CLINICAL PICTURE

Frank’s sign

Case presentation
An 84-year-old man with hypertension, diabetes and hypercholesterolemia but without documented coronary artery disease presented to the emergency department with a 2-week of dizziness and malaise. Physical examination revealed irregular heart beat but without neurological abnormalities. A diagonal (Frank’s sign) and pre-auricular creases in both earlobes were noted (Figure 1A) and the electrocardiography revealed complete atrial-ventricular (AV) block (Figure 1B). His symptoms recovered after permanent pacemaker implantation.

Frank’s sign, which is a diagonal earlobes creases run backward at 45° angle. The hypothesized pathophysiological mechanism of this dermatological changes were thought to be related to circulating free radical oxidative stress and the increase in intima-median thickness of blood vessels. It is also indicative of premature aging with loss of dermal and vascular elastic fibres. Large population prospective cohort study has exhibited that Frank’s sign is potentially an independent risk factor for coronary artery disease and the correlation to cerebrovascular disease has been reported too. To the best of our knowledge, there was no literature reported the association of complete AV block with Frank’s sign. To some extent, complete AV block could be considered as a cardiovascular event and routine inspection of the earlobes is an essential part of the physical examination in clinical practice.

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Figure 1. (a) Photograph shows the diagonal earlobe and preauricular creases. (b) Electrocardiogram demonstrates complete AV block.
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References