**Supplementary material**

**Table S1. Characteristics of the patients**

|  |  |
| --- | --- |
| **Characteristic** | **Statistics** |
| **Number of patients** | 33 |
| **Age(year),median±s.d.** | 63.3±13.1 |
| **Gender, male/female** | 9/24 |
| **Primary disease, n(%)** |  |
| Glomerular diseases | 20 (60.6) |
| Diabetes kidney disease | 6(18.2) |
| Polycystic kidney disease | 4(12.1) |
| Obstructive nephropathy | 1(3.0) |
| Bilateral renal artery stenosis | 2(6.1) |
| **Dialysis duration(month), median±SD** | 46.7±23.9 |
| **Major complication of TCC, n(%)** |  |
| Catheter dysfunction | 19(57.6) |
| CVO | 27(81.8) |
| CRBSI | 1(3.0) |
| **Previous vascular access number, n(%)** |  |
| 0 | 0(0.0) |
| 1 | 10(30.3) |
| 2 | 10(30.3) |
| ≥3  | 13(39.4) |

CRBSI: Catheter related bloodstream infections; CVO: central vein obstruction

**Table S2. The causes of last TCC failure on admission**

|  |  |  |
| --- | --- | --- |
| **Central venous abnormities** |  | **No.（%）** |
| SVC thrombus |  | 2 (6.1) |
| SVC stenosis |  | 9 (27.3) |
| SVC occlusion |  | 10 (30.3) |
| SVC fibrin sheath |  | 1 (3.0) |
| right atrium thrombus |  | 2 (6.1) |
| right atrium fibrin sheath |  | 4 (12.1) |
| right internal jugular vein and right innominate vein occlusion |  | 3 (9.1) |
| SVC with abnormal route |  | 1 (3.0) |
| TCC break and the residue in right atrium |  | 1 (3.0) |
| TCC: tunnelled cuffed catheter; SVC: superior vena cava　 |