

Hyperperfusion Syndrome After Percutaneous Transluminal Angioplasty in Radio-cephalic Arterio-venous Fistula: Case Report

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Introduction

Swelling of arm or forearm in arterio-venous fistula (AVF) side can be often found in hemodialysis (HD) patients due to a variety of venous outlet stenoses. We describe an unusual case of sudden onset swelling of arm and forearm in AVF side after performing the percutaneous transluminal angioplasty (PTA) for stenosis of

Case Report

A 57-year-old woman with a history of hypertension, uremia on regular HD came for PTA due to malfunction of AVF. Fistulography disclosed left radiocephalic AVF with chronic total occlusion (CTO) of basilic vein and stenosis over juxta-anastomotic cephalic vein (figure 1).

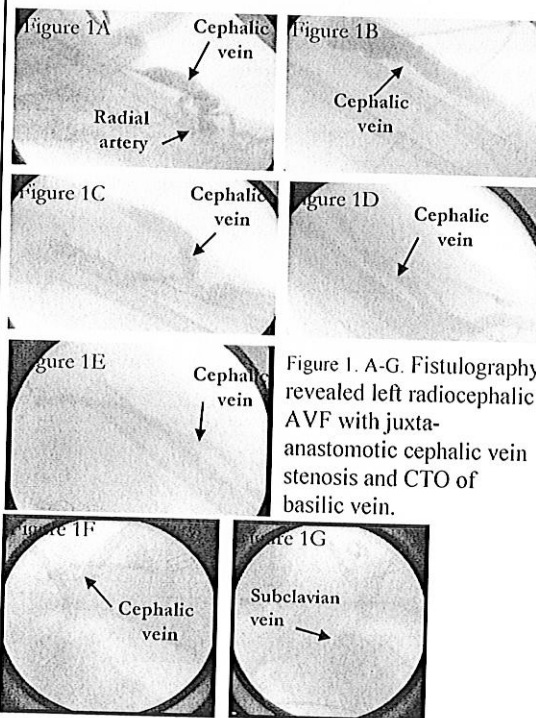
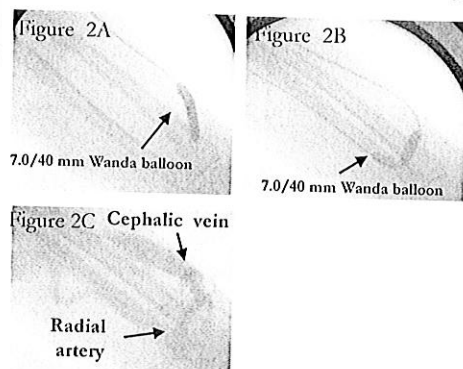
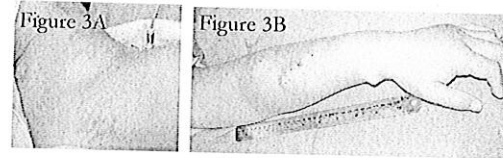


Figure 1. A-G. Fistulography revealed left radiocephalic AVF with juxta-anastomotic cephalic vein stenosis and CTO of basilic vein.

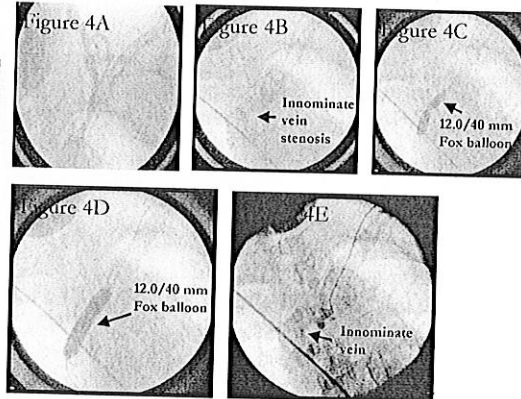
A 6Fr sheath was inserted retrogradely to cephalic vein and the lesion near anastomosis was crossed with a .035" Terumo wire then dilated with a 7.0/40 mm Wanda balloon at 14 atm (figure 2A, 2B). Adequate angiographic result was achieved (figure 2C) and final sheath pressure was 55/43 mmHg.



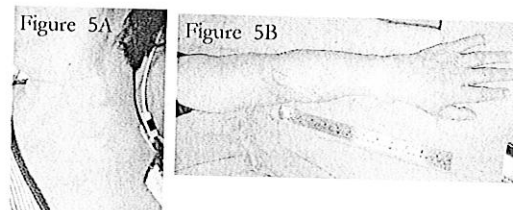
However, marked left arm swelling with engorged superficial collateral vein near left upper chest was noted after PTA (Figure 3 A, B). She came back to our cath lab one week later due to arm edema.



Re-PTA was performed and fistulography revealed innominate vein stenosis with pressure gradient 30 mmHg found (figure 4A, 4B). A 7Fr sheath was inserted to left cephalic vein and the innominate vein lesion was crossed with a .035" Terumo wire then dilated with a 12.0/40 mm Fox balloon at 8 atm (figure 4C, 4D). Brisk antegrade flow with adequate angiographic result was achieved (figure 4E) and pressure decreased from 67/52 mmHg to 34/27 mmHg after PTA.



After PTA to innominate vein stenotic lesion, patient underwent hemodialysis smoothly on the following day and arm edema improved a lot 2-3 days later. She came back to our cath lab one week later and left arm edema subsided (figure 5A, 5B).



Conclusions

We would like to express caution regarding the increase of upstream blood flow via releasing stenosis from PTA for AVF in patients who had severe downstream occlusion. Before PTA, inflow or outflow problems should be identified through history taking and physical examination carefully to avoid this kind of complication.