WELCOME To the

2026 SYMPOSIUM

Access for Morbid Obesity: Creating a Cannulable Access in a Complex Patient

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Disclosure of Conflicts of Interest

The speaker declares **no conflicts of interest** relevant to the content of this presentation.

No financial relationships with commercial entities producing products or services discussed.

Mexico Is Already in the Severe Obesity Era

ENSANUT 2020–2023 vs. United States 2021–2023

37.1%

Adult obesity prevalence in Mexico (BMI ≥30)

ENSANUT 2020–2023

3.9%

Class III / morbid obesity (BMI ≥40) — women: **4.9%**

ENSANUT 2020–2023

40.3%

Adult obesity prevalence in the United States (BMI ≥30) — severe obesity: 9.4%

CDC 2021–2023

"Mexico's dialysis population increasingly resembles high-BMI populations seen in the United States — but with fewer dedicated access pathways and no national vascular access registry."

Obesity and Kidney Disease Travel Together

The morbidly obese dialysis patient is rarely just obese

- **Diabetes mellitus:** leading cause of ESKD globally; directly linked to obesity in Mexico's metabolic phenotype
- **Hypertension:** accelerates CKD progression; heightens surgical and anesthetic risk
- **Chronic inflammation:** impairs wound healing, promotes myointimal hyperplasia, elevates thrombosis risk
- **Hypercoagulability:** higher early thrombosis rates post-AVF creation
- **Peripheral vascular disease:** compromises vessel quality for anastomosis

33%

of all US ESKD cases associated with obesity and metabolic syndrome

Wang et al., Kidney Int 2008

7×

increased risk of ESKD for patients with BMI ≥35 vs. normal weight

Anderson & Brooke, Ann Vasc Surg 2023

What Does Obesity Actually Do to AVF Outcomes?

Three landmark studies — 2023

STUDY	N	KEY FINDING
Lee et al. *Ann Vasc Surg* 2023	**305,037**	Higher BMI → ↑ maturation failure, ↓ primary patency, ↑ reinterventions
Anderson & Brooke *Ann Vasc Surg* 2023	**202**	BMI ≥35 → **OR 0.38** for functional maturation (p=0.009). Cause: **depth**, not flow or diameter
Davies et al. *J Vasc Surg* 2023	**2,311**	Class III obesity → **74%** require additional procedures to mature vs. **22%** class I

> *"A fistula can be mature by flow and diameter — yet failed by depth."*
>
> The primary mechanism of access failure in morbid obesity is tissue depth, not vascular insufficiency

The Key Problem: Usability

Maturation ≠ Usability (KDOQI 2019)

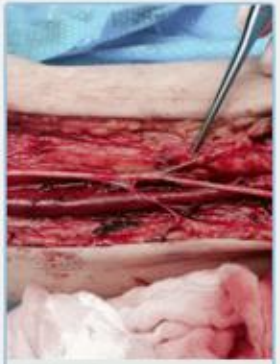
✓ "MATURE" BY STANDARD CRITERIA	✗ FUNCTIONALLY FAILED IN OBESITY
✅ Flow ≥600 mL/min	❌ Depth >6–8 mm — not cannulable
✅ Diameter ≥6 mm	❌ Dialysis unit cannot needle it reproducibly
✅ No stenosis detected	❌ Patient remains catheter-dependent
✅ Patient anastomosis	❌ Functional maturation criteria NOT met

> *KDOQI 2019 defines functional maturation as cannulation with two needles for 75% of sessions over four consecutive weeks. Depth alone can prevent this — regardless of flow or diameter.*

Surgical Planning: A Scenario-Based Approach

Plan from day zero — preoperative Doppler mapping is mandatory

Adequate superficial vein, acceptable depth	**Standard AVF** distal or proximal	Basilic vein adequate but deep	**Basilic transposition** 1 or 2 stages
Mature cephalic AVF — postop depth problem	**Superficialization:** lipectomy, liposuction, or transposition	Poor superficial veins bilaterally	**AVG** — individualized per ESKD Life-Plan
Treatable central venous stenosis	**PTA ± stent-graft** before or during access creation	Central occlusion + catheter dependence	**Recanalization + HeRO graft** in selected patients
Upper extremities exhausted	**Femoral / thigh graft** or unconventional options	No reasonable option remaining	**Re-evaluate:** PD, transplant, or palliative pathway



INCMNSZ · SUPERFICIALIZATION
Vessel loop isolation prior to AVF transposition. Note subcutaneous tissue depth.



INCMNSZ · LIPECTOMY
Subcutaneous fat excision in morbidly obese patient. Depth is the access problem.

When Obesity Meets Central Venous Disease

Three simultaneous failure mechanisms

PROBLEM 1

Inflow

Peripheral vessels compromised by DM + obesity. Reduced arterial caliber, myointimal hyperplasia, low intraoperative blood flow.

PROBLEM 2

Cannulation

Excessive subcutaneous fat depth. Mature fistula inaccessible to dialysis needles. Functional failure despite adequate flow and diameter.

PROBLEM 3

Outflow

Catheter-related central venous stenosis / occlusion. Over 80% of Mexican patients start HD on a catheter — years of central venous exposure accumulate.

> *"Morbid obesity makes access difficult. Central venous disease makes it complex."*

HeRO Graft in the Obese Patient: What Does the Evidence Show?

Obesity modifies HeRO outcomes — patient selection is critical

INDICATIONS (ALL PATIENTS)

- **Central venous stenosis/occlusion** — confirmed, not amenable to correction
- **Chronic catheter dependence** — no functional permanent access
- **≥2 failed conventional accesses** in upper extremities

232 implants · 10 yrs

Secondary patency 12 mo: **71.9%**. Limited primary patency but acceptable secondary patency in access-challenged patients.

Kim Y et al. J Vasc Surg 2025 — Duke University (largest series)

OBESITY-SPECIFIC OUTCOMES — ONLY PUBLISHED SERIES

OUTCOME	OBESE	NON-OBESE	P
Primary nonfunction	**38.5%**	**0%**	**0.005**
Early graft loss (<1 yr)	**RR 5.12**	—	**0.023**
Median graft patency	**311 days**	**1,295 days**	**0.014**
12-month patency	**10.5%**	**53.9%**	**0.023**

BMI as a continuous variable was an independent predictor of primary nonfunction and early graft loss on multivariate analysis — above and beyond age, sex, race, and diabetes.

Naffouje SA et al. Ann Vasc Surg 2016;36:236-243. U. of Illinois, n=34 HeRO placements, median follow-up 635 days.

Take-Home Messages

Access for Morbid Obesity — INCMNSZ, México

1. Morbid obesity is a **functional access problem**, not only a surgical exposure problem.
2. **Depth** is as important as diameter and flow — plan superficialization preoperatively.
3. A mature fistula that cannot be cannulated **is a failed access**.
4. Superficialization should be **anticipated**, not treated as surgical failure.
5. In complex patients, **central venous outflow** determines the access pathway.
6. HeRO graft belongs in the toolbox for **catheter-dependent, centrally obstructed** patients with exhausted options.
7. The endpoint is not access creation — it is **reliable, cannulable, durable dialysis** without chronic catheter dependence.

> *"In morbid obesity, the measure of success is not what we create in the operating room — it is what the dialysis nurse can reliably needle three times a week."*