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ANTERIOR ST-SEGMENT ELEVATION MYOCARDIAL INFARCTION IN A PATIENT WITH DEXTRCARDIA

Francesco Spione, Salvatore Brugaletta

Cardiovascular Department, Hospital Clinic, Barcelona, Spain

Rational: A 77-year-old man presented to the emergency department with chest pain with typical characteristics. The patient had a history of dyslipidaemia and diabetes mellitus type 2 and a known history of dextrocardia. Due to his known history of dextrocardia, ECG was already performed with reversed electrodes placement and showed lateral and anteroseptal ST elevation. Echocardiography showed anterior and lateral wall akinesia with moderate left ventricle systolic dysfunction (Video). A diagnosis of anterior-lateral ST-elevation myocardial infarction (STEMI) was made.

Technical resolution: Due to the dextrocardia, the coronary circulation was inverted. Coronary angiography showed a total thrombotic occlusion of the ostium of the left anterior descending artery (LAD) with a diffuse atherosclerotic disease of the other arteries and a right dominant circulation. We planned to perform the coronary angioplasty by using a JL 3.5 guiding catheter and workhorse BMW guidewire. Notwithstanding, it was evident since the beginning that the guiding catheter, designed for a normal artery circulation, did not offer an adequate support. Furthermore, after several attempts, the BMW guidewire was not able to cross the lesion, so it was placed in the left circumflex artery in order to stabilize the guiding catheter, and a more hydrophilic guidewire, - Hi-Torque Versaturn™- eventually crossed the thrombotic occlusion. A 2.5 x 10 mm semi-compliant balloon was used to predilate it with opening of the artery and an evident stenosis in the proximal part of the LAD. A 3.5 x 15 mm drug eluting stent (DES) could not cross the lesion, because of the poor support of the guiding catheter, even though two guidewires were placed to give more “anchoring”. Therefore, a guiding catheter extension system (Guidezilla™, Boston Scientific) was used and placed till the lesion. With its help, the DES was eventually implanted with good angiographic result and no complications

Clinical Implications: Dextrocardia is a rare condition, and its incidence is estimated to be around 1 to 2/10000 in the general population. STEMI in these patients is scarcely reported, with less than 100 cases described in the literature worldwide. Usually, these patients have structurally normal heart but represents an interventional challenge because of the need to find adequate radiographic work projections and devices that provide good support to perform primary PCI.

Perspectives: Performing angiography and PCI in this situation may be very challenging even for an expert operator. First of all, finding adequate radiographic projections could be demanding due to the inverted heart position. Goel described the double-inversion technique, which consists in a right-left reversal of the image during the acquisition. In other words, what is expected to be seen on an RAO projection with a particular cranial/caudal tilt of a normal heart is reproduced by giving the same degree of LAO angulation instead, and vice versa. This was exactly what we did thinking like we were working in front of a mirror using LAO projections instead of RAO projections and vice versa. Last but not least, case series that have been previously reported suggested that trans-



femoral access should be preferred over trans-radial access in order to have more support, but in our case we decided to favour patient safety over operator comfort. The real challenge was to find adequate support during PCI with devices designed for left-sided heart. In this situation operator expertise plays a pivotal role in order to find the right solution. Therefore, using guide extension system can be a good option to obtain the support that we need to perform PCI in such clinical situation.