





# Alternative approach: transaxillary implantation of the Impella CP mechanical circulatory support device in high-risk percutaneous coronary intervention

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**Introduction:** During the last few years, the number of patients with complex coronary artery disease who require circulatory assist devices during percutaneous coronary interventions has increased significantly. Impella CP left ventricular assist device is a continuous-flow axial pump placed across the aortic valve that drives the blood directly from the left ventricle towards the ascending aorta. The most used approach is femoral, however sometimes we need to use an alternative site to place the device.<sup>1,2</sup>

**Case report:** 72-year-old man was hospitalized due to an acute non-ST-elevation myocardial infarction. This patient had a repair of ascending aortic aneurysm with a graft and venous bypass to the marginal branch of circumflex artery in 2021. Prior to the cardiothoracic surgery he had multiple percutaneous interventions on circumflex artery (ACx) and right coronary artery (RCA) as well as both-sided aortofemoral bypasses. An emergency CT aortography was performed in the Emergency Department to rule out acute aortic syndrome. A coronary angiography followed after the admission and it showed subocclusion of the left main, chronic total occlusion of diagonal branch, subocclusion of proximal ACx and 99% stent stenosis in proximal RCA. Due to the lack of femoral access, a team of interventional cardiologists decided on performing a high-risk procedure with transaxillary Impella CP support with the assistance of vascular surgeons. An intervention was performed on the left main with the implantation of one drug-eluting stent and drug-eluting balloon was applied in the proximal ACx. During the procedure, the patient was hemodynamically stable, and at the end of the intervention, the Impella CP was removed. The axillary artery was surgically closed. Due to the high risk of ischemia, the antiplatelet therapy used in this patient was acetylsalicylic acid and prasugrel.

**Conclusion:** This is a case of a complex and multi-comorbid patient from everyday clinical practice who can be provided with optimal medical care in specialized centers that, in addition to equipment, also have highly educated specialists. The transaxillary approach with Impella CP performed by experienced teams is safe and enables us to treat such patients.

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## LITERATURE

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