Spontaneous resolution of mid-segment coronary vasospasm previously unresponsive to intracoronary nitroglycerin

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We present an image of a 51-year-old female smoker who was admitted with angina. There was no history of cocaine or any other drug use. The coronary angiography showed a significant focal narrowing involving the mid-segment of the left anterior descending coronary artery (LAD), which persisted despite routine intracoronary injection of 200 µg nitroglycerin (Fig. 1a). The abnormal finding in Fig. 1a was considered to be a significant atherosclerotic stenosis. Therefore, the lesion was not further evaluated by giving other vasodilators such as adenosine. The left main, left circumflex and right coronary arteries were normal. She remained asymptomatic throughout the angiography and was scheduled for drug-eluting stent implantation to be performed on the next day. At the second catheterisation, we observed that the significant narrowing in the mid-segment of the LAD had disappeared completely (Fig. 1b). The procedure was discontinued without stenting and the

patient was successfully treated with a calcium-channel blocker.

Coronary vasospasm occurs in 3% to 4% of patients during coronary cannulation and angiography [1]. Usually, the vasospasm is confined to the ostial/proximal part of the coronary artery, demonstrating a short, concentric, smooth area of narrowing, and it ceases after relocating the catheter and/or giving intracoronary nitroglycerin. Several local vasoconstrictor mechanisms have been postulated. They include mechanical irritation triggering a myogenic reflex, and endothelial dysfunction with loss of nitric oxide supply [2]. While often producing vasodilatation, angiographic dye has also been reported to cause coronary vasospasm [3]. Intracoronary administration of vasodilators is the suggested acute treatment for coronary vasospasm in the catheterisation laboratory [4]. Nitroglycerin in doses of 100–200 µg bolus should be the first agent used. Intracoronary calcium-channel blockers can be attempted in patients refractory to nitroglycerin [5].

The key learning points of this illustrative report are as follows: (a) intracoronary nitroglycerin cannot always relieve coronary vasospasm; (b) there may be dramatic differences in the sensitivity of the coronary artery to possible mechanical stimulation by the catheter tip on different days; (c) coronary vasospasm, if especially at a

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Fig. 1 The diagnostic (a), and pre-intervention (b) images show the complete resolution of the mid-segment vasospasm in the LAD on coronary angiography. The *arrows* indicate the alleged culprit lesion

point away from the catheter tip, may easily mimic a fixed lesion, leading to unnecessary intervention.

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