Background: History taking and physical examination is an important part in dealing with AVF malfunction. ‘In flow problems’ and ‘outflow problems’ should be distinguished before percutaneous transluminal angioplasty (PTA) performed. Blind PTA to stenotic lesion in a AVF may result in disaster in some patients.

Case Report: A 40-year-old woman with a history of hypertension, DM, Uremia on regular dialysis was referred from nephrologist due to malfunction of left radiocephalic AV fistula with higher venous pressure found. Angiography disclosed about 60% stenosis over arterial anastomosis. Cephalic vein was patent. Hence PTA was performed. A 6 Fr sheath was inserted retrogradely to cephalic vein and arterial lesion was crossed with a .035” Terumo wire then dilated with a 7.0/40 mm Wanda balloon at 6 atm. Brisk antegrade flow with adequate angiographic result was achieved. However, progressive left arm swelling was noted after procedure hence she re-visited our cath lab one week later. Angiography disclosed stenosis over innominate vein, which was missed on prior angiography. A 8 Fr sheath was inserted antegradely to cephalic vein and the lesion was crossed with a .035” Terumo wire then dilated with a 12.0/40 mm Fox balloon at 8 atm. Brisk antegrade flow with adequate angiographic result was achieved and pressure decreased from 40 to 20 mmHg after PTA. Arm swelling subsided in 3 days.

Conclusion: In managing AVF malfunction, it is important to decide whether if it is an ‘inflow problems’ or ‘outflow problems’. PTA to arterial lesion in a case with central vein stenosis without PTA to vein lesion may result in severe hyperperfusion syndrome and arm swelling.