

A NOVEL TECHNIQUE OF ARTERIOVENOUS FISTULA CREATION BY NEPHROLOGIST AND ITS OUTCOMES: A PROSPECTIVE MULTICENTRIC COHORT STUDY FROM SOUTH INDIA



GIREESH REDDY G, VEL ARAVIND S, SAHIL ARORA, DWARAK S, DILEEP KUMAR P, CHERIN P JOSHI, SREEDHARA C G, KISHAN A, MYTHRI S. Dept. of Nephrology, Institute of Nephro Urology – Bengaluru, Pineapple Kidney Care – Trichy.

BACKGROUND

The burden of chronic kidney disease is on the rise. Majority of the patients with end-stage renal disease are crash landers without a planned vascular access. Non Tunneled catheters contribute to significant morbidity and mortality due to catheter-associated complications. Considering the above mentioned factors. It becomes imperative that AVF creations are performed by nephrologists .This helps to reduce vascular surgeons' workload and enhance the timely treatment of patients with end-stage renal disease (ESRD). We examined the AVF surgical success and failure rates and associated predictors as well as early complications of AVF creations by a trained nephrologist utilizing the novel technique.

METHODS

A prospective cohort study was conducted on all adult ESRD patients in 2 centres between April 2020 and september 2024. Information on demographic characteristics, comorbidities, and AVF creations was collected using a standardized questionnaire. AVF was created using the novel technique describe below. All patients were followed up until 18 weeks post-surgery.



REVERSE AVF TECHNIQUE

Anesthesia: 2 %lignocaine, local infiltration around the incision. Site : Distal most medial arm, just above and medial to the humerus epicondyle. Length of the incision: 4 cm to 5 cm. Dissection: Skin and subcutaneous tissues retracted in -toto to expose the basilic vein and the brachial artery. Then, Basilic vein was cut proximally and tied . The distal portion of the basilic vein is kept taut, various venous sizes (0.5 mm to 2 mm) dilators are passed retrograde, all resisting venous valves are broken with repeated passing of vein dilators till the operator feels smooth back & forth sliding.

Suturing technique: End-to-side, Basilic vein to Brachial artery anastomosis using either 6-0 or 7-0 prolene.



RESULTS

Among 300 patients with a mean age of 61.22 ± 17.11 years old, male accounted for 54%. The common causes of ESRD are diabetes (45), CGN 20, chronic tubulo interstitial nephritis 25, and others 10 percent. The successful first-time AVF creation rate was 98% .The primary and secondary AVF failure rates were 2% 3% respectively. Early complications included bleeding (1%) and early thrombosis of the anastomosis (2% There was a statistically significant association between age and primary AVF failure (P=.005) and between operation time and secondary AVF failure (P=.038)Access created using this technique matured quickly and could be used early when compared to the access created using the conventional technique. Incidence of high Flow vascular access was very low with this technique.

CONCLUSIONS

AVF creations performed by well-trained and skilled interventional nephrologists utilizing this novel technique can result in favorable short- and long-term outcomes. Access creation using this novel technique significantly reduces the dependency on Non tunnelled catheters. It is important to follow up older patients and those with a long operation time to detect AVF failures. A standardized AVF creation training program and practice for nephrologists is needed to increase successful rates.