this case, the initial diagnosis involving not only IMT but also CAVI enabled more conclusive judgment of the arteriosclerotic degree and considerably contributed to prevention of arteriosclerotic diseases.
Clinical application of IMT and CAVI at the forefront in regional healthcare is desired for early finding and early treatment.

CAVI : ABNORMAL / IMT : NORMAL

Case 2

Late 60s Male

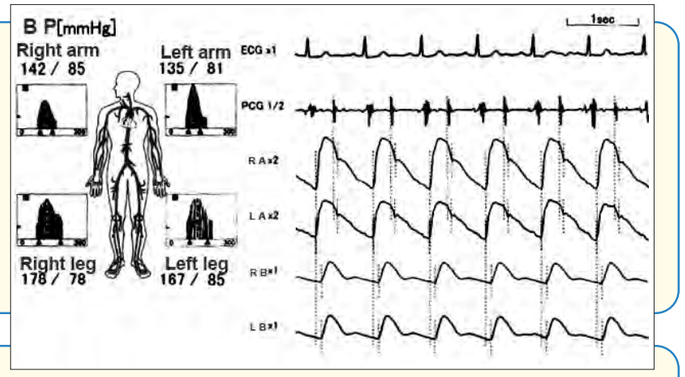
- Clinical History: Hyperlipidemia, Hypertension
- Smoking History: Stop smoking since 15 years ago

Because of frequent exertional dyspnea, the patient came to the Medical Center as an emergency outpatient. Since ischemic heart disease was strongly suspected, he was hospitalized for the purpose of further investigation and underwent cardiac catheterization.

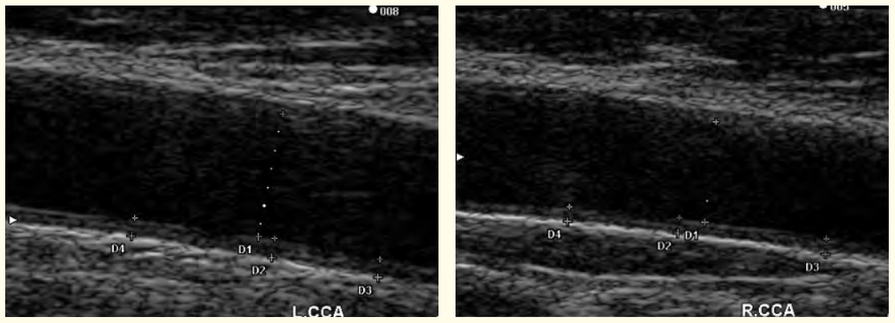
CAVI TEST

CAVI:11.8

Diagnosis: Possible Arteriosclerosis



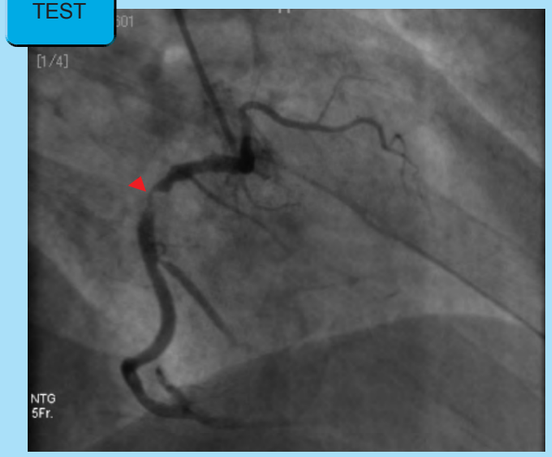
IMT TEST



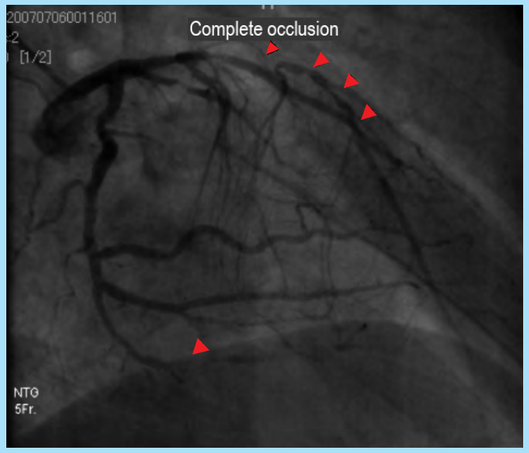
R-CCA: mean-IMT 0.96 Plaque-Score: 4.3 L-CCA: mean-IMT 1.0

IMT 1.1 Below Diagnosis: **In normal range**

CAG TEST



RCA Stenosis



LAD Complete occlusion CX Stenosis

Case 3

Early 60s Male

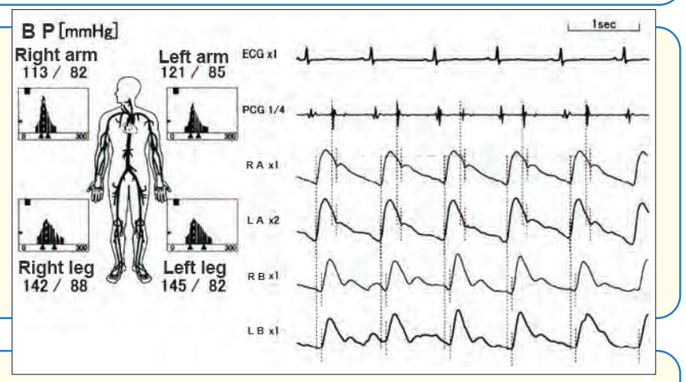
- Clinical History: Hyperuricemia,Hyperlipidemia, Hypertension, Diabetes
- Smoking History: No smoking

Recommended to receive a specific test of angina pectoris, the patient was attacked by an acute myocardial infarction during traveling and underwent emergency catheterization. After then, light exertion caused a fit of chest pain, letting us judge unstable angina and conduct percutaneous coronary intervention (PCI) for the right coronary artery.

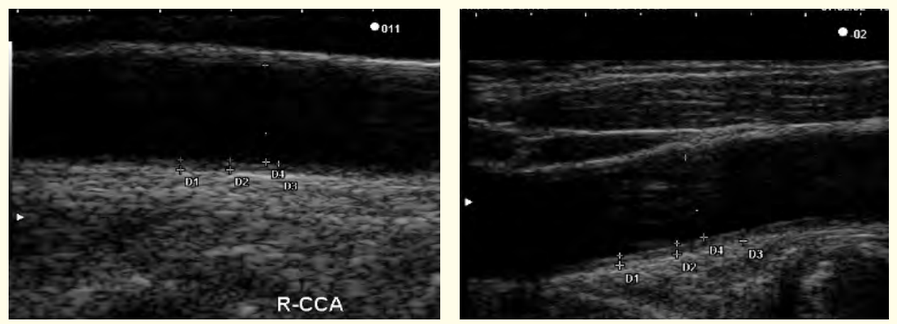
CAVI TEST

CAVI:11.0

Diagnosis: Possible Arteriosclerosis



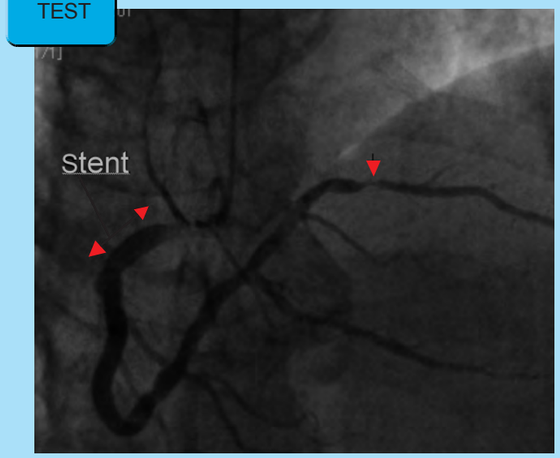
IMT TEST



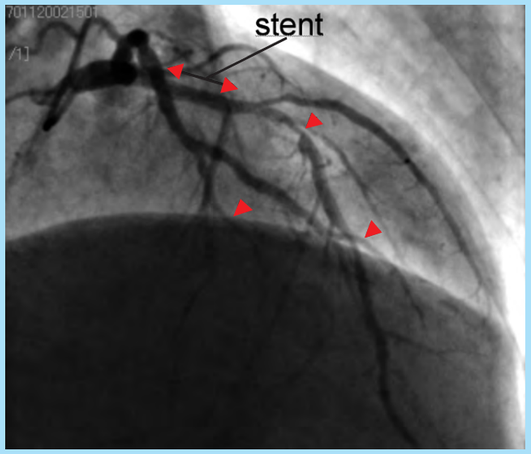
R-CCA: mean-IMT 0.7 Plaque-Score: 0 L-CCA: mean-IMT 0.9

IMT 1.1 Below Diagnosis: **In normal range**

CAG TEST



RCA Stenosis



LAD Stenosis CX Stenosis

CAVI : ABNORMAL / IMT : ABNORMAL

Case 4

Late 60s Female

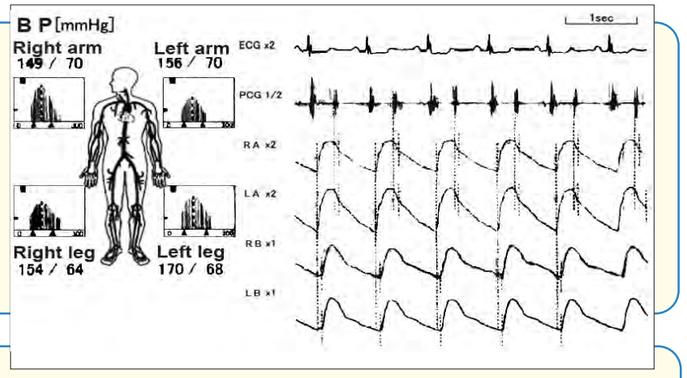
- Clinical History;
  Diabetes, Hyperlipidemia, Hypertension
- Smoking History; No smoking

Sent from a nearby clinic for the purpose of further investigation of an oppressive sense in the chest.
Myocardial perfusion scintigraphy let us suspect ischemic heart disease and conduct cardiac catheterization.

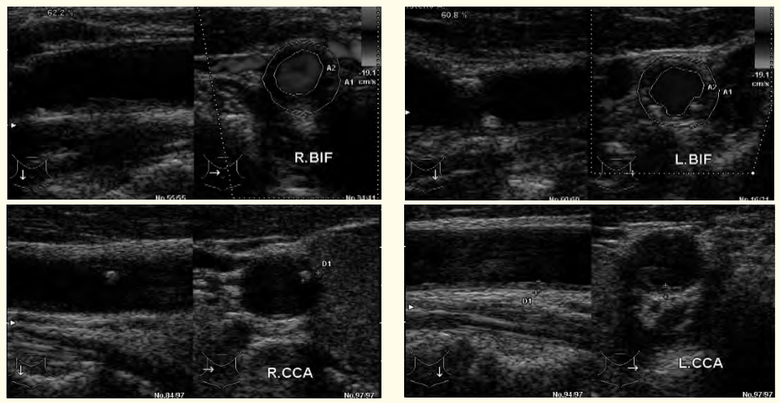
CAVI TEST

CAVI:9.9

Diagnosis:
Possible Arteriosclerosis



IMT TEST

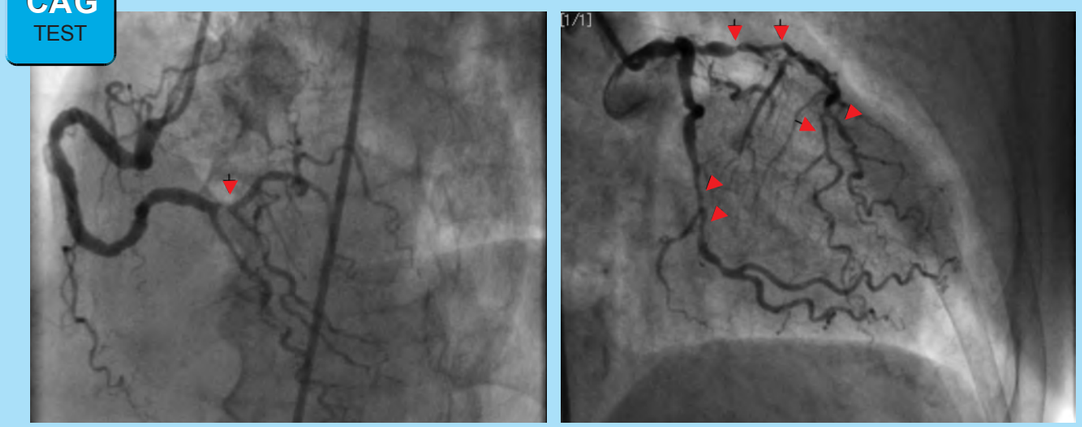


R-CCA: mean-IMT 0.9 max-IMT 2.7
Plaque-Score: 13.4

L-CCA: mean-IMT 0.9 max-IMT 2.6

IMT 1.1 Above Diagnosis: **Abnormal**

CAG TEST



RCA Stenosis

LAD Stenosis CX Stenosis

Case 5

Late 50s Male

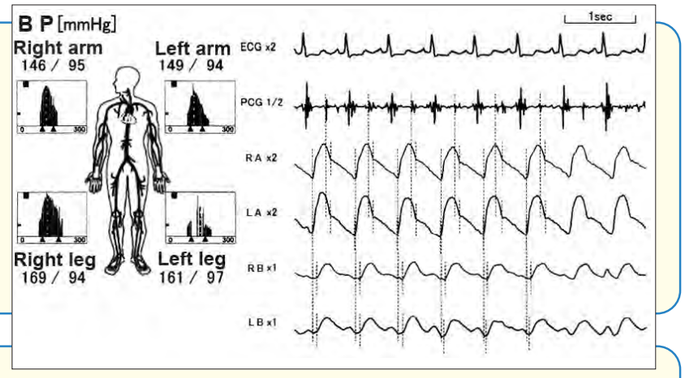
- Clinical History;
  Diabetes, Hyperlipidemia
- Smoking History; No smoking

Sent from a nearby clinic for the purpose of further investigation of exertional dyspnea.
Cardiac ultrasonography revealed kinetic disorder in the wall, letting us hospitalize the patient for the purpose of further investigation of ischemic heart disease and conduct cardiac catheterization.

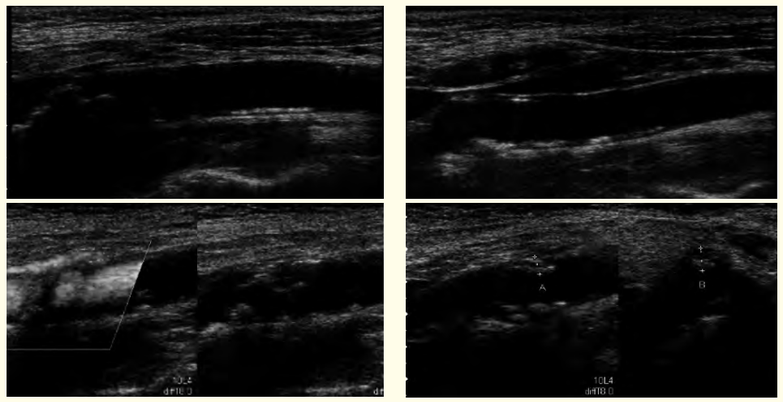
CAVI TEST

CAVI:11.1

Diagnosis:
Possible Arteriosclerosis



IMT TEST

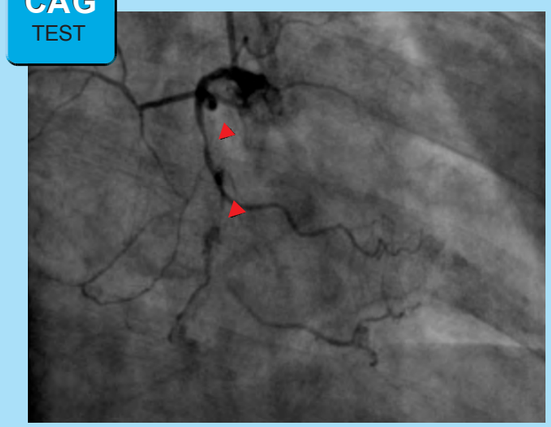


R-CCA: mean-IMT 0.8 max-IMT 4.3
Plaque-Score: 20.4

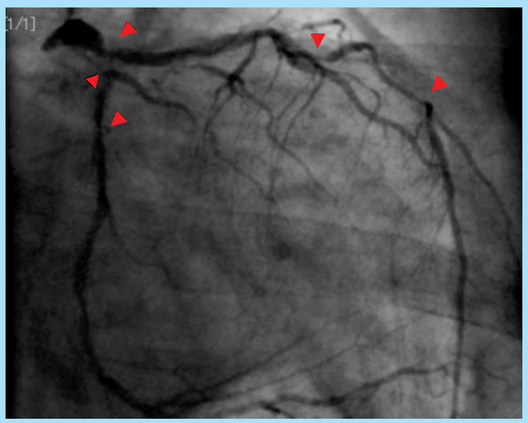
L-CCA: mean-IMT 0.9 max-IMT 3.8

IMT 1.1 Above Diagnosis: **Abnormal**

CAG TEST



RCA Complete occlusion



LAD Stenosis CX Stenosis