WELCOME *To the*

2026 SYMPOSIUM

When the IJ is Gone— Where Do We Go?

Venous Access in the Exhausted Patient

Dialysis Catheter Placement • Advanced Access Techniques

Michael Tal, MD, MBA

Disclosure

- N/A

The Crisis

84% | **of ESRD patients start dialysis with catheters**

A Growing Problem

Catheters are here to stay - and are becoming even more common as the ESRD population grows and access options become exhausted.

Complications Are Common

Catheters induce central and venous stenosis, infection, and thrombosis - consuming future access options with every placement.

Site Selection Matters

Access point choice has a profound impact on patient survival, quality of life, and morbidity. The right decision early changes everything.

The Old Paradigm



CONVENTIONAL

Right IJ · EJ · Left IJ

- 0–10% central stenosis (R IJ)
- Gold standard patency
- EJ: 65% at 6 months
- Left IJ: higher occlusion than right

Cimochowski et al., Nephron 1990
Schillinger et al., NDT 1991

HIGH RISK / AVOID

Subclavian · Femoral

- Subclavian: 42–50% central stenosis
- Subclavian: destroys future AVF
- Femoral: 3.1× bacteremia vs. IJ
- Femoral: median patency 59 days

Cimochowski, Kidney Int 1987
Oliver et al., Kidney Int 2000

HEROIC / LAST RESORT

Translumbar · Transhepatic · Transrenal

- Translumbar: 7% patency at 12 mo
- Transhepatic: 5.7× infection vs. TL
- Transrenal: only 6 cases published
- All: rapidly declining patency

Lund et al., JVIR 2004
Stavropoulos et al., JVIR 2012
Murthy et al., JVIR 2002

What is the reality

25 Years Placing Dialysis Catheters

- A few translumbar
- A few transhepatic
- One transrenal
- None for ~20 years

What Really Happens?

- Right IJ / Right brachiocephalic
- Right EJ
- Femoral
- Restoration of right-sided central venous access

Preferred Initial Access

Direct Right Brachiocephalic- IJ Junction Puncture

IJ Shelf



IJ has a shelf at the BCF confluence — direct BCF puncture avoids it

Regular IJ access



More direct path to the SVC with less angulation

Smoother Curve Straighter Course



No Medial Wall Pressure

Direct Brachiocephalic- IJ junction access
Reduces risk of central vein injury and stenosis

Time for a New Paradigm

1. **Right Brachiocephalic-IJ junction Access**
2. **Right-sided Collaterals**
3. **Femoral Catheter as Bridge (if needed)**
4. **Central vein Recanalization**

Technology and techniques have evolved - the traditional IJ-first hierarchy is no longer the only option. Modern toolkits allow a more flexible, patient-centered approach.

We Must Avoid the Left Side

High Central Vein Occlusion Rate- risk for SCV syndrome

Left brachiocephalic vein has significantly higher stenosis and occlusion rates compared to right-sided access.

Salik E, Daftary A, Tal MG.
Three-dimensional anatomy of the left central veins: implications for dialysis catheter placement. *J Vasc Interv Radiol.* 2007 Mar;18(3):361-4. doi: 10.1016/j.jvir.2006.12.721. PMID: 17377181.

Preserve for Fistula

The left arm is the preferred site for arteriovenous fistula creation. Protecting left-sided veins ensures future AV access options remain available.

Longer Catheter Course

The left-sided route is anatomically longer, increasing catheter dysfunction, kinking, and malposition risk.

Avoid Long-Term Femoral Access



Higher Infection Rate

Groin access carries significantly elevated infection and bacteremia risk vs. thoracic sites



Poor Mobility

Femoral catheters severely restrict patient movement, limiting ambulation and daily activities



Poor Quality of Life

Combination of immobility and infection risk leads to significantly reduced patient wellbeing and independence

Femoral access should only be used as a short-term bridge — never as a long-term solution.

Avoid Heroic Access

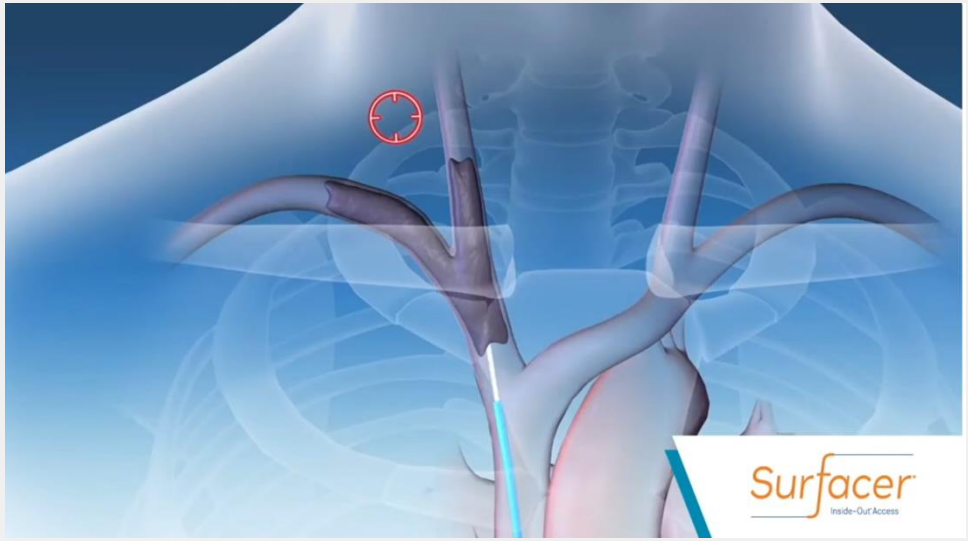
Translumbar · Transhepatic · Transrenal

- Poor procedural outcomes and high complication rates
- Extremely difficult to maintain — requires specialized expertise
- Severely compromises patient quality of life

Modern techniques — particularly the inside-out procedure — have made these historical approaches largely unnecessary. Reserve them only when all other options are exhausted.

The Inside-Out Concept — Surfacer Technique

1	**Femoral Access**	Standard venous approach from the groin under imaging guidance
2	**Recanalize Inside-Out**	Navigate through occluded central veins using specialized devices
3	**Exit Supraclavicular**	Device exits in the right supraclavicular region under the skin
4	**Restore Tunneled Right-Sided Access**	Pull catheter through tunnel — restoring durable chest wall access



Proposed New Access Algorithm

1. **Right Brachiocephalic-IJ Junction Access**
   First-line preferred approach
2. **Right-Sided EJ or Collateral**
   Explore right-sided alternative routes
3. **Tunneled Femoral Catheter**
   Bridge only - short-term while planning definitive access
4. **Central venues Recanalization**
   Surfacer technique or other
5. **Avoid: Left Side & Heroic Access**
   Reserve only as last resort

Take Home Message

- Stay right-sided — it's safer and more effective
- Use direct right brachiocephalic- IJ Junction as first access
- Master recanalization and employ when right side is occluded
- Preserve future fistula options - protect the left arm
- Avoid heroic access

Modern tools should — and must — change the paradigm.