

## Peripheral Artery Disease and Coronary Artery Disease: An Abrasive Alliance

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### CASE REPORT

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### Abstract

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Peripheral arterial disease increases the risk of myocardial infarction, stroke, renovascular disease and cardiovascular mortality. The current guidelines however do not adequately address evaluation of patients with one form of vascular disease for disease in other vascular beds. We describe a case where judicious evaluation for coronary artery disease in a patient with peripheral vascular disease revealed significant disease which was treated with a good end result

#### Key Words

Peripheral Artery Disease, Coronary Artery Disease

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A 50 year male presented for a peripheral intervention for disabling long standing right lower limb claudication. His risk factors for vascular disease included a positive family history, being a heavy smoker for several years and hypercholesterolemia for which he was on Simvastatin 10 mg daily and Gemfibrozil 600 mg with good control . He had no overt cardiac symptoms but complained of occasional epigastric discomfort which could occur after a meal or at rest.

The patient was consented for a peripheral intervention and coronary angiography. His peripheral angiogram was significant for severe right lower limb disease including a 95% ostial lesion of the right Superficial Femoral Artery (SFA) (Fig 1). After a suboptimal result with balloon angioplasty the lesion was treated with a bifurcation stenting strategy using two 10 x 30 mm Smart control stents in the right SFA and right profunda femoris artery.

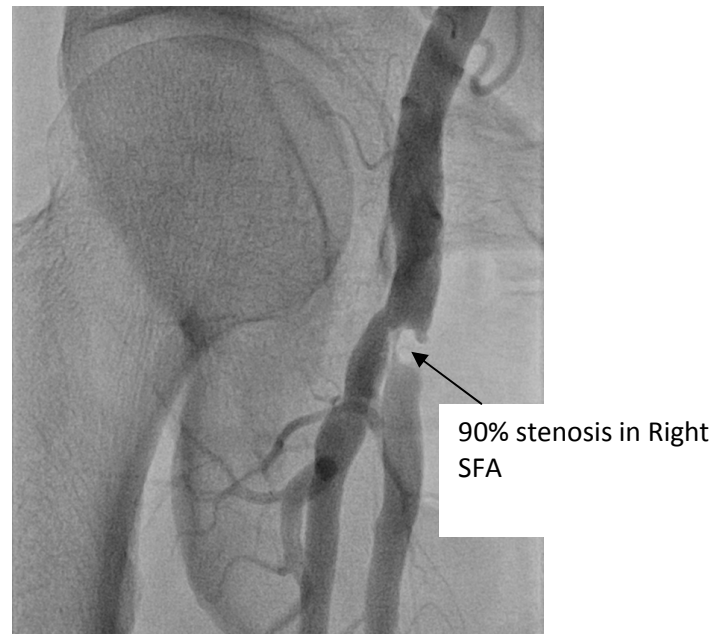


Fig 1. Peripheral angiogram

A coronary angiogram was taken in view of his Peripheral Vascular Disease (PVD) and risk factors. This showed a significant ulcerated lesion in the proximal right coronary artery (Fig 2). After discussion with the patient, coronary intervention was scheduled for the following day. The lesion was assessed with Intra Vascular Ultra Sound (IVUS) using Virtual Histology (Volcano Eagle eye). The findings showed the lesion to have a large necrotic core and a MLA of 2.4 mm<sup>2</sup>. (Fig 3).This was treated with a Xience 3.0 x 15 mm Drug Eluting Stent (DES) with a good result. His epigastric symptoms which



were likely to have been an angina equivalent have since resolved. This case shows the utility of a coronary angiogram in detecting Coronary Artery Disease (CAD) in appropriate patients scheduled for peripheral intervention.

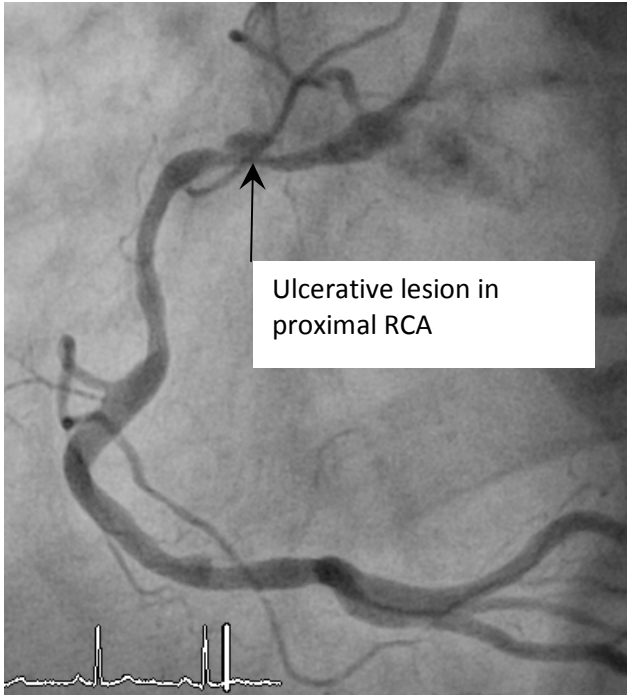


Fig 2. Coronary angiogram

It is accepted that the presence of Peripheral arterial disease (PAD) increases the risk of myocardial infarction, stroke, renovascular disease and cardiovascular mortality<sup>1</sup>. Many patients are found to have involvement of multiple vascular beds, with the prevalence of disease conditions increasing with age.<sup>2</sup> PAD is considered a strong marker for systemic atherosclerotic disease, and a large number of patients have coexistent CAD. The extent and severity of atherosclerotic lesions in major peripheral artery vessels often correlate with the extent and severity of CAD. The known modifiable risk factors associated with CAD including cigarette smoking, diabetes mellitus, dyslipidemia and hypertension also increase the risk of PAD.<sup>3</sup>

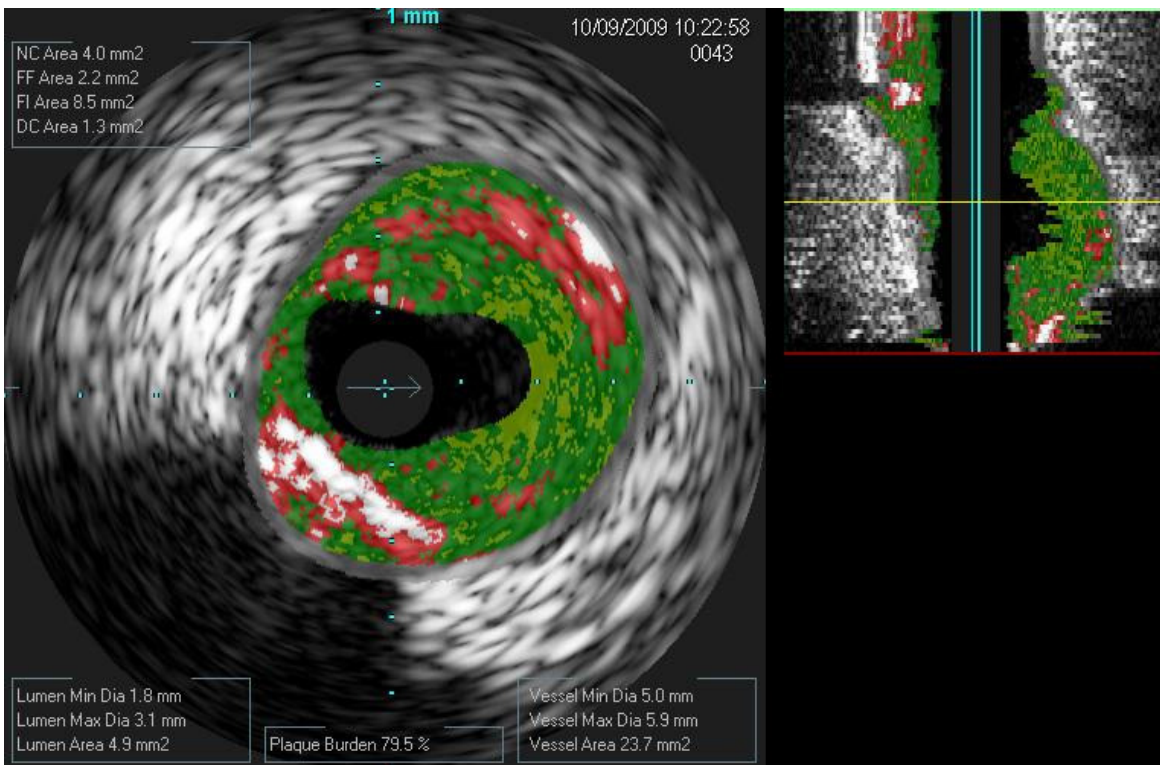


Fig 3. Intra Vascular Ultra Sound

Mixed plaque with features of Thin Capped Fibro Atheroma seen with Virtual Histology (Volcano Inc). Section taken from mid lesion



The 5 year survival of a patient with intermittent claudication is only 70% with 75% of the deaths being attributable to cardiovascular events.<sup>4</sup> A systematic review with nearly 45,000 patients from 11 different studies showed that a low ABI (Ankle Brachial Index) which is a marker for PAD, was associated with an increased presence of clinical cardiovascular disease.<sup>5</sup> However, it has also been demonstrated that patients with PAD have a higher incidence of asymptomatic CAD.<sup>6</sup> The presence of PAD increases the risk of all-cause mortality by many-fold, even in asymptomatic patients primarily due to an increase in the incidence of cardiovascular events.<sup>7</sup>

Physician strategies should therefore involve an active search for the presence of combined disease in the presence of either CAD or PAD as the prevalence of the involvement of a second vascular bed is high which may be asymptomatic and in whom this aspect of their disease is not appreciated.<sup>8</sup>

Current guidelines do not adequately address looking for combined disease in additional vascular beds. Although a few studies have suggested that obtaining a routine ABI (Ankle Brachial Index) has increased the percentage of asymptomatic PAD being diagnosed in CAD patients, its use in all patients with CAD has not been recommended.<sup>8,9</sup> Our case illustrates the benefit of having a low clinical threshold for judiciously evaluating patients with PVD for coexistent CAD, in the detection and treatment of disease.

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**PEER REVIEW**

Not commissioned. Externally peer reviewed.

**CONFLICTS OF INTEREST**

None

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