

Percutaneous Endovascular Treatment to Salvage Non-Maturing Arteriovenous Fistulas in a Multiethnic Asian Population

Wei Ping Tham, ¹*MBChB, FRCR (UK), MMED (Diagnostic Radiology)*, Mark C Burgmans, ²*MD, FAMS*, Bien Soo Tan, ¹*MBBS, FRCR, FAMS*, Kiang Hong Tay, ¹*MBBS, FRCR, FAMS*, Farah G Irani, ¹*MBBS, FRCR*, Apoorva Gogna, ¹*MBBS, FRCR, FAMS*, Ankur Patel, ¹*MBChB, MRCS, FRCR*, Richard HG Lo, ¹*MBBS, FRCR, FAMS*, Siew Ping Chng, ³*MBChB, MRCS, FAMS*, Hui Lin Choong, ⁴*MBBS, MMED, FAMS*, Shaun XJM Chan, ¹*MBBS, FRCR, FAMS*

Abstract

Introduction: An arteriovenous fistula (AVF) is the preferred method for haemodialysis in patients with end-stage renal failure. Previous studies have shown value in attempting percutaneous transluminal angioplasty (PTA) to salvage AVFs that fail to mature, but they are relatively small in size and mainly reported in Western populations. We reviewed our data of PTA in non-maturing AVFs to establish whether this technique is translatable to our local multiethnic population. **Materials and Methods:** We retrospectively reviewed the medical records and procedural images of 105 patients who had PTA for non-maturing AVFs performed at our department from January 2008 to January 2011. Technical success was defined as $\leq 30\%$ residual stenosis after angioplasty. Clinical success was defined as at least 1 successful haemodialysis session within 4 weeks after PTA. **Results:** All 105 patients underwent angioplasty for at least 1 haemodynamically significant stenosis. Six (5.7%) had additional embolisation of accessory veins. Technical success was achieved in 95.2% of cases. The clinical success rate was 76.2%. Primary patency rates at 3, 6 and 12 months were 83%, 45% and 28%, respectively. Secondary patency rates at 3, 6 and 12 months were 90%, 79% and 70%, respectively. The minor complication rate was 18.1%. No major complications were encountered. An average of 1.7 interventions per access-year was required to maintain AVF patency. Patients with a preoperative vein size >2.0 mm and age <55 years were more likely to achieve clinical success, although not statistically significant. **Conclusion:** PTA is a viable option to help salvage non-maturing AVFs in a multiethnic Asian population.

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¹Department of Diagnostic Radiology, Singapore General Hospital, Singapore

²Department of Radiology, Leiden University Medical Centre, Netherlands

³Department of Vascular and Endovascular Surgery, Singapore General Hospital, Singapore

⁴Department of Renal Medicine, Singapore General Hospital, Singapore

Address for Correspondence: Dr Tham Wei Ping, Department of Diagnostic Radiology, Block 2 Level 1, Singapore General Hospital, Outram Road, Singapore 169608.

Email: tham.wei.ping@sgh.com.sg