The Use of a Wire Control Catheter to Treat Complex Pulmonary Artery or Vein Anatomy

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ABSTRACT: The difficult performance of certain percutaneous interventions in the field of congenital heart disease is well known. Crossing pulmonary arteries in patients who have previously undergone surgical repair or stent grafts can be technically challenging in the catheterization laboratory. The Venture wire 6 Fr control catheter (St Jude Medical) is compatible with a steerable tapered radiopaque tip that can be manually angulated (up to 90°) by clockwise rotation of a knob located in the proximal handle. This mechanism directs any 0.014” guidewire and provides back-up support. This catheter has been successfully used in coronary artery intervention for crossing severely tortuous vessels, extreme angulations of side-branch ostia, jailed stents, saphenous vein graft anastomoses, and chronic total occlusions.

We report the first use of the Venture wire control catheter (St Jude Medical) in the field of congenital heart disease. Patient #1 was diagnosed with pulmonary atresia and ventricular septal defect and had a proximally migrated stent in the pulmonary trunk and severe left pulmonary artery stenosis. We have used this catheter in order to cross this stent and perform left pulmonary artery stent placement. Patient #2 had postoperative vein restenosis after surgery. The Venture catheter was used to reach the obstructed insertion of the right medium lobe pulmonary vein from a transseptal approach.

Techniques from coronary interventional colleagues can help interventional cardiologists in the field of congenital heart disease to treat complex situations.

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Key words: congenital heart defects, pulmonary atresia, pulmonary artery, stents

It is not uncommon to use techniques or tools from coronary artery intervention to treat lesions in other fields of percutaneous intervention. The Venture wire control catheter (St Jude Medical) is a 6 French (Fr) compatible, over the wire or monorail, 140 cm braded support catheter. The steerable tapered radiopaque tip can be manually angulated (up to 90°) by clockwise rotation of a knob located in the proximal handle. This mechanism directs any 0.014” guidewire and provides back-up support. This catheter has been used to cross severely tortuous vessels, extreme angulations of side-branch ostia, jailed stents, saphenous vein graft anastomoses, and chronic total occlusions.

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