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**CLINICAL VIGNETTE**

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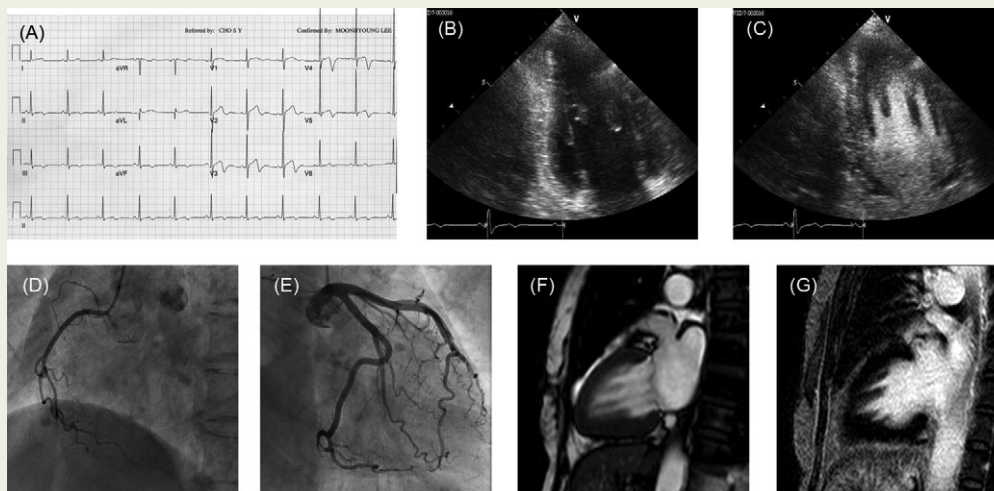
**Uncommon variation in the papillary muscles presenting with ST elevation and T-wave inversion**

**Chi Young Shim, Jong-Won Ha, Sung Jin Hong, Jinsun Kim, Eui-Young Choi, Namsik Chung, and Seung-Yun Cho\***

Cardiology Division, Yonsei Cardiovascular Center, Yonsei University College of Medicine, Seodaemun Gu, 120-752 Seoul, Republic of Korea

\* Corresponding author. Tel: +82 2 2228 8442, Fax: +82 2 393 2041, Email: sycho@yuhs.ac or cysprs@medimail.co.kr

A 61-year-old woman was admitted for intermittent chest discomfort that had been present for 2 months. She was normotensive and denied any past history of medical illness. On physical examination, grade 2 systolic click murmur at the left ventricular (LV) apex was auscultated. A routine electrocardiogram (Panel A) revealed ST-segment elevation and T-wave inversion in V<sub>2</sub> to V<sub>5</sub> pre-



cordial leads with high voltage of QRS complex which made us suspect possible hypertrophic cardiomyopathy. Two-dimensional echocardiography showed no evidence of LV hypertrophy in all segments. However, unexpectedly, unusual structures of papillary muscles were detected. The papillary muscles were interlinked each others with numerous fine tendons and formed parallel arrangement without hypertrophies (Panel B). The anterior mitral leaflet was mildly prolapsed without significant mitral regurgitation. To clarify the structures of papillary muscles, perflurocarbon-exposed sonicated dextrose albumin (PESDA), a pulmonary circulation passing contrast agent, was injected via an antecubital vein. Contrast echocardiogram with PESDA showed contrast filling and opacification of the LV cavity showed more clearly the unusual variation of papillary muscles with four parallel bellies (Panel C). Coronary angiography showed no significant luminal narrowing (Panels D and E). A contrast-enhanced image obtained by magnetic resonance imaging showed consistent findings in structures (Panel F) and no delayed hyperenhancement of four papillary muscles, so there was no evidence of fibrosis in the papillary muscles (Panel G). This case illustrates that the variations of the papillary muscles should be considered for differential diagnosis of abnormal electrocardiographic findings such as ST elevation and T-wave inversion.