

# Life-saving necklace: collateral circulation from the conus artery to the anterior descending artery

Naszyjnik ratujący życie – krążenie oboczne od tętnicy stożka do gałęzi przedniej zstępującej

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## Abstract

We report a case of hyperacute inferior myocardial infarction with life-saving collateral circulation from the conus artery to the left anterior descending artery.

**Key words:** conus artery, collateral circulation.

## Streszczenie

W pracy przedstawiono przypadek nadostrego zawału ściany dolnej serca z ratującym życie krążeniem obocznym z tętnicy stożka do gałęzi przedniej zstępującej.

**Słowa kluczowe:** tętnica stożka, krążenie oboczne.

Collateral circulation is important in preserving ventricular function, especially in coronary artery disease with total occlusion. The conus branch of the right coronary artery (RCA) has the capacity of angiogenesis and arteriogenesis [1, 2]. We report a case of hyperacute inferior myocardial infarction with life-saving collateral circulation from the conus artery to the left anterior descending artery (LAD). A 54-year-old man was referred to the emergency room with hyperacute inferior myocardial infarction. Coronary angiography demonstrated chronic total occlusion of the LAD at its proximal segment and acute total occlusion of the RCA at the proximal segment after the conus branch (Figure 1). The LAD was filled by the collateral circulation through a large conus artery that originated within the right sinus of Valsalva, very close to the ostium of the RCA. It coursed with the LAD at the medial segment (Figure 2). The circumflex artery was normal. Primary percutaneous transluminal coronary angioplasty of the occluded RCA was performed and one drug-eluting stent (2.75 mm × 30 mm) was

implanted. Coronary artery bypass graft surgery was recommended for revascularisation of the LAD.

Collateral circulation is an important factor in the pathophysiology of coronary artery disease. The symptoms and prognosis among these patients depend on the quality of the collateral circulation. This case shows the importance of collateral supply of conus branch circulation preventing cardiogenic shock in patients with chronic occlusion of the LAD and acute occlusion of the RCA.

## References

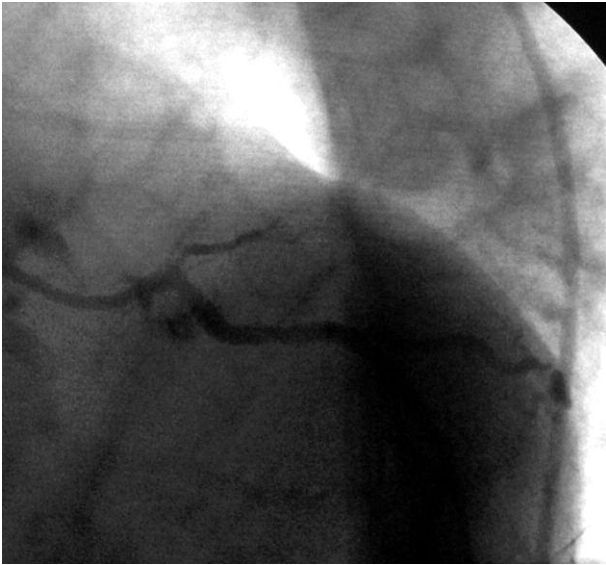
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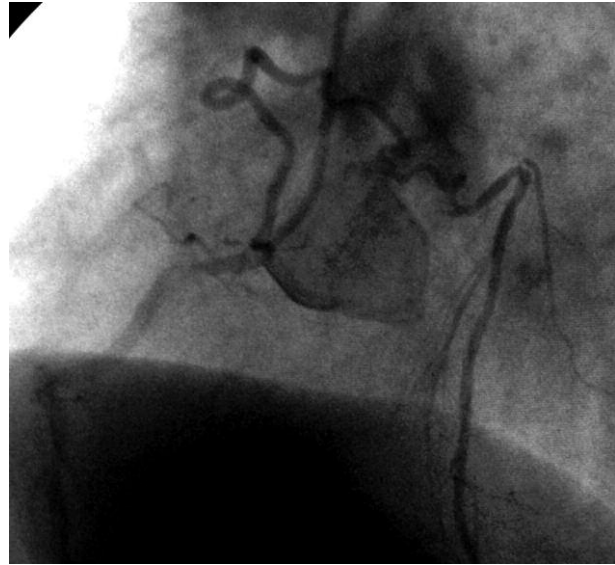
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**Fig. 1.** Chronic total occlusion of left anterior descending artery

**Ryc. 1.** Przewlekle niedrożna gałąź przednia zstępująca



**Fig. 2.** Collateral circulation from the conus artery to the left anterior descending artery

**Ryc. 2.** Krążenie oboczne z tętnicy stożka do gałęzi przedniej zstępującej