Frank's sign in recurrent triple-vessel disease

Ryohei Ono , Togo Iwahana, Yoshio Kobayashi

Department of Cardiovascular Medicine, Chiba University Graduate School of Medicine, Chiba, Japan

Correspondence to

Dr Ryohei Ono;
ryohei_ono_0820@yahoo.co.jp

Accepted 9 September 2020

DESCRIPTION

A 78-year-old man with hypertension, diabetes and dyslipidaemia presented with acute chest pain, following a history of myocardial infarction 11 years ago. Percutaneous coronary intervention was performed to implant bare-metal stents in the stenotic right coronary artery, left anterior descending artery and left circumflex coronary artery (figure 1A,B). A follow-up coronary angiography 10 years ago showed no significant stenosis (figure 1C,D). A follow-up coronary angiography 10 years ago showed no significant stenosis (figure 1C,D).

On arrival, his vital signs were stable and physical examination revealed Frank's sign, a diagonal crease in the earlobe that runs backward from the tragus at a 45° angle across the lobule to the rear edge of the auricle (figure 2). A coronary angiography showed the triple-vessel disease again (figure 1E,F). He subsequently underwent coronary artery bypass graft surgery and he was relieved from the chest pain. Frank's sign was first described by Frank in 1973.¹ It is associated with cardiovascular risk factors and is originally described to predict coronary artery disease.² A 35-year-long large population prospective study revealed visible age-related signs such as Frank's sign, male pattern

Figure 2 Bilateral Frank's sign showing a diagonal crease in the earlobe that runs backward from the tragus at a 45° angle across the lobule to the rear edge of the auricle.

Figure 1 (A, B) Preoperative coronary angiography showing triple-vessel disease. (C, D) Follow-up coronary angiography after percutaneous coronary intervention showing no significant stenosis. (E, F) Present coronary angiography showing triple-vessel disease recurrence.

baldness and xanthelasmata, associated with increased risk of ischaemic heart disease independent of chronological age and other cardiovascular risk factors.^{2,3} Frank's sign in patients less than 60 years of age is reported as a useful diagnostic physical examination since the prevalence of diagonal ear lobe crease increases with age, as does coronary artery disease.^{4,5} Earlobe inspection to elicit Frank's sign is, hence, crucial in predicting atherosclerotic disease.⁶

And true enough, coronary angiography revealed recurrence of triple-vessel disease. This case indicates that Frank's sign can be a clue to identify even triple-vessel disease.

Learning points

- ▶ Frank's sign is associated with cardiovascular risk factors.
- ▶ Earlobe inspection to elicit Frank's sign is crucial in predicting atherosclerotic disease.
- ▶ Frank's sign can be a clue to identify even triple-vessel disease.

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To cite: Ono R, Iwahana T, Kobayashi Y. *BMJ Case Rep* 2020;**13**:e239173. doi:10.1136/bcr-2020-239173

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Contributors RO contributed to conception and design, drafting the article and was involved in management of the case. TI and YK contributed to final critical appraisal of the article and were involved in management of the case.

Funding The authors have not declared a specific grant for this research from any funding agency in the public, commercial or not-for-profit sectors.

Competing interests None declared.

Patient consent for publication Obtained.

Provenance and peer review Not commissioned; externally peer reviewed.

ORCID iD

Ryohei Ono <http://orcid.org/0000-0002-4875-7470>

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