DYSFUNCTIONAL, NON MATURING OR THROMBOSED AVF: THE ROLE OF PERCUTANEOUS TRANSLUMINAL ANGIOPLASTY IN A LOCAL EXPERIENCE

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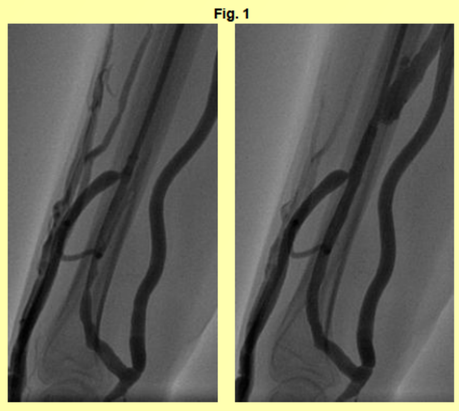
OBJECTIVES

Vascular access complications are one of the main causes associated with an increase in morbidity and mortality in patients on emodialysis. The arteriovenous fistula (AVF) is considered the vascular access of choice and stenoses are the major cause of its dysfunction. Percutaneous transluminal angioplasty (PTA) has been widely recognized as a suitable technique for correcting such lesions.
Our study retrospectively evaluates the clinical course and treatment outcome of performing PTA for dysfunctional, non maturing or thrombosed AVF in our experience

METHODS

Between Jan 2008 and Dec 2012, 101 PTA procedures were performed on 73 patients (49 men, 67%; median age 67 years, range: 27-89) with dysfunctional (63%), non maturing (7%) or thrombosed (30%) AVF.
63 wrist radiocefalic [25 with latero-terminal (L-T), 38 with termino-terminal (T-T) anastomosis] and 10 elbow fistulae with median age of 12 months (range 1 month-13 years) were treated.
The Kaplan-Meier method was used to calculate the primary and secondary cumulative patency rates.

Fig. 1



RESULTS

In radiocefalic L-T AVF, stenoses were located in the iuxta-anastomotic segment (Fig. 1) in 11 patients (44%), in anastomotic area in 5 (20%), in the venous outflow in 5 (20%), in central vein in 1 (4%), in multiple areas in 3 (12%); in radiocefalic T-T AVF the distribution was similar (iuxta-anastomotic 47%, anastomotic 21%, outflow vein 16%, central vein 5%, multiple areas 11%). In elbow fistulae the stenoses occurred in the outflow vein in 7 patients (70%) and around the anastomotic region in 3 patients (30%). Angiografic and clinical success was 88%; 17 patients required 28 repeat PTA for recurrent stenosis/thrombosis. 8 patients had small extravasation that required no further treatment, 1 patient had microembolism in second interdigital artery during declotting of radiocefalic L-T thrombosed fistula, treated with urokinase infusion (Fig. 2 and 3).
Excluding initial failure, mean primary and secondary patency for AVF were 34.3 months (95% CI 26.4-42.1) and 41.1 months (95% CI 37.9-52.4); the primary and secondary cumulative patency rates at 12 months were 59% and 84% respectively (Fig. 4 and 5).

Fig. 4

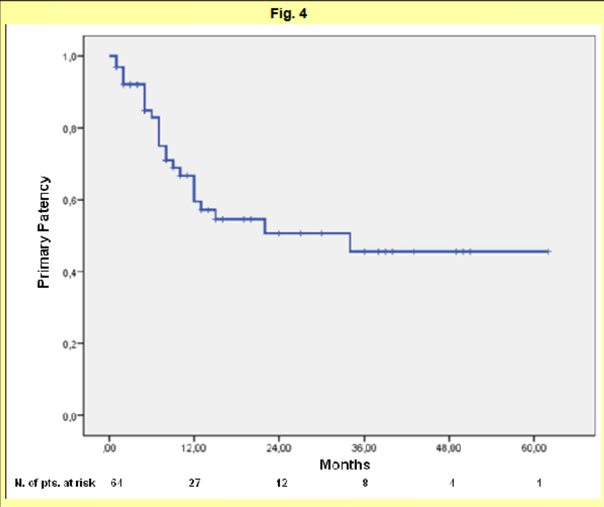


Fig. 2

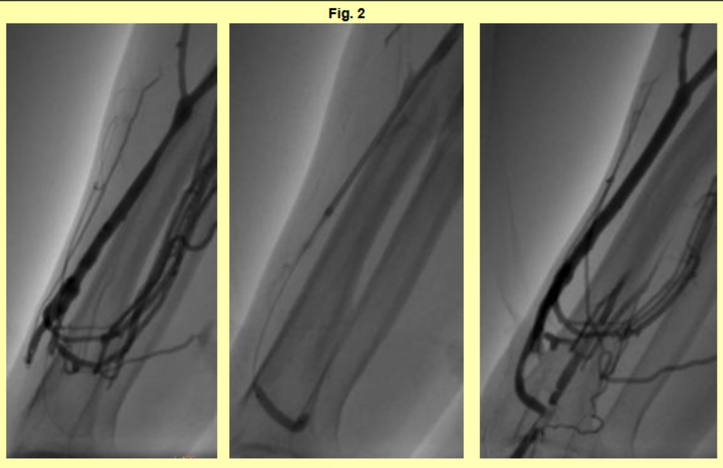


Fig. 5

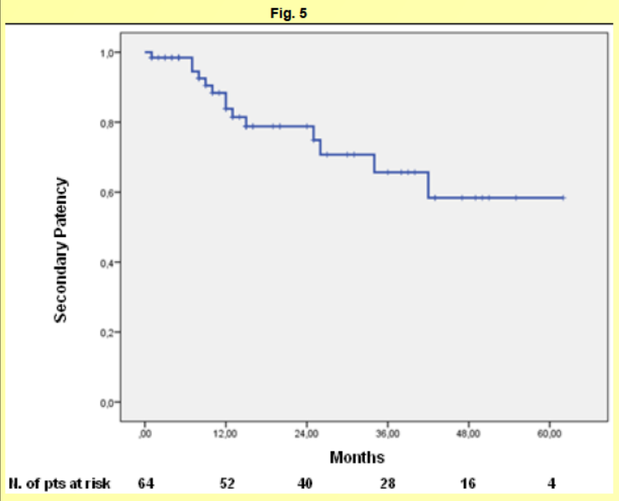
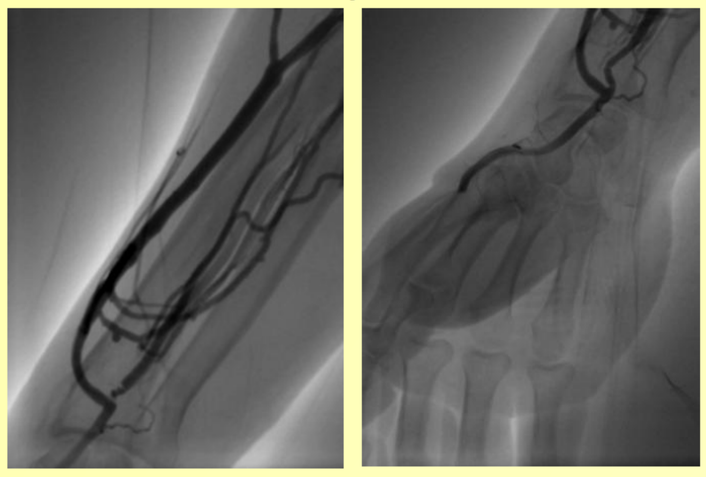


Fig. 3



CONCLUSIONS

PTA can effectively salvage dysfunctional, non maturing or thrombosed AVF. Since repeat angioplasty is often necessary to maintain function, careful surveillance is necessary. The concerted efforts of nephrologists and other specialists (interventional cardiologists/radiologists and surgeons) are the key to manteining and prolonging vascular access survival.

REFERENCES:

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