

## Dialysis Access Surgery for Patients in Renal Failure: A 10-Year Institutional Experience

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**Abstract :** Introduction: Dialysis access is a key component of the care of patients with end stage renal failure. In our institution, a combined service of vascular surgeons and nephrologists are responsible for the creation and maintenance of arteriovenous fistulas (AVF), tenckhoff catheters and Hickman/permcath lines. This poster investigates the last 10 years of dialysis access surgery conducted at St. Vincent's Hospital Melbourne. Method: A cross-sectional retrospective analysis was conducted of patients of St. Vincent's Hospital Melbourne (Victoria, Australia) utilising data collection from the Australasian Vascular Audit (Australian and New Zealand Society for Vascular Surgery). Descriptive demographic analysis was carried out as well as operation type, length of hospital stays, postoperative deaths and need for reoperation. Results: 2085 patients with renal failure were operated on between the years of 2011 and 2020. 1315 were male (63.1%) and 770 were female (36.9%). The mean age was 58 (SD 13.8). 92% of patients scored three or greater on the American Society of Anesthesiologists classification system. Almost half had a history of ischaemic heart disease (48.4%), more than half had a history of diabetes (64%), and a majority had hypertension (88.4%). 1784 patients had a creatinine over 150mmol/L (85.6%), the rest were on dialysis (14.4%). The most common access procedure was AVF creation, with 474 autologous AVFs and 64 prosthetic AVFs. There were 263 Tenckhoff insertions. We performed 160 cadaveric renal transplants. The most common location for AVF formation was brachiocephalic (43.88%) followed by radiocephalic (36.7%) and brachiobasilic (16.67%). Fistulas that required re-intervention were most commonly angioplastied (n=163), followed by thrombectomy (n=136). There were 107 local fistula repairs. Average length of stay was 7.6 days, (SD 12). There were 106 unplanned returns to theatre, most commonly for fistula creation, insertion of tenckhoff or permacath removal (71.7%). There were 8 deaths in the immediately postoperative period. Discussion: Access to dialysis is vital for patients with end stage kidney disease, and requires a multidisciplinary approach from both nephrologists, vascular surgeons, and allied health practitioners. Our service provides a variety of dialysis access methods, predominately fistula creation and tenckhoff insertion. Patients with renal failure are heavily comorbid, and prolonged hospital admission following surgery is a source of significant healthcare expenditure. AVFs require careful monitoring and maintenance for ongoing utility, and our data reflects a multitude of operations required to maintain usable access. The requirement for dialysis is growing worldwide and our data demonstrates a local experience in access, with preferred methods, common complications and the associated surgical interventions.

**Keywords :** dialysis, fistula, nephrology, vascular surgery

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