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Angina due to obstructive coronary artery disease in association with peripheral artery disease

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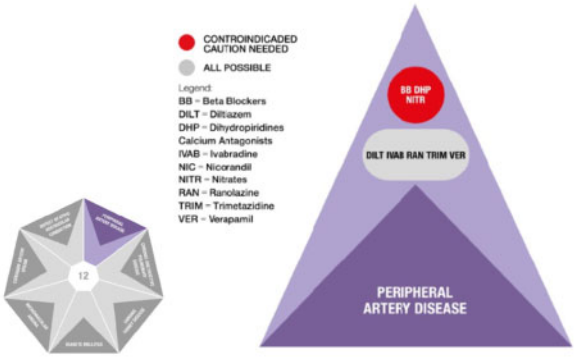

A 64-year-old man with known coronary artery disease was admitted to the outpatient clinic with typical Canadian Cardiovascular Society (CCS) Class II angina pectoris that started 2 weeks ago.

Three years previously, he had a history of anterior ST-segment elevation myocardial infarction treated with a percutaneous coronary intervention and stent implantation of the left anterior descending coronary artery. One year after this procedure, intermittent claudication with lower extremity ischaemia was diagnosed and treated with peripheral stent implantation to both the right common iliac artery and left external iliac artery. The patient's other comorbidities were systemic arterial hypertension, hypercholesterolaemia, and type 2 diabetes mellitus. He is a current smoker (15 cigarettes per day for 25 years). His was on aspirin 100 mg once daily, atorvastatin 20 mg once daily, ramipril 5 mg once daily, and metformin 1000 mg twice daily.

His blood pressure was 145/90 mmHg and heart rate was 90 b.p.m. at admission. Laboratory results revealed that his total cholesterol was 249 mg/dL, fasting blood glucose was 104 mg/dL, and the estimated glomerular filtration rate was 87 mL/min/1.73 m^2. Electrocardiography (ECG) at rest showed normal sinus rhythm and left ventricular hypertrophy without significant ST-T wave changes. Echocardiography was performed and showed left ventricular concentric hypertrophy, mild mitral regurgitation, left ventricular diastolic dysfunction with an ejection fraction of 55%.

A coronary angiography was performed, showing that the left anterior descending artery stent was patent (*Figure 1A*). The patient has treated with ramipril 5 mg, which was switched to the ramipril/hydrochlorothiazide 10/12.5 mg combination and metoprolol succinate 50 mg once daily was added to the regimen. The atorvastatin dosage was also increased to 40 mg once daily, and the patient was included in a smoking cessation programme.[1]

One month after admission, a follow-up visit was performed. His angina was ongoing, but had regressed to CCS Class II, but a new intermittent claudication in his left leg was detected. His blood pressure was 135/85 mmHg, his heart rate was 85 b.p.m. with normal sinus rhythm. His low-density lipoprotein level decreased to 104 mg/dL. Lower extremity artery computed tomography was performed on the same day, which showed that both stents are patent and detected non-critical peripheral arterial disease (*Figure 1B*). Taking into consideration the presence of peripheral arterial disease, it was decided to switch the metoprolol succinate 50 mg once daily to ivabradine 10 mg twice daily to control the heart rate and to increase the atorvastatin dosage to 80 mg once daily.

One month later, the patient arrived for the second follow-up visit. He had quit smoking for 15 days and his angina complaints had improved. The intermittent claudication was also resolved. His blood pressure was 140/80 mmHg and his heart rate was 75 b.p.m. with a normal sinus rhythm. His ECG and echocardiography results did not show any significant changes in comparison with his previous assessments.

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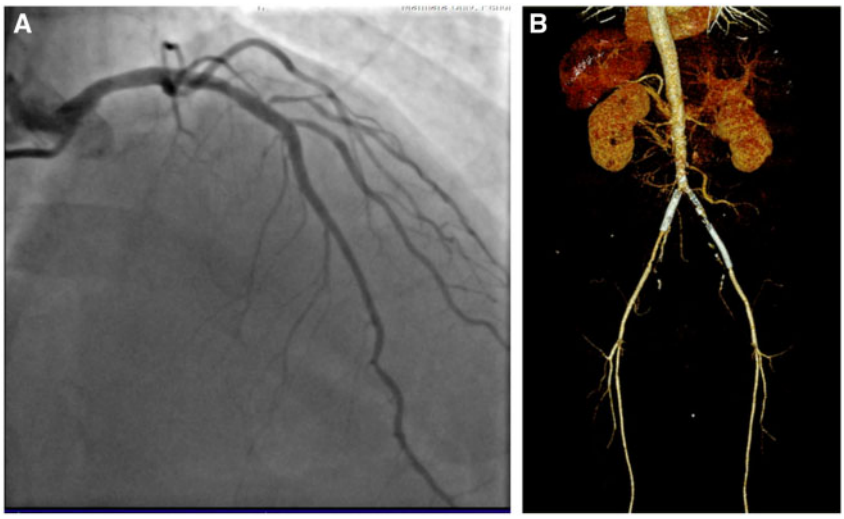

Figure 1 (*A*) Coronary angiography showed the left anterior descending, circumflex and right coronary arteries. There was non-critical coronary arterial disease and also no significant restenosis in the drug-eluting stent in the left anterior descending artery. (*B*) Lower extremity artery contrast enhanced computed tomography showed non-critical peripheral arterial disease.

Discussion

In our case, we presented a patient with refractory angina and intermittent claudication. His optimal medical therapy was managed based on the 'diamond approach' to the personalized treatment of angina in case of the presence of peripheral arterial disease.[1–3] This case emphasized the complexity of managing refractory angina and the underlying causes of angina and how to treat them to prevent angina episodes and ischaemic burden. The combination of the lifestyle modifications, anti-ischaemic treatment, and controlling risk factors is the approach recommended by current data.[1–3]

Peripheral arterial diseases are often associated with refractory angina.[3] Recent clinical trials have demonstrated that this association is correlated with increased mortality and major cardiovascular events; therefore, it requires a more aggressive medical treatment.

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