MICRO™
INVASIVE TECHNOLOGIES
by QualiMed® | A Q3 Medical Company

5 F

Case Report

Stenting for Subocclusion of Right Common Iliac Artery via Transulnar Approach

Institute of Cardiology, Catholic University of the Sacred Heart Rome, Italy

QBX 18

0.018" Balloon Expandable Stent

Carlo Trani MD

Introduction

Iliac endovascular interventions are commonly performed by transfemoral approach. More recently, alternative approaches through the wrist arteries (mainly transradial but also transulnar) in selected patients have been proposed with the aim of reducing access site complications and, possibly, improving clinical outcomes. Yet, the forearm arteries' small size makes iliac devices miniaturization a critical issue for treatment diffusion. Herein, we report the first true 5 F access transulnar implant of a novel dedicated balloon expandable iliac stent to treat iliac-femoral disease in a patient not amenable for transfemoral access.

There are currently very few low-profile devices with extended shaft length allow perform peripheral revascularization via 5 F transradial approach. Additionally, when dealing with iliac stenting, there are almost no low-profile balloon expandable stents available that are suitable for true <6 F arterial access, that is the accepted limit for safe transradial access in unselected patients.

Herein, we present the first in-man implant of the new **QBX 18** (5 F) (QualiMed, Winsen, Germany) balloon expandable iliac stent through a 6 F coronary guiding catheter via a true 5 F transulnar access.

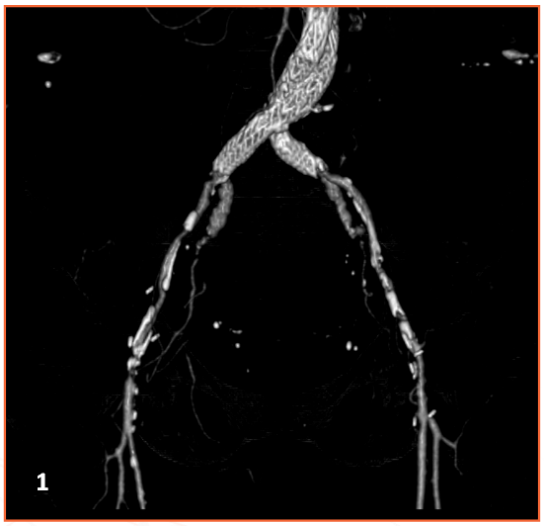


Image 1. 3D Angio CT recconstruction

Case Report

5 F

Stenting for Subocclusion of Right Common Iliac Artery via Transulnar Approach

Institute of Cardiology, Catholic University of the Sacred Heart
Rome, Italy

Image 2. External iliac artery focal stensosis (arrow) after stent deployment into common femoral artery.

Methods

A 68-year-old female patient with previous (5 years before) bilateral carotid endo-arterectomy, previous (seven years prior) mechanical aortic prosthesis implantation, was admitted with severe right leg claudication at about 50 meters (Fontaine IIb; Rutherford 3). Seven months before, the patient had undergone endovascular aortic repair (EVAR) in order to treat infrarenal abdominal aortic aneurism (AAA).

A Doppler ultrasound performed one week before admission had shown subocclusion of right common iliac artery and tight stenosis of common femoral artery with significant flow acceleration (4.5 m/sec).

Angio CT scan documented diffuse calcific disease of the right external iliac artery, immediately distal to the previously implanted endoprosthesis, and a subocclusive stenosis at the junction with common femoral artery (Image 2). After team discussion with vascular surgeons, percutaneous transluminal angioplasty (PTA) was planned.

Due to the previous EVAR, controlateral femoral approach was not feasible while the lesion location made ipsilateral retrograde access troublesome; an antegrade approach through the wrist was selected.

After confirming patency of palmar arch by reverse Allen test, left ulnar access was preferred since radial pulse was weaker on palpation. To limit ulnar artery injury, the 5-in-6 F Slender sheath, a recently developed thinner wall sheath with a 5 F outer diameter and 6 F inner lumen, was adopted.

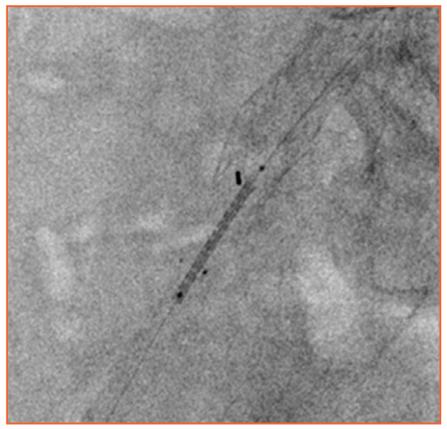


Image 3a. Fluoroscopic view of undeployed QBX stent.

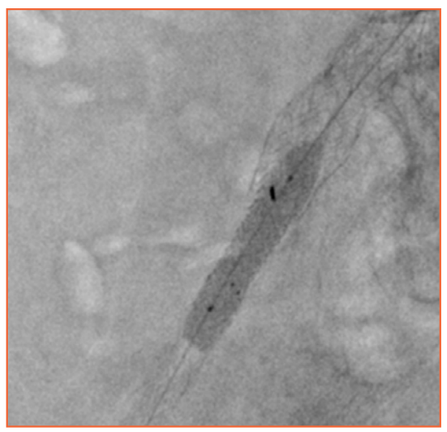


Image 3b. Fluoroscopic view of deployed QBX 18 stent.

A 125 cm long, 6 F multipurpose guiding catheter was advanced over a 0.035" J-tipped guidewire down to the descending aorta and angiography was performed showing severe sequential stenosis of right external iliac artery and common femoral artery with patent aorto-iliac endoprosthesis.

After advancing the guiding catheter further down selectively into the right common iliac artery, the lesion was crossed with a 400 cm long 0.018" wire which was advanced into the right superficial femoral artery. An extended shaft length (180 cm) 6x40 mm balloon was advanced over the guidewire and then predilation of both common femoral artery and external iliac artery was performed.

Two overlapping self-expandable nitinol stent s with extended shaft length (180 cm), 6x80 mm and 7x60 mm, were deployed starting from the common femoral artery up to the external iliac and then post-dilated with the previously used 6x40 mm balloon.

Due to a residual significant focal stenosis in the segment between stent and previously implanted endoprosthesis (Image 2), the decision was made to implant a short balloon expandable stent to optimize the result. The availability of the **QBX 18** (5 F) cobalt chromium balloon expandable iliac stent provided an opportunity to offer the patient a chance to complete the procedure through the 6 F guiding catheter avoiding sheath upsizing. This newly developed stent with an extremely low profile was developed spefifically to be delivered through a 6 F guiding catheter (5 F sheath).

A 9x26 mm **QBX 18** (5 F) stent was deployed into the proximal external iliac artery overlapping the previously implanted stent at one site and the distal end of EVAR at the other one (Image 3a & 3b). Final angiography showed excellent result with no residual stenosis (Image 4).

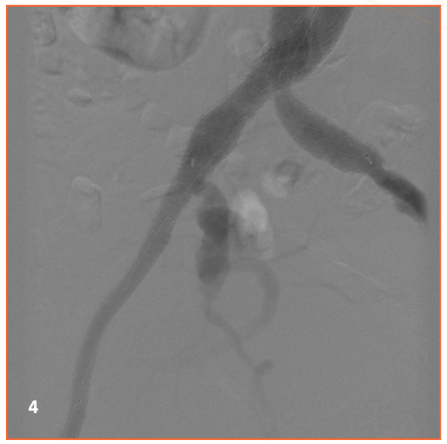


Image 4. Final angiographic assessment

No peri-procedural complications were noticed. The patient ambulated prior to discharge and reported marked improvement of claudication. A post-procedure Doppler ultrasound revealed patency of implanted stents with normal flow (PSV 1.5 m/sec). The patient was discharged on aspirin, clopidogrel ,and a statin.

Discussion

Recent technical improvements of peripheral devices, resulting in increased compatibility and distal support, have made treatment of peripheral artery disease by transradial or transulnar approach, in very selected cases, feasible.

It is commonly accepted that balloon expandable stents fare better in some iliac lesions (i.e. ostial or heavily calcified stenoses) due to their higher radial force and more precise deployment when compared with self-expandable stent. However, iliac balloon expandable stents usually require 6 F or bigger sheaths or 8 F guiding catheters.

Case Report

5 F

Stenting for Subocclusion of Right Common Iliac Artery via Transulnar Approach

Institute of Cardiology, Catholic University of the Sacred Heart
Rome, Italy

In the present case, we have been able to implant, a 9 mm diameter balloon expandable stent through a 6 F guiding catheter with a 5-in-6 slender sheath, thus leaving behind a true 5 F hole at the entry site.

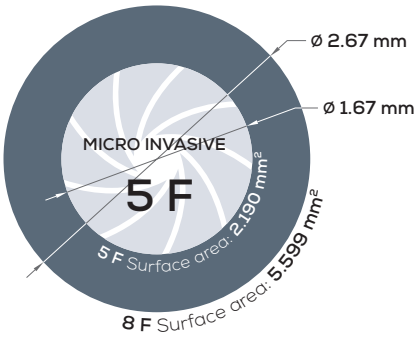
This has two major implications: first of all, this shows how iliac stenting can be performed by wrist access using the standard transradial coronary stenting technique; second, it opens the door for expanding the transradial approach selection to a broader range of peripheral artery disease patients, including female patients or those with small radial arteries, not otherwise amenable for transradial treatment.

Conclusion

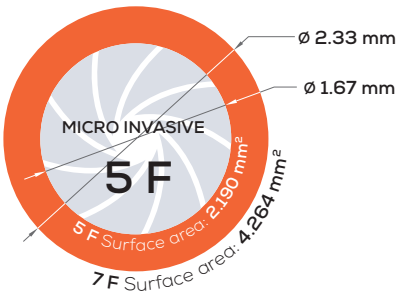
In conclusion, the combination of new equipment, like slender sheaths and the QualiMed Micro Invasive Technologies **QBX 18** (5 F) balloon expandable stent, may allow to safely and effectively perform iliac stenting by transradial or transulnar access. This can further prompt the adoption of transradial approach for peripheral interventions.

Puncture Site Surface Area (PSSA)

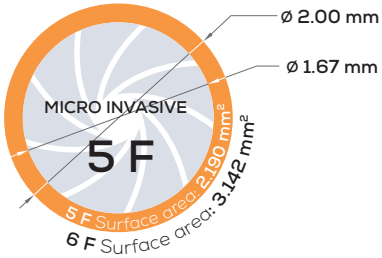
8 F PSSA is 255% > 5 F



7 F PSSA is 195% > 5 F



6 F PSSA is 145% > 5 F



MICRO™ INVASIVE TECHNOLOGIES
by QualiMed® | A Q3 Medical Company

QualiMed | Boschstraße 16 | D-21423 Winsen | Germany

Phone +49 4171 6905 57-0
Fax +49 4171 6905 57-11
Email info@amggastro.com
Web www.amggastro.com

Manufactured by
QualiMed Innovative Medizinprodukte GmbH
Boschstraße 16 | D-21423 Winsen | Germany | www.qualimed.de