

1047 **Subclavian Artery Stenting for Coronary-Subclavian Steal Syndrome After Left Internal Thoracic Artery-to-Left Anterior Descending Artery Bypass in a Hemodialysis Patient**

Kazushi Nagai¹

Yasuyuki Egami¹, Taichi Mukai¹, Noriyuki Kobayashi¹, Ayako Sugino¹, Masaru Abe¹, Syoudai Kawanami¹,
Hiroaki Nohara¹, Naotaka Okamoto¹, Yasuharu Matsunaga¹, Masamichi Yano¹, Masami Nishino¹,

¹ Cardiology, Osaka Rosai Hospita, Japan

A woman in her 60s receiving maintenance hemodialysis presented with resting chest pain. Coronary angiography demonstrated three-vessel coronary artery disease, and coronary artery bypass grafting (CABG) using the left internal thoracic artery (LITA) to the left anterior descending artery (LAD) was performed. Follow-up coronary angiography revealed retrograde filling of the LITA graft from the native LAD, raising suspicion of coronary-subclavian steal syndrome due to left subclavian artery stenosis. Duplex ultrasonography demonstrated significant stenosis at the origin of the left subclavian artery with a peak systolic velocity of 2.9 m/s. Because the patient had a left upper extremity arteriovenous fistula for hemodialysis, the increased shunt flow was considered to have aggravated the steal phenomenon.

Subsequent endovascular treatment of the left subclavian artery was performed. Although angiography and intravascular ultrasound showed only mild anatomical stenosis, a mean pressure gradient of 15 mmHg was detected across the lesion. During temporary occlusion of the left forearm blood flow, the gradient decreased to 6 mmHg, suggesting a hemodynamic interaction between the arteriovenous fistula and the subclavian stenosis. A 7.0 × 27 mm balloon-expandable stent was implanted, followed by post-dilation with a 7.0 × 20 mm balloon. After stenting, the residual pressure gradient decreased, and no significant gradient remained during forearm occlusion. The FFR of the LAD improved from 0.73 to 0.83, and retrograde filling of the LITA graft disappeared. Postprocedural duplex ultrasonography showed improvement in peak systolic velocity to 1.46 m/s.

This case suggests that even mild subclavian artery stenosis may become hemodynamically significant in hemodialysis patients with an ipsilateral arteriovenous fistula receiving an LITA graft. Careful preoperative evaluation of the subclavian artery should be considered in such patients.