Frank’s sign: silent predictor of coronary artery disease

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A 60 year old non hypertensive, non diabetic male presented in casualty with complaints of exertional breathlessness of 2 days duration. ECG and cardiac enzymes were within normal limit. General physical examination was normal except for the finding of bilateral ear lobe creases (Figure 1 & 2). With the possibility of angina equivalent patient was posted for coronary angiography which revealed total occlusion of left anterior descending artery and right coronary artery, 80% obtuse marginal and 70% left circumflex artery. LVEF was 25% and patient was advised for high risk CABG. Creased earlobes (Frank’s sign) were alleged to be associated with an increased risk of coronary artery disease.
More recent studies have concluded that, ear lobe creases are silent indicators of atherosclerotic vascular disease when they are not congenital. The explanation is non creased healthy ear lobes have a rich vascular supply. With age, diffuse atherosclerotic process withers this vascular supply and ear lobe collapses to form the crease linking generalized coronary atherosclerosis and CAD to the same.¹

Ninety percent of patients with age over 50 years with significant triple vessel coronary disease have a deep ear lobe crease.² A unilateral ear lobe crease was found in one study to be associated with an intermediate degree of coronary obstruction.³

To conclude, Frank’s sign should we consider a strong and independent risk factor for CAD though not diagnostic for the presence of CAD. Sensitivity of Frank’s sign is 60%.⁴

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REFERENCES

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