Acute aortic dissection with left coronary artery obstruction

Hiroki Uehara¹, Masaki Okuyama¹, Yutaro Oe¹, Takaki Yoshimura¹, and Takahiro Gunji¹

¹Kinikyo Chuo Hospital

May 10, 2023

Case Images

Acute aortic dissection with left coronary artery obstruction

Hiroki Uehara*, Masaki Okuyama, Yutaro Oe, Takaki Yoshimura, Takahiro Gunji

Department of Cardiovascular Medicine, Kin-ikyo Chuo Hospital, Sapporo, Japan

*Corresponding author/requests for reprints: Dr. Hiroki Uehara, Department of Cardiovascular Medicine, Kin-ikyo Chuo Hospital, 9-1 Higashi naebo 5-Jo 1-chome, Higashi-ku, Sapporo, Hokkaido 007-8505, Japan

Tel: +81-11-782-9111; Fax: +81-11-782-5451

Email: haraki0921mr.chilkko@gmail.com

Key words: Acute aortic dissection, acute myocardial infarction, coronary angiography, percutaneous coronary intervention.

Key Clinical Message: If the electrocardiogram shows ST-segment elevation in lead aVR, the complication of aortic dissection must always be assumed.

Case Images

A 54-year-old Japanese man with sudden chest discomfort visited our hospital. Electrocardiography revealed ST-segment elevation in lead aVR with a mirror image (Picture A). Echocardiography showed no evidence of pericardial effusion, ascending aortic flap, or aortic regurgitation, but wall-motion impairment of the anterior and lateral walls of the left ventricle was observed. Emergency coronary angiography revealed severe stenosis in the left main trunk (Picture B). The patient suddenly went into cardiopulmonary arrest, and percutaneous cardiopulmonary support was initiated. Intravascular ultrasound showed an extensive false lumen extending around the true lumen (Picture C). Angiography of the coronary arteries showed uniphasic contrast of the ascending aorta compressed by the false lumen (Picture D).

In type A acute aortic dissection, ST-segment elevation in lead aVR is a myocardial infarction complication, and it is the strongest predictor of in-hospital death (1). If electrocardiography shows this change, the complication of aortic dissection must always be assumed.

Conflicts of Interest Statement: The authors report no potential conflicts of interest associated with this research.

Compliance with ethical standards: The patient’s written informed consent for the publication was obtained by his family, and his identity has been protected.

Reference

**Figure legend**

A: Electrocardiography revealed ST-segment elevation in lead $a_VR$ with a mirror image/

B: Emergency coronary angiography revealed severe stenosis in the left main trunk.

C: Intravascular ultrasound showed an extensive false lumen extending around the true lumen.

D: Angiography of the coronary arteries showed antegrade contrast of the ascending aorta compressed by the false lumen.

**Hosted file**

Uehara - Figure.pptx available at https://authorea.com/users/616728/articles/642561-acute-aortic-dissection-with-left-coronary-artery-obstruction