

## A different perspective for creating fistula

Sir,

We have read with great interest the article entitled "Prospective long-term study of patency and outcomes of 505 arteriovenous fistulas (AVFs) in patients with chronic renal failure: Authors experience and review of literature" published in Indian Journal of Plastic Surgery 2014; 47 (3): 362-369.<sup>[1]</sup> The authors aimed to document the experience of AVF creation as vascular access for haemodialysis.

In this study, authors performed proximal fistula with side-to-side anastomosis between antecubital or basilic vein and brachial artery. They have dilated the distal vein to allow retrograde flow into forearms. They say that this technique avoids requirement of basilic vein transposition and reduces long incision and morbidity. The purpose of the creation an AVF is forming an arterialized, large diameter and long segment venous structure. According to the National Kidney Foundation, patients should be considered first for wrist radiocephalic, and then elbow brachiocephalic fistulas. After completion of these options, the third option is transposed basilic vein fistula and then saphenous vein or artificial grafts.<sup>[2]</sup> If we cannot perform a fistula on forearm due to low-quality veins, we use proximal cephalic or basilic vein. We think that side-to-side anastomosis of these veins to the brachial artery without ligation of the distal part may not get sufficient results, because of previously failed distal veins or low-quality veins. This technique does not reveal good distal venous cannulation because of deficient vein expanding. Otherwise side-to-side anastomosis of the basilic vein to the brachial artery may result in effective venous flow rate both distally and proximally, but a fistulized basilic vein without transposition is not effective for cannulation because of being deeply situated. Nowadays, basilic vein transposition can be performed with minimally invasive methods with low morbidity.<sup>[3]</sup>

The authors also say that in cases where antecubital vein was used, both cephalic and basilic veins got arterialized and could be cannulated, so they could use both of the veins for future haemodialysis interventions. We think that using median cubital vein, and keeping the cephalic and basilic vein intact is unfavourable. We do not prefer this technique, because either cephalic vein or basilic vein will grow and expand, or only basilic vein will

expand instead of the cephalic vein owing to its big size compared with the cephalic vein. If both of them grow, AVF flow may be low and inadequate for haemodialysis. The basilic vein grows instead of the cephalic vein patients may not receive sufficient hemodialysis because of the deep course of the basilic vein. The cephalic vein is blocked due to thrombosis after continuous usage for haemodialysis, thrombosis may also damage the basilic vein and the surgeon may not be able to perform a new transposed basilic AVF because of its expanded or degenerated structure. Otherwise a larger and high flow basilic vein may lead to a steal syndrome or arm oedema with venous hypertension through the side branches. In this study, 33 (6.5%) patients developed steal syndrome and 2 (0.4%) patients developed distal oedema. We think side-to-side anastomosis and long vein segment in more than one vein is an important factor developing venous hypertension, arm oedema and steal syndrome.

In conclusion, we think that we have to fistulise a single large segment vein in the arm or forearm; we do not need two fistulised veins at the same time. If we use median cubital vein for anastomosing, we have to ligate and divide the connection to the basilic vein, so we can use it later for transposing when we need. Side-to-side anastomosis of the vein can cause arterialisation of all segments (arm and forearm) of the vein, and if both sides of the vein are arterialized, this technique may lead steal syndrome and venous hypertension and may cause decrease total fistula count that can be used for a patient. We prefer end-to-side anastomosis technique preventing these complications.

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