

Tapering of guiding catheters with coronary angioplasty balloons: a new tip to reach hard places

*Perez-Brandão C. (1), Martins J.D. (1), Fiarresga A. (2), Sousa L. (2), Pinto F.F. (1)
Pediatric Cardiology Department - Hospital Santa Marta, Lisbon, Portugal (1); Cardiology Department
- Hospital Santa Marta, Lisbon, Portugal (2)*

Introduction:

Abnormal vascular communications are commonly observed in patients with congenital heart disease and may contribute to deterioration of patient clinical status. Treatment can be performed either by surgery or by percutaneous techniques. Transcatheter closure has some advantages over surgery, including shorter recovery time and avoidance of thoracotomy, however it may not be feasible due to anatomical or technical issues.

Methods:

Two patients underwent percutaneous closure of vascular malformations. A 17-year-old male with medical history of pulmonary stenosis and complaints of progressive dyspnoea and fatigue, was diagnosed as having a large coronary artery fistula (CAF) arising from the left main coronary artery to the left atrium. A 46-year-old female with previous surgery for scimitar syndrome and recurrent haemoptysis due to a major bronchial artery arising from the descendent aorta to the lower right lung lobe. Both abnormal vascular connections had a tortuous arterial course, with ostial narrowing and extensive angulation.

Results:

In both cases, multiple attempts to selectively catheterize the afferent vessel with an appropriately sized 5Fr delivery catheter were unsuccessful. To overcome the narrow ostium and significant angulation, a coronary angioplasty balloon was used to taper the guiding catheter distal extremity thus creating a more favourable shape to overcome the lesions stenotic entrance and tortuous course. In both cases, this manoeuvre allowed for an easy advancement and positioning of the guiding catheter. The CAF was successfully occluded with an Amplatzer Duct Occluder II Additional Size and the bronchial artery was also successfully closed with an Amplatzer Vascular Plug II. There were no complications during both procedures.

Conclusions:

There has been several advances in transcatheter procedures over the last decade with development of various innovative tools. These cases describe a new percutaneous technique to overcome the difficulties of gaining access to complex vascular malformations, through a stenotic angulated entrance, which would otherwise have to be treated surgically.