

#### 01. Clinic Courtyard Kickoff

Three cheerful Latin American research interns in colorful explorer outfits outside Mayo Clinic Jacksonville, holding clipboards; Dora-style bold outlines; speech bubbles; playful arrows point

Camila: "Hola! Ready to map Type 2 endoleaks?"

Camilo: "Si! Let's explore the hidden flow paths!"

Diego: "Dr. Erben wants clear visuals and data."

#### 02. Goal Map

Comic-style whiteboard with sketched aorta and aneurysm sac; treasure map arrows pointing to side branches; interns point with colorful markers.

Diego: "Objective: 30 scenes cada peso claro."

Camila: "Story must teach without extra text."

Camilo: "Speech bubbles carry the science!"

#### 03. Define Type 2

Aorta cutaway; aneurysm sac; small lumbar artery feeding retrograde flow; bright labels and dotted arrows.

Camilo: "Type 2 = retrograde inflow from branches."

Camila: "Nota leak at the seal sino colaterales."

#### 04. Flow Mechanism

Zoomed lumen with swirling contrast; smiling arrows; stylized bone landmarks.

Diego: "Lumbar or IMA feed in; pressure keeps sac perfused."

Camilo: "Outcome depends on sac growth."

#### 05. Risk Signal

Cartoon sac with tape measure; green check for stable; red arrow for >5 mm growth.

Camila: "Stable sac? We watch."

Diego: "Growth >5 mm? Intervention time."

#### 06. Imaging Plan

CTA scanner drawn friendly; checklist bubbles arterial phase; delayed phase; source vessel hunt.

Camilo: "CTA arterial plus delayed to catch slow flow."

Camila: "Buscamos el vaso que alimenta el saco."

## 07. CTA Frames

Two panels inside one: early frame pale, delayed frame brighter sac blush; arrows highlight blush.

Diego: "Delayed blush confirms persistent inflow."

Camilo: "Comparo diámetros. Acrece el saco?"

## 08. Source Vessel Hunt

CT-like grayscale with colored arrows tracing lumbar artery into sac; magnifying glass icon.

Camila: "Aquí entra la lumbar, mira la flecha."

Diego: "Target identified; plan embolization route."

## 09. Team Check-in

Videocall tablet with Dr. Erben smiling, interns thumbs up.

Dr. Erben: "Evidence first show sac trend and vessel map."

Camilo: "Tenemos los datos listos!"

## 10. Observation Path

Simple flowchart stable sac -> observe -> schedule CTA; icons of calendar and happy sac.

Camila: "Mitad se resuelve sola en 6 meses."

Diego: "Seguimos vigilando con CTA seriada."

## 11. Intervention Path

Flowchart path glowing red sac growth -> plan embolization; catheter icon

Camila: "Si crece >5 mm, tocamos el saco."

Camila: "Elegimos la ruta: transarterial o transtumbar."

## 12. Transarterial Route

Colorful catheter snake entering lumbar artery toward sac; coil icons

Diego: "Cateterizamos la lumbar con microcatéter 2.0F."

Camilo: "Coils primera, luego Onyx si queda espacio."

## 13. Translumbar Route

Posterior approach with needle entering sac; shielded spine backdrop.

Camila: "Ruta directa si arterias tortuosas."

Diego: "Precisión con angiCT para evitar raticz lumbar."

## 14. Novel Idea Spark

3D printed sac model with glow; lightbulb comic effect; interns pointing.

Camilo: "Y si mapeamos flujo con microburbujas persistentes?"

Camila: "Podemos cuantificar duración del blush."

## 15. Microbubble Tracker

CEUS-style screen with bright bubbles swirling into sac; timer overlay.

Diego: "Medimos wash-in y wash-out en segundos."

Camilo: "Límite: si >60 s mayor riesgo de crecimiento."

## 16. Dual-Phase CTA Overlay

Split-screen slider merging arterial and delayed CTA frames; color overlay on sac.

Camila: "Fusionamos fases para localizar inflow exacto."

Diego: "Esto guía el microcatéter directamente."

## 17. Pressure Monitoring

Small pressure gauge icon tapped into sac; gauge needle dropping after test embolization.

Camilo: "Idea: microsensor en catéter para presión de saco."

Camila: "Si cae, sabemos qué sellamos bien."

## 18. Outcome Data Wall

Poster showing success rates: resolution 70-80%; recurrence 10-20%; chart arrows.

Diego: "Datos: resolución 70-80% con embolización selectiva."

Camilo: "Recurrencia 10-20% por eso seguimiento."

## 19. Patient Talk

Friendly counseling scene; anatomical model on table.

Camila: "Explicamos no es fuga del stent, son ramas pequeñas."

Diego: "Plan: vigilar, y si crece, sellar con coils o pegamento."

## 20. Sterile Prep

Comic catheter lab with blue drapes; checklists floating

Camilo: "Checklist anticoagulación, acceso, microcatheter listo."

Camila: "Recordamos fluoroscopia baja dosis"

## 21. Coil Deployment

Coils spiraling into sac; contrast swirl stops; celebratory sparkles

Diego: "Coils hasta estasis Onyx si persiste flujo lento."

Camilo: "Control con angiografía final."

## 22. Post-Procedure CTA

CTA slice showing thrombosed sac without blush; green checkmark.

Camila: "A las 6-12 semanas CTAs sin realce."

Diego: "Confirmamos diámetro estable o menor."

## 23. Pilot Study Draft

Poster with bullet points: CEUS microbubble persistence, sac pressure probe, overlay tool

Camilo: "Hipótesis burbuja >60 s predice expansión."

Camila: "Probaremos en 20 pacientes consecutivos."

## 24. Sample Size Debate

Calculator, coffee cups, charts; playful arrows

Diego: "Poder 80% alfa 0.05, necesitamos 34 casos."

Camilo: "Agreguemos margen por pérdidas al seguimiento."

## 25. Ethics Reminder

Consent form with heart icon, clipboard sticker 186; friendly tone.

Camila: "Consentimiento informado claro y bilingüe."

Diego: "Riesgos mínimos, beneficio potencial alto."

## 26. Data Capture

Laptop screen showing live sac diameter chart; cloud icon for registry.

Camilo: "Capturamos diámetro, blush time, presión intra-saco."

Camila: "Usamos hoja REDCap con alertas automáticas."

## 27. Result Teaser

Upward and flat lines comparing growth vs stable; bubbles labeled fast vs slow wash-out.

Diego: "Si wash-out lento correlaciona, cambiamos algoritmo."

Camilo: "Intervenimos antes en altos riesgos."

## 28. Teaching Moment

Whiteboard with three bullets: identify source, measure sac, choose approach.

Camila: "Tres pasos: localizar, medir, decidir ruta."

Diego: "Siempre revisar fases retardadas, siempre."

## 29. Future Tech Dream

Tablet showing holographic artery overlay on patient abdomen; playful stars.

Camilo: "Sueño: AR que muestre la arteria culpable en vivo."

Camila: "Y que guíe el microcatheter como GPS."

## 30. Wrap-Up with Dr. Erben

Interns present poster to Dr. Erben; smiley stickers.

Dr. Erben: "Buen trabajo ciencia clara, visual y medible."

Diego: "Listos para enroscar pacientes y publicar!"

31. Patient Success

Happy patient walking with cane; sac diagram showing shrinkage.

Camila: "Saco 5 mm más pequeñas sin blush."

Camilo: "Seguimiento anual y fin."

32. Future Paper

Mock journal cover titled "Type 2 Endoleak Flow Dynamics"; celebratory confetti.

Diego: "Enviamos manuscrito con cohorte y CEUS data."

Camila: "Compartimos código y modelo los 3D abiertos."