Exclusión de aneurisma de aorta abdominal. Lecciones para una técnica correcta

Hugo F. Londero

Servicio de Hemodinamia e

Intervenciones por Cateterismo

Sanatorio Allende-CCórdoba

Mem Acad Chir (Paris). 1951 Apr 11-18;77(12-13):381-3.

[Treatment of aortic aneurysms; removal of the aneurysm; re-establishment of continuity by grafts of preserved human aorta].

[Article in Undetermined Language]

DUBOST C, ALLARY M, OECONOMOS N.

Transfemoral Intraluminal Graft Implantation for Abdominal Aortic Aneurysms

J.C. Parodi, MD*, J.C. Palmaz, MD†, H.D. Barone, PhD, *Buenos Aires, Argentina, and San Antonio, Texas*

This study reports on animal experimentation and initial clinical trials exploring the feasibility of exclusion of an abdominal aortic aneurysm by placement of an intraluminal, stent-anchored, Dacron prosthetic graft using retrograde cannulation of the common femoral artery under local or regional anesthesia. Experiments showed that when a balloon-expandable stent was sutured to the partially overlapping ends of a tubular, knitted Dacron graft, friction seals were created which fixed the ends of the graft to the vessel wall. This excludes the aneurysm from circulation and allows normal flow through the graft lumen. Initial treatment in five patients with serious co-morbidities is described. Each patient had an individually tailored balloon diameter and diameter and length of their Dacron graft. Standard stents were used and the diameter of the stent-graft was determined by sonography, computed tomography, and arteriography. In three of them a cephalic stent was used without a distal stent. In two other patients both ends of the Dacron tubular stent were attached to stents using a one-third stent overlap. In these latter two, once the proximal neck of the aneurysm was reached, the sheath was withdrawn and the cephalic balloon inflated with a saline/contrast solution. The catheter was gently removed caudally towards the arterial entry site in the groin to keep tension on the graft, and the second balloon inflated so as to deploy the second stent. Four of the five patients had heparin reversal at the end of the procedure. We are encouraged by this early experience, but believe that further developments and more clinical trials are needed before this technique becomes widely used. (*Ann Vasc Surg* 1991;*5*:491–499).

AAA - Lecciones para una técnica correcta de Exclusión

- *Necesidad de Intervención*
- *Selección del Paciente*
  - *Valoración por Tomografía*
  - *Trucos y secretos*

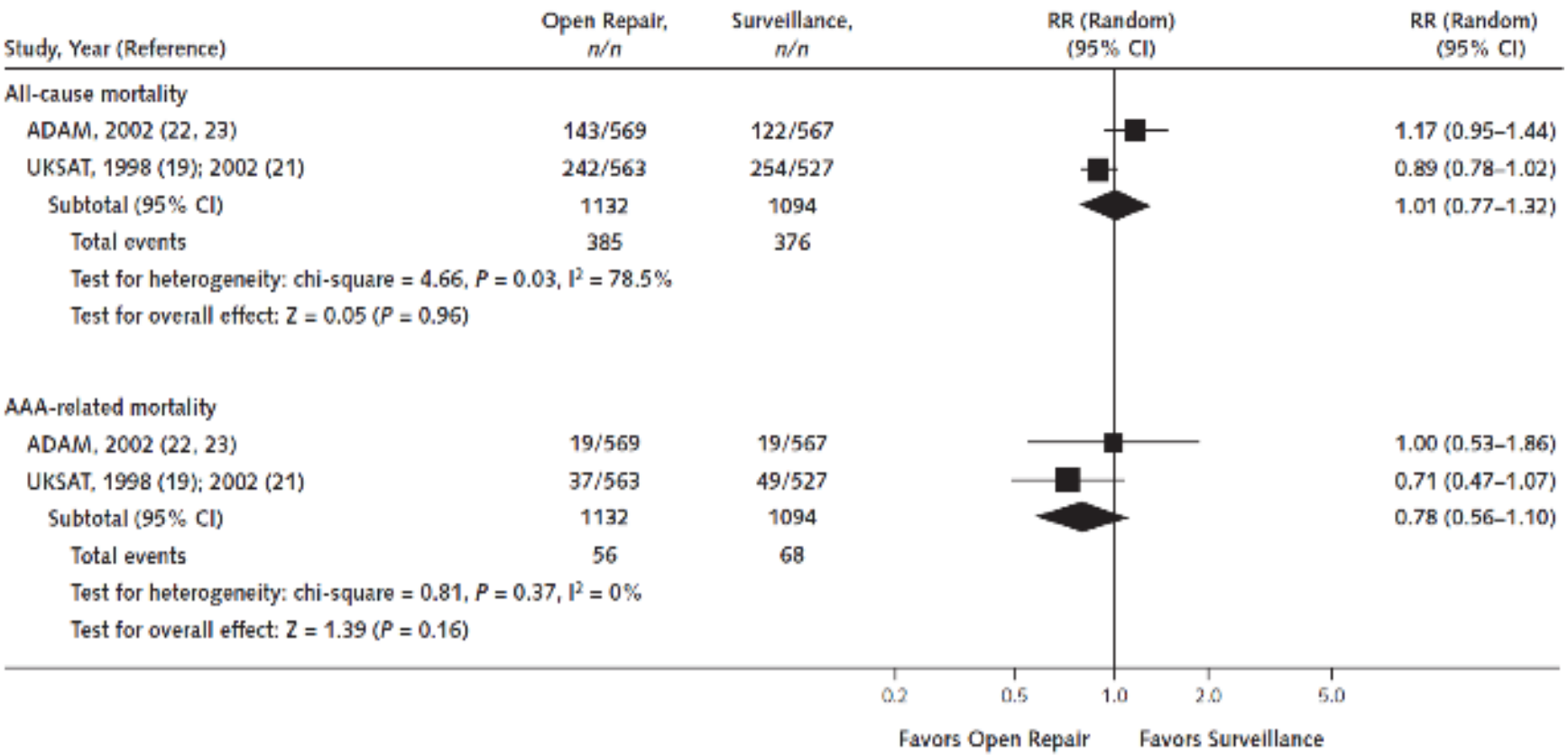
AAA – Necesidad de Intervención

- *Aneurismas pequeños (< 55 mm)*
- *Aneurismas ≥ de 55 mm*
- *AAA de Alto riesgo quirúrgico*

Está indicado el tratamiento quirúrgico en AAA de 4 á 5 cm?

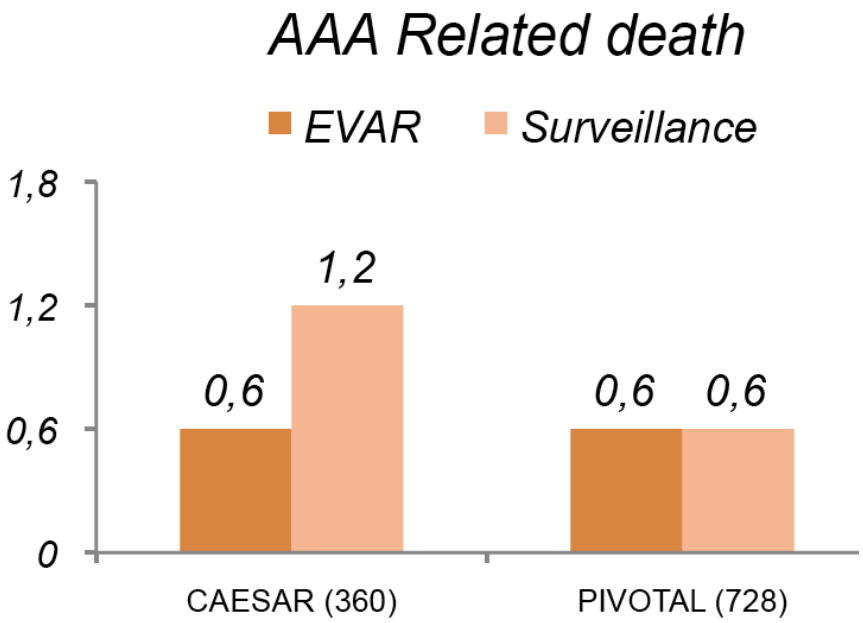
Tratamiento Quirúrgico Precoz vs. Seguimiento Estricto en Aneurismas Pequeños(< 5.5 cm) UK SAT & ADAM TRIALS

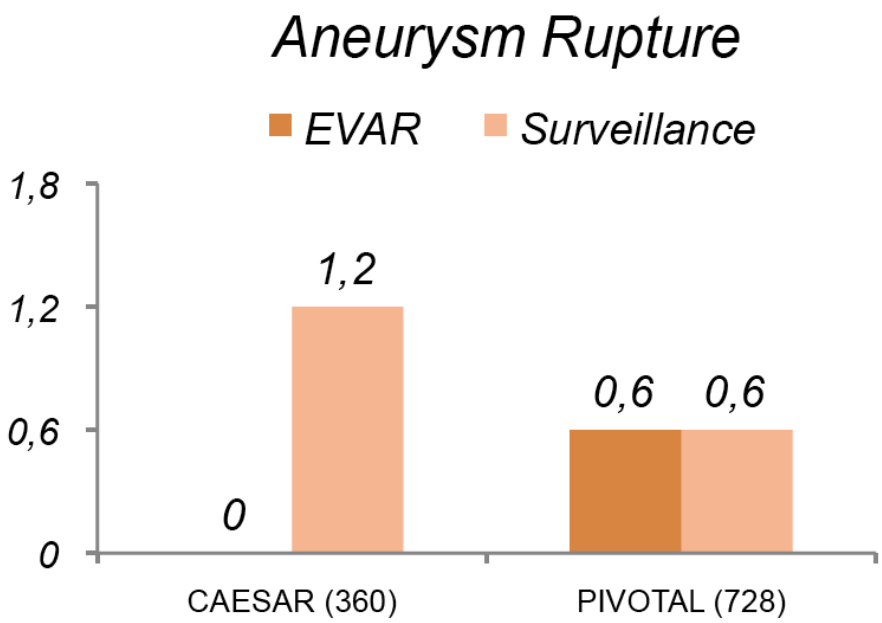
Figure 2. Randomized trials comparing immediate open repair with imaging surveillance for small unruptured abdominal aortic aneurysm (*AAA*).



*Está indicado el tratamiento **endovascular** en AAA de 4 á 5 cm?*

Estudios Randomizado que comparan EVAR vs Seguimiento en AAA pequeños (CAESAR - PIVOTAL)





Recomendaciones de la ESC para el tratamiento de los AAA

(European Heart Journal 2014; 35: 2873–2926)

Recomendaciones	Clase	Nivel
AAA de 25-29 mm de diametro se debe considerar un nuevo Eco Doppler a los 4 años	IIa	B
El seguimiento está indicado y es seguro en pacientes con un AAA con un diámetro máximo < 55 mm y crecimiento lento (< 10mm/año)	I	A
En pacientes con AAA pequeños (30-55mm) se deberá el siguiente esquema de seguimiento: •AAA de 30-39 mm de diámetro cada 3 años •AAA de 40-44 mm de diámetro cada 2 años •AAA > 45 mm de diámetro cada 1 año	IIa	B

AAA – Necesidad de Intervención

- *Aneurismas pequeños (< 55 mm)*
- *Aneurismas ≥ de 55 mm*
- *AAA de Alto riesgo quirúrgico*

Open Versus Endovascular Stent Graft Repair of Abdominal Aortic Aneurysms –A Metanalysis of Randomized Trials (Dangas G et al.JACC Interventions 2012;5:1072-80)

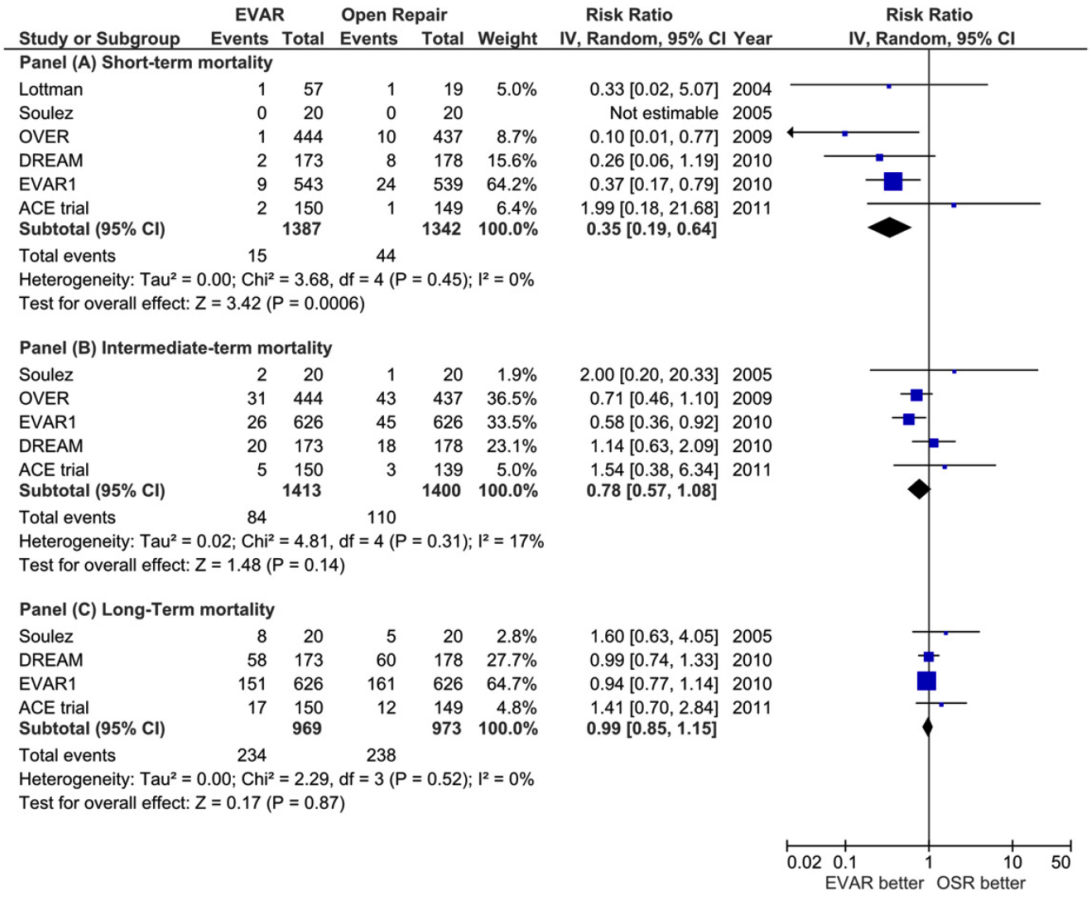


Figure 2. All-Cause Mortality

(A) Pooled mortality rates reported at 30-day post-procedure follow-up. **(B)** Cumulative outcomes reported at intermediate follow-up (up to 2 years after procedure). **(C)** Cumulative outcomes reported at follow-up of at least 3 years after procedure. CI = confidence interval(s); IV = intravenous; OSR = open surgical repair; other abbreviations as in Figure 1.

SANATORIO ALLENDE

Endovascular versus open repair of abdominal aortic aneurysm in 15-years' follow-up of the UK endovascular aneurysm repair trial 1 (EVAR trial 1): a randomised controlled trial (Patel R et al.Lancet 2016; 388: 2366–74)

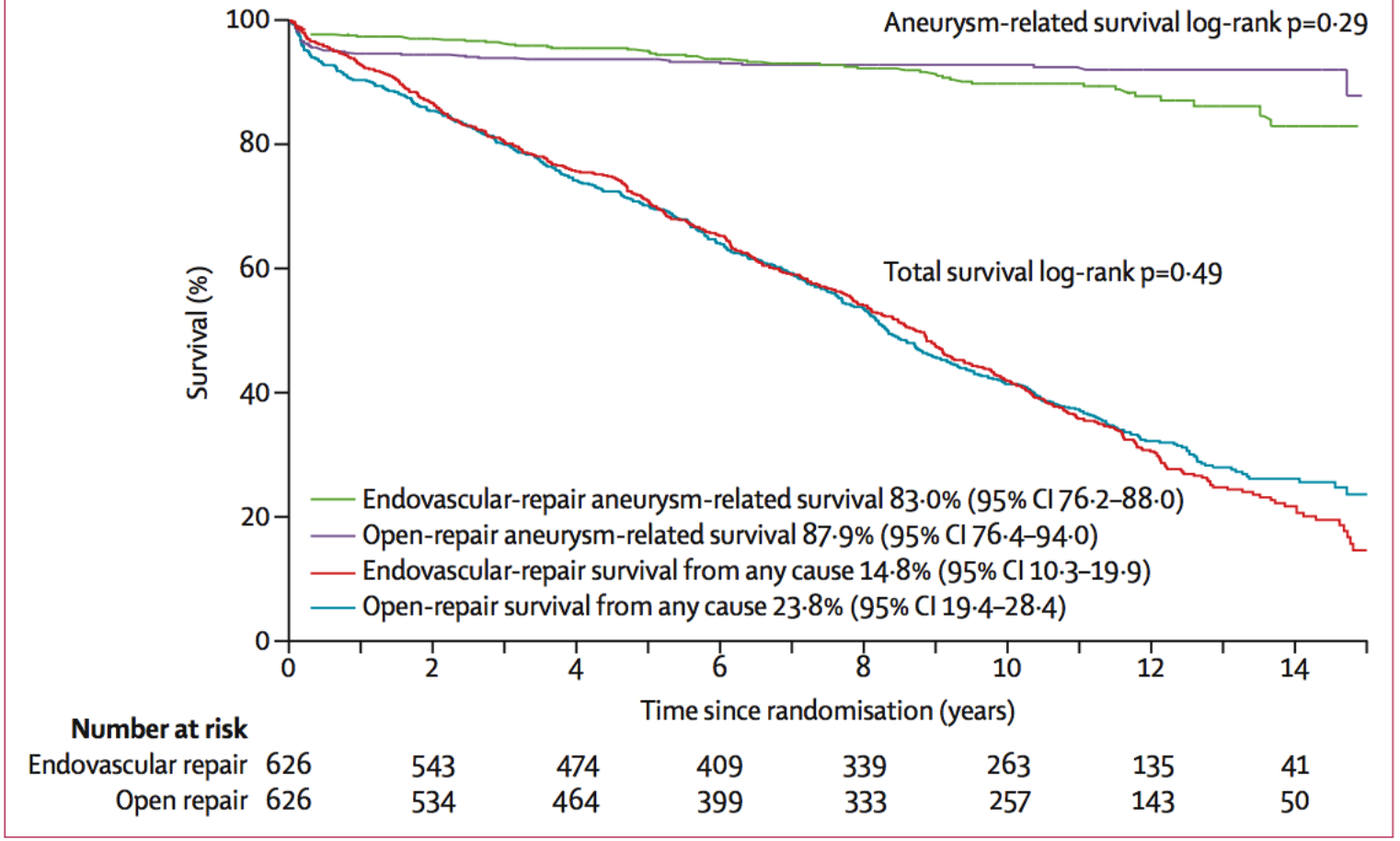


Figure 2: **Kaplan-Meier estimates for total survival and aneurysm-related survival up to 15 years of follow-up**
The hazard ratio is 1·05 (95% CI 0·92–1·19) for total mortality, and is 1·24 (0·84–1·83) for aneurysm-related mortality.

Recomendaciones de la ESC para el tratamiento de los AAA

(European Heart Journal 2014; 35: 2873–2926)

Recomendación	*Clase*	*Nivel*
La Intervención en un AAA está indicada si: • *El diámetro máximo exede 55mm.* • *Si el crecimiento excede 10mm/año*	***I***	***B***
En AAA grandes, anatómicamente adecuados para Tratamiento Endoluminal, en pacientes con Riesgo Quirúrgico aceptable, se recomiemda el tratamiento Endoluminal o Quirúrgico	***I***	***A***
Si un AAA grande no es anatómicamente adecuado para Tratamiento Endoluminal está recomendado el Tratamiento quirúrgico	***I***	***C***

AAA – Necesidad de Intervención

Aneurismas ≥ de 55 mm

Excepciones:

- *Mujeres (≥ de 45 mm)*
- *Aneurismas saculares/excéntricos*
- *Crecimiento > 10 mm en 1 año*
- *Signos de ruptura inminente*

Manejo de los Aneurismas de Aorta Abdominal:

- *Aneurismas pequeños (< 55 mm)*
- *Aneurismas ≥ de 55 mm*
- *AAA de Alto riesgo quirúrgico*

Endovascular Repair of Aortic Aneurysm in Patients Physically Ineligible For Open Repair-The United Kingdom EVAR Trial Investigators

N Engl J Med 2010;362:1872-80

EVAR 2 Trial :
PACIENTES NO QUIRURGICOS
AAA ≥ 5.5 cm.
338 pacientes randomizados

TRATAMIENTO MEDICO
N=172

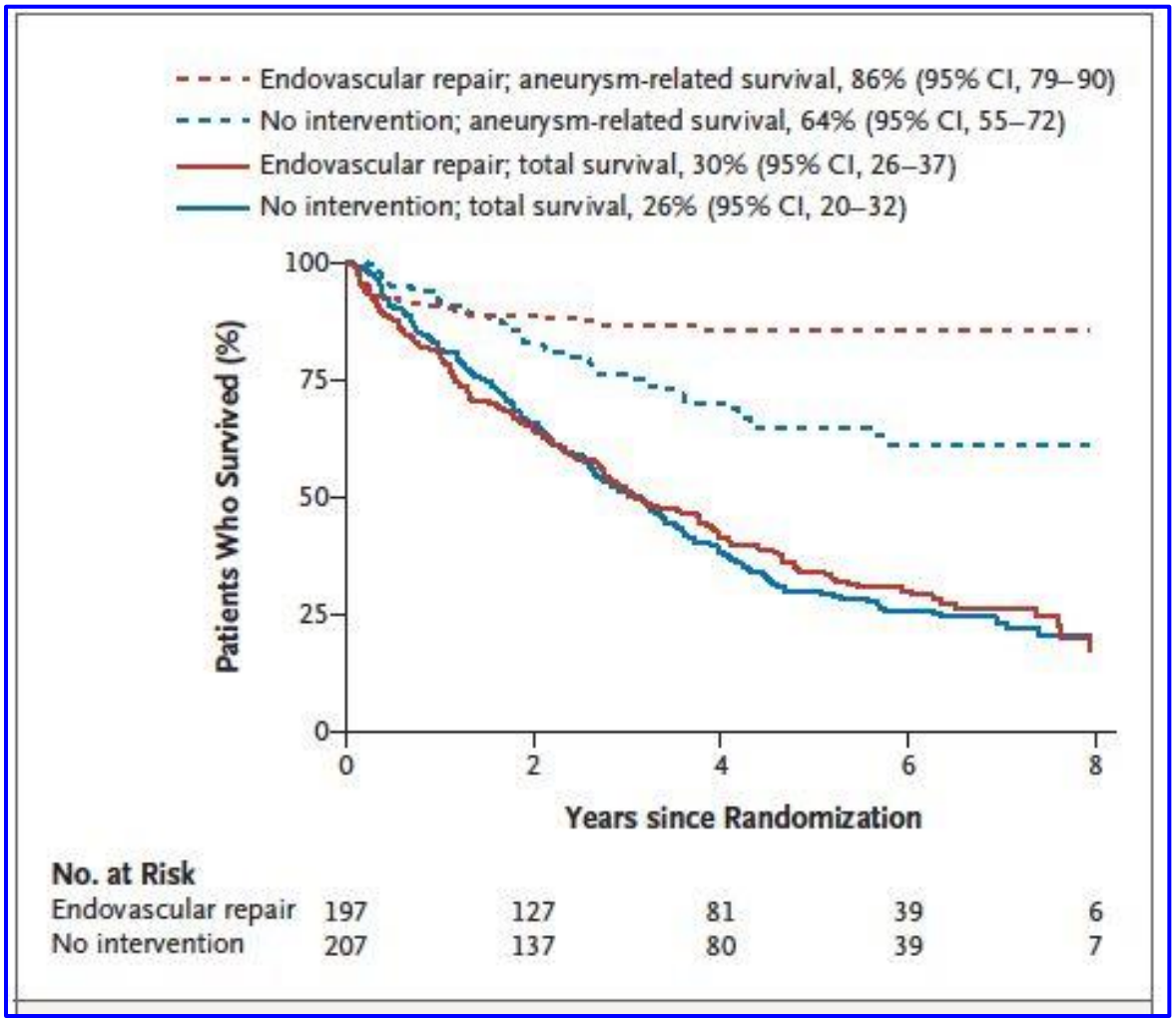
TRAT. ENDOVASCULAR
N=166

END POINTS:
- *Mortalidad de cualquier causa*
- *Mortalidad relacionada con el Aneurisma*
- *Calidad de vida*
- *Costo y Costo Efectividad*

SANATORIO ALLENDE

Endovascular Repair of Aortic Aneurysm in Patients Physically Ineligible For Open Repair-The United Kingdom EVAR Trial Investigators

N Engl J Med 2010;362:1872-80



EVAR 2 TRIAL – CRITICAS:

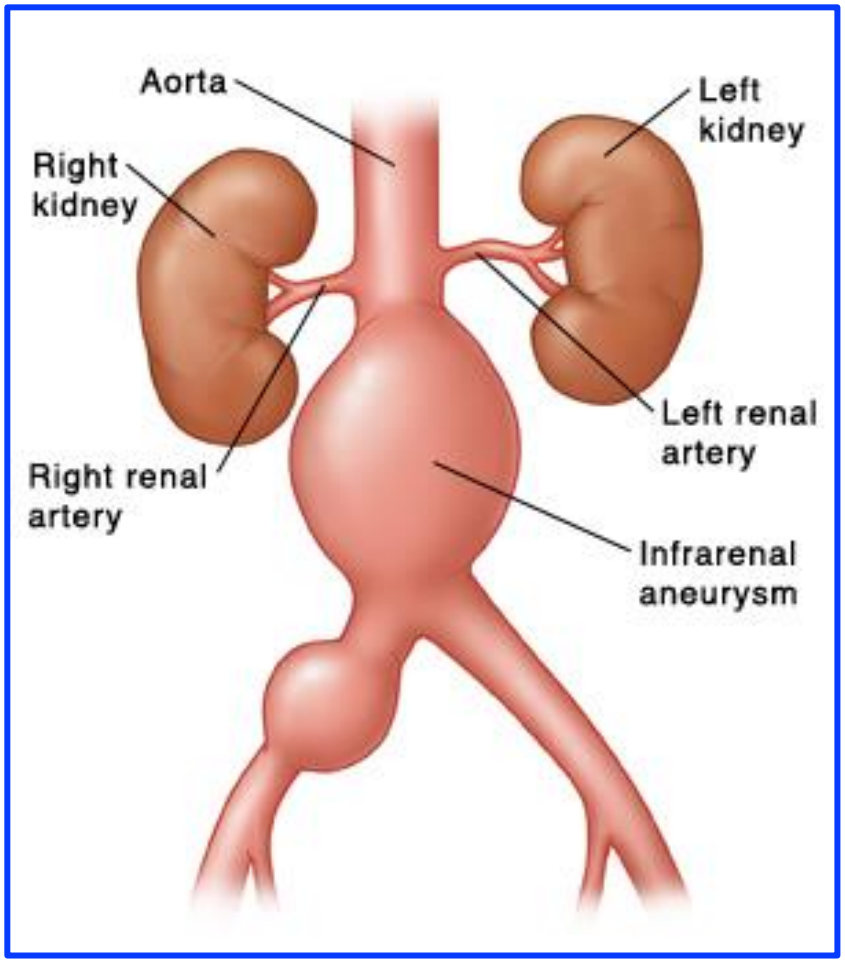
- *Baja Adherencia al protocolo (20% Cross over to EVAR)*
- *Alta mortalidad hospitalaria (9%)*
- *6 rupturas esperando el tratamiento*
- *Alto riesgo no es igual a "moribundos"*

LOS PACIENTES DE ALTO RIESGO DEBEN SER CUIDADOSAMENTE SELECCIONADOS

AAA - Lecciones para una técnica correcta de Exclusión

- *Necesidad de Intervención*
- *Selección del Paciente (TAC)*
- *Trucos y secretos*

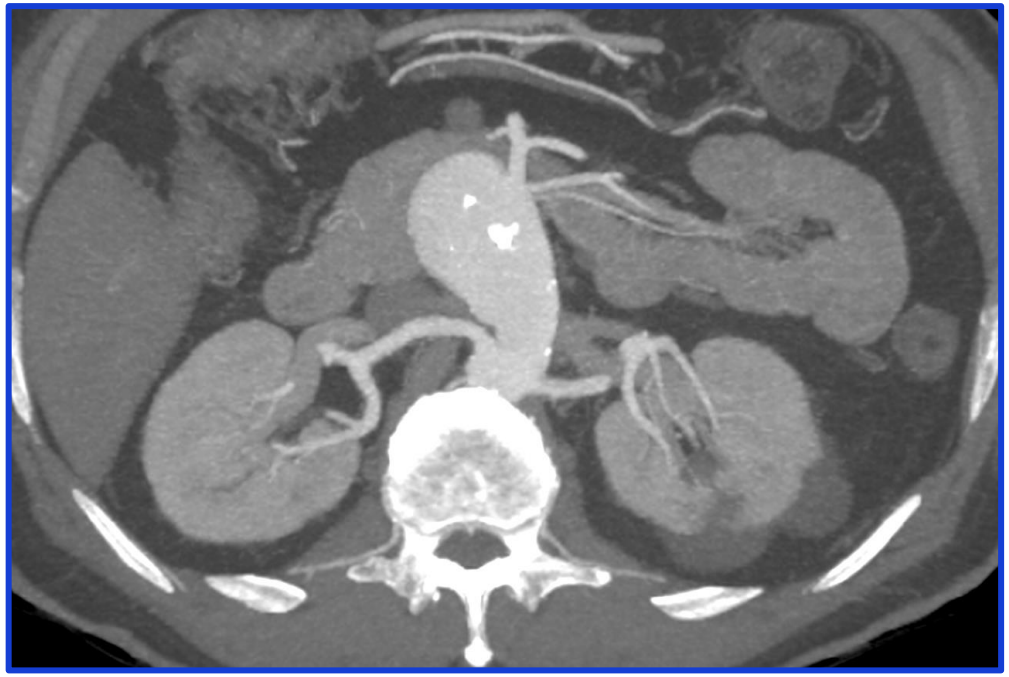
AAA tratamiento Endovascular
Requerimientos Anatómicos

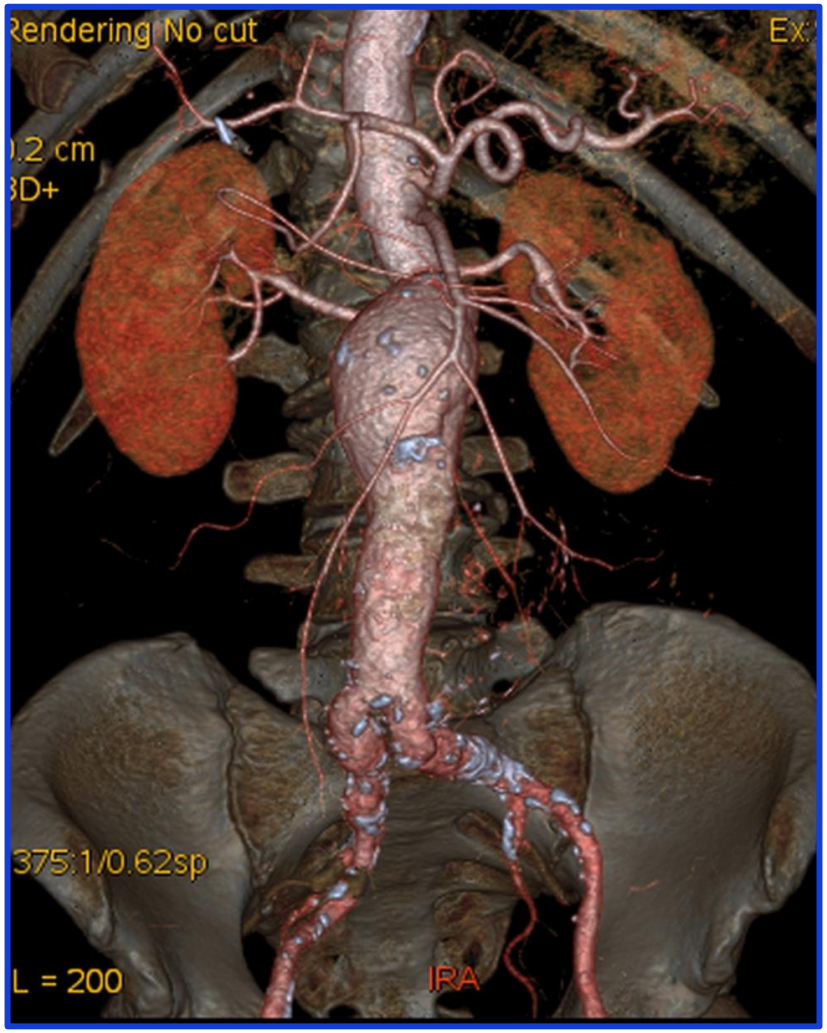


AAA TRAT. ENDOLUMINAL
Anatomia Ideal:

- *Cuello: Longitud ≥10-15 mm*
- *Cuello Diametro ≤ 32 mm*
- *Ausencia de Angulaciones > 60 grados*
- *Saco del aneurisma < 6.5 mm – Sin coagulos friables*
- *Carrefour Aórtico sin calcio ni estrechamientos*
- *Arterias ilíacas de diámetro normal, rectas y sin calcificación*

AAA tratamiento Endovascular - Requerimientos Anatómicos
Valoración del Cuello por Tomografia

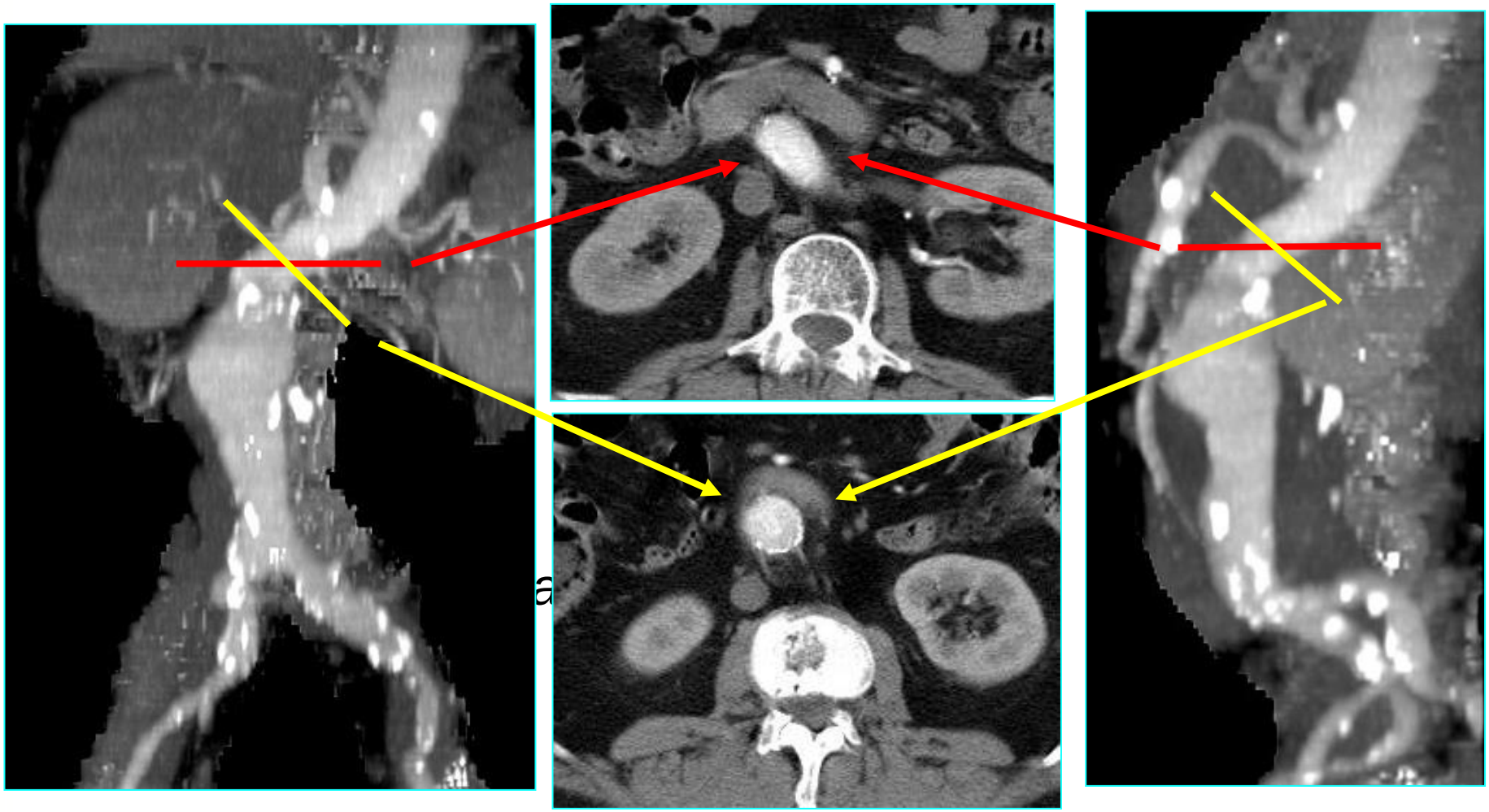




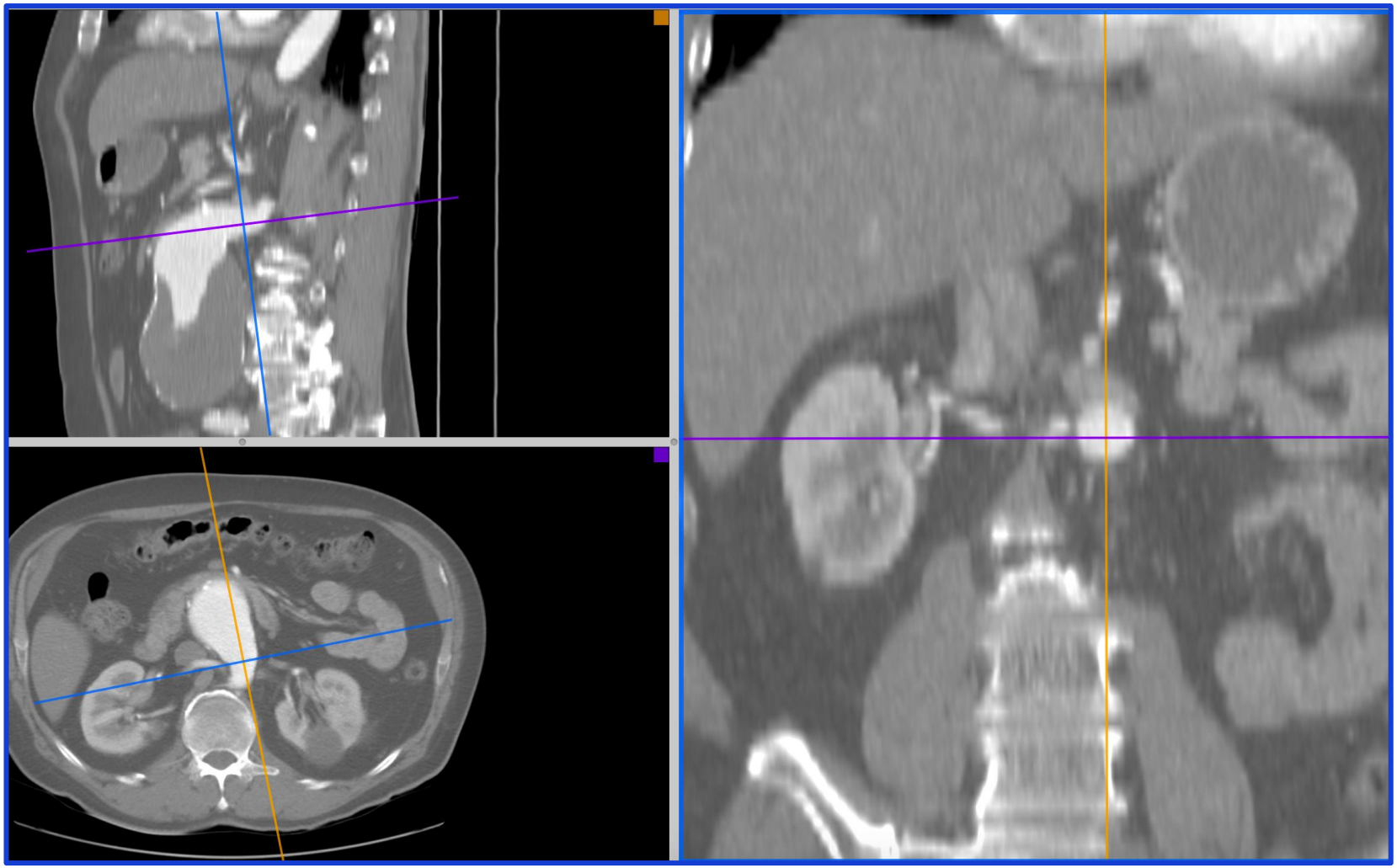
Cuello muy distorsionado ?
Cuello Inexistente ?

AAA tratamiento Endovascular - Requerimientos Anatómicos
Valoración del Cuello por Tomografia-Reconst. 3D

AAA tratamiento Endovascular - Requerimientos Anatómicos
Valoración del Cuello por Tomografia

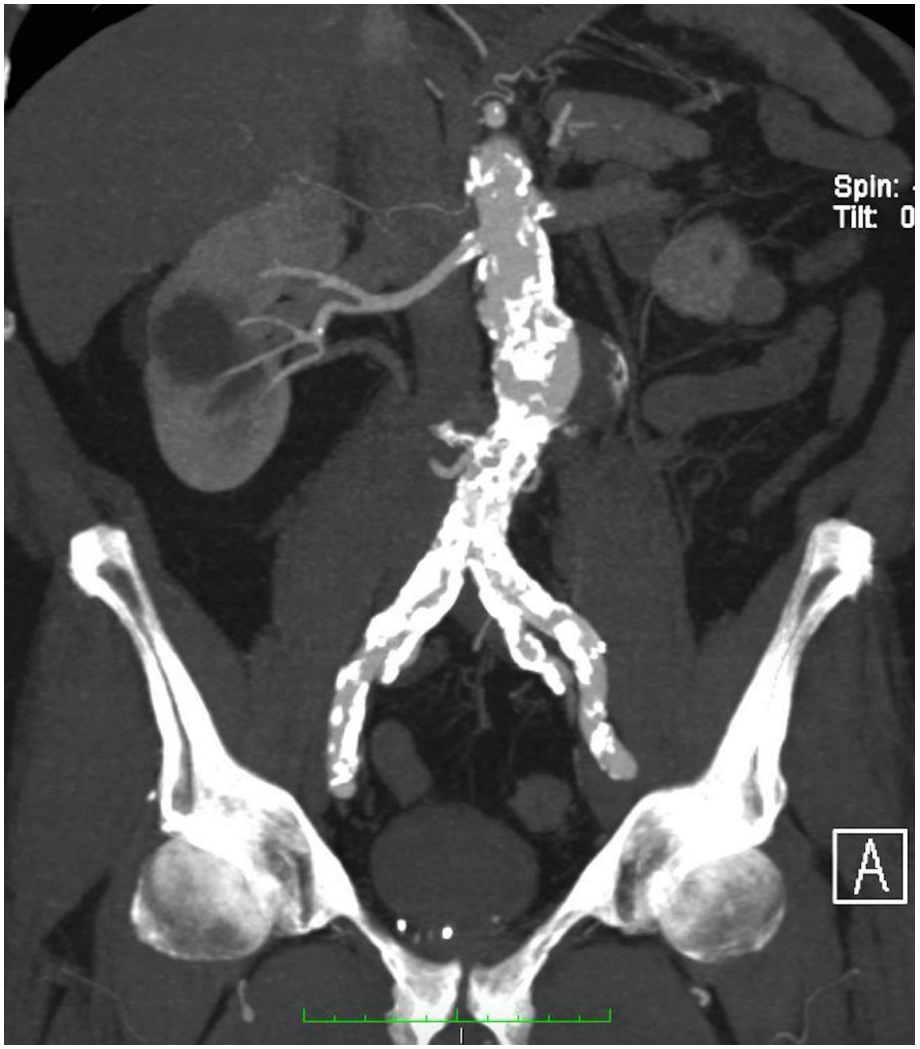


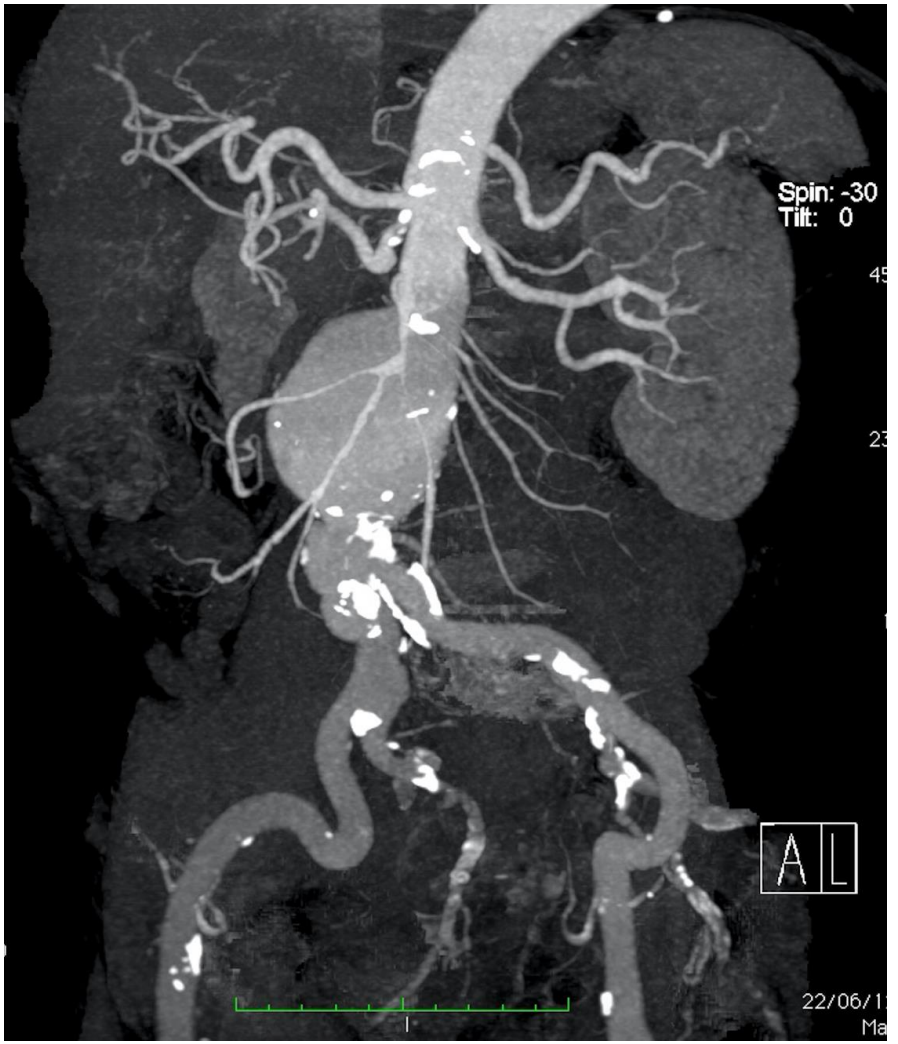
AAA tratamiento Endovascular - Requerimientos Anatómicos
Valoración del Cuello por Tomografia
Reconstrucción MPR



SANATORIO ALLENDE

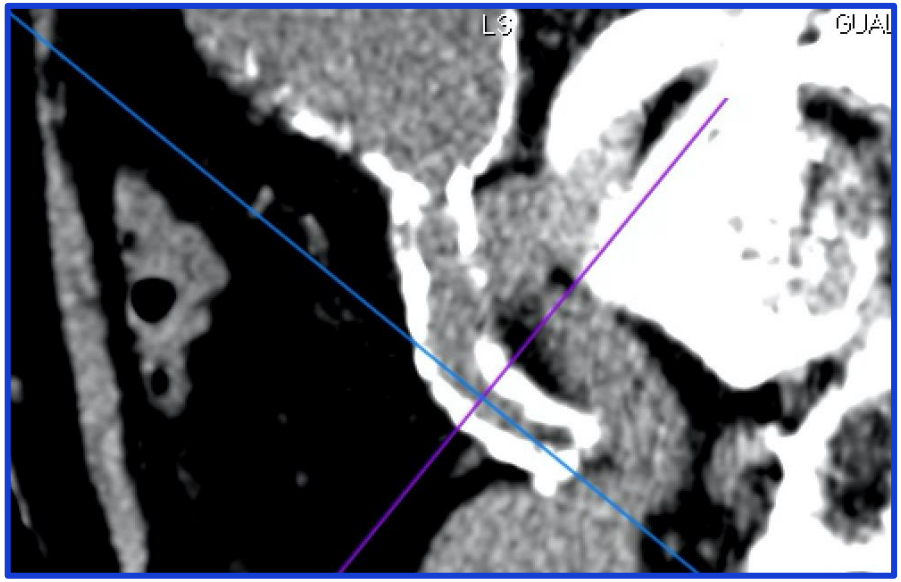
AAA tratamiento Endovascular - Acceso Ilíaco

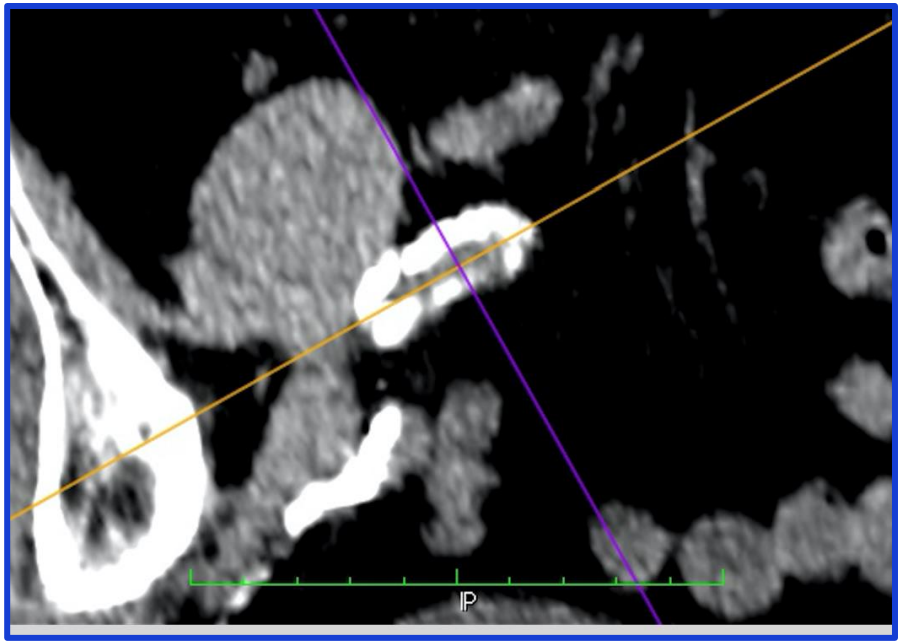


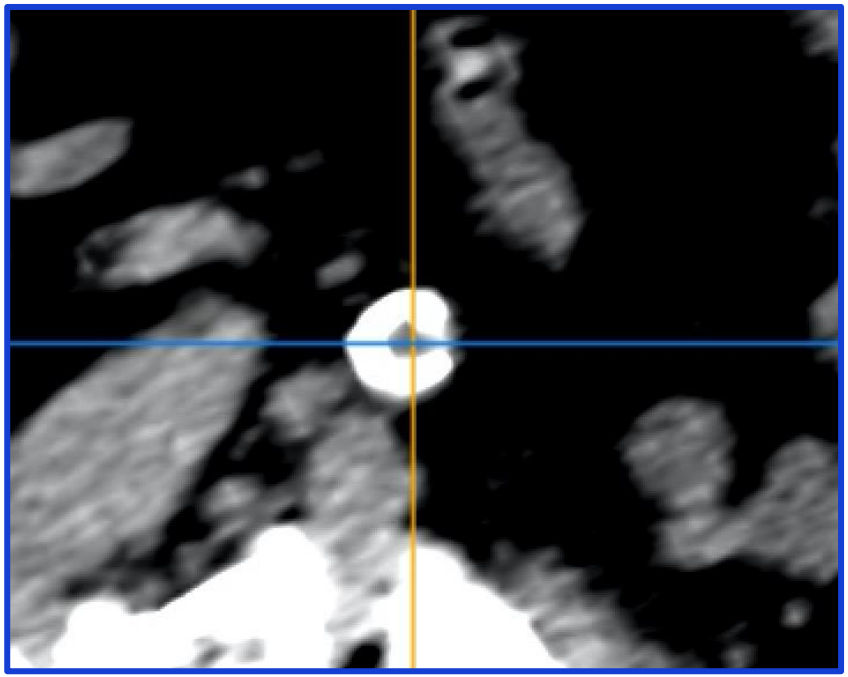


SANATORIO ALLENDE

AAA tratamiento Endovascular - Acceso Ilíaco







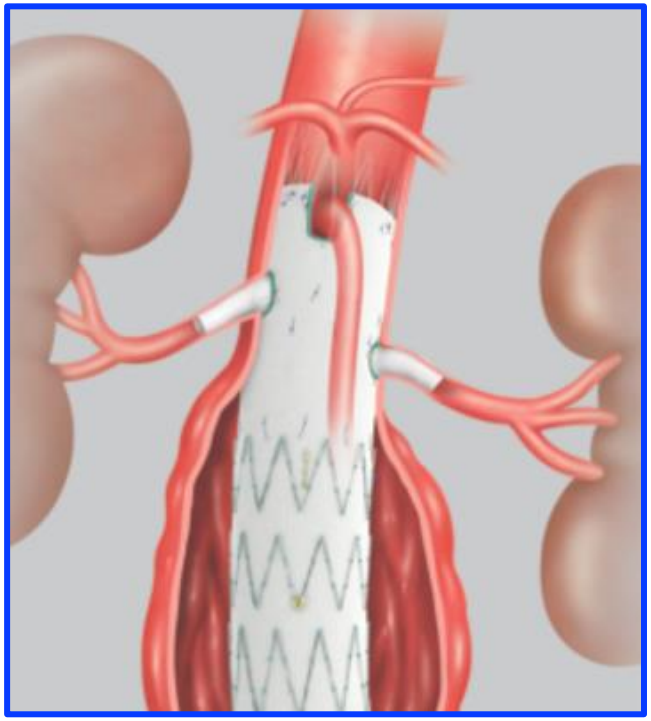
AAA - Lecciones para una técnica correcta de Exclusión

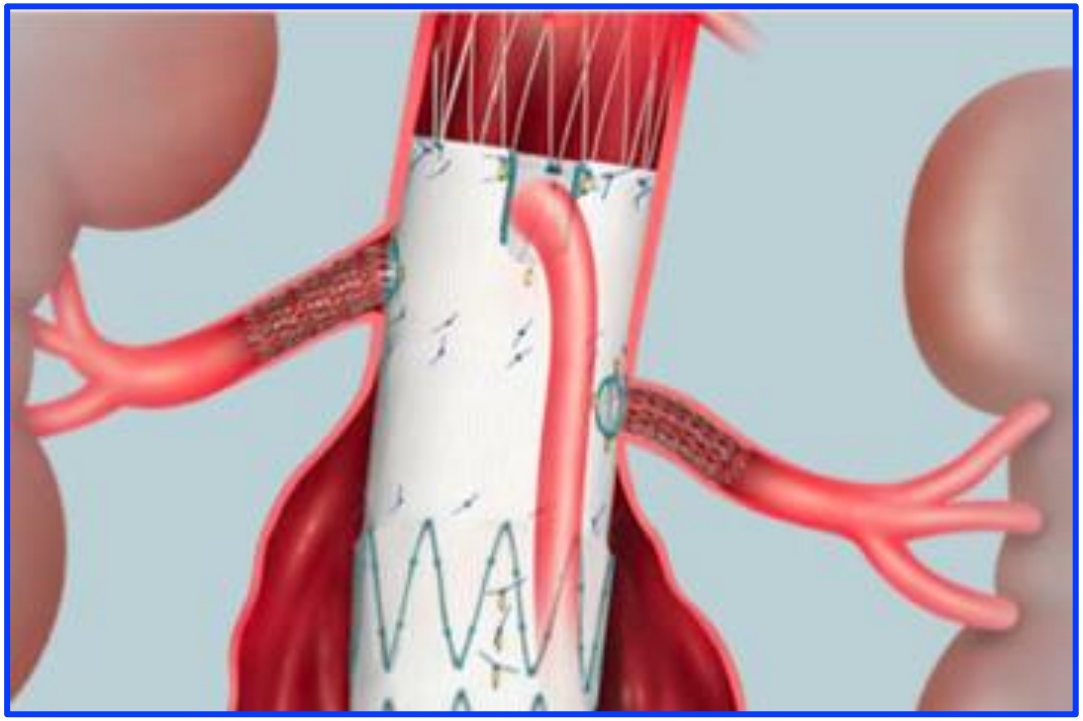
- *Necesidad de Intervención*
- *Selección del Paciente (TAC)*
- *Trucos y secretos*

AAA – Causas de Exclusión para EVAR:

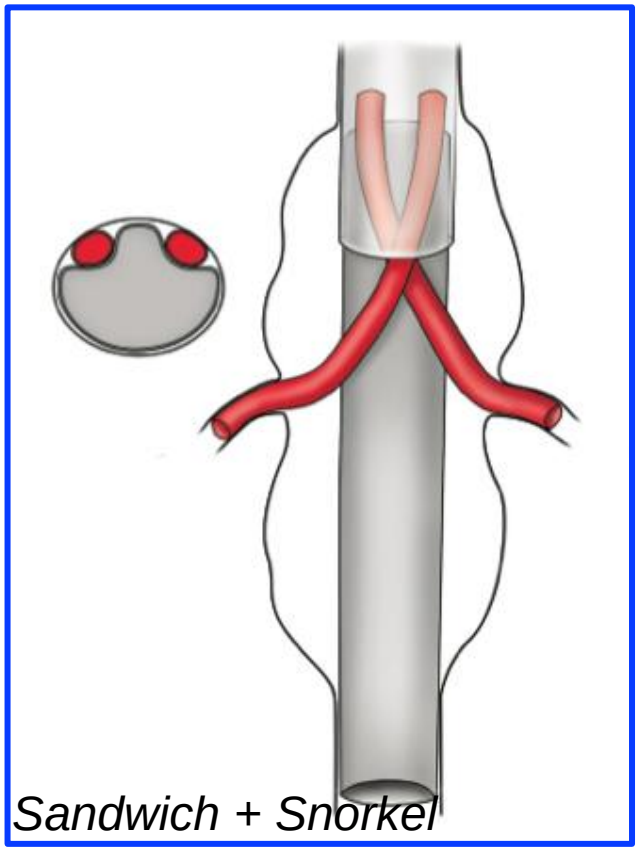
- *Relacionadas con el cuello:*
  - *Cuello Corto (< 10/15 mm de longitud)*
  - *Cuello Cónico*
  - *Cuello angulado > 60º*
- *Riesgo de Leaks Tipo II*
- *Relacionadas con las Arterias Ilíacas*
  - *Obstrucciones*
  - *Tortuosidad y calcificación*
  - *Calibre*

Cuello corto: Protesis Fenestradas o con ramas

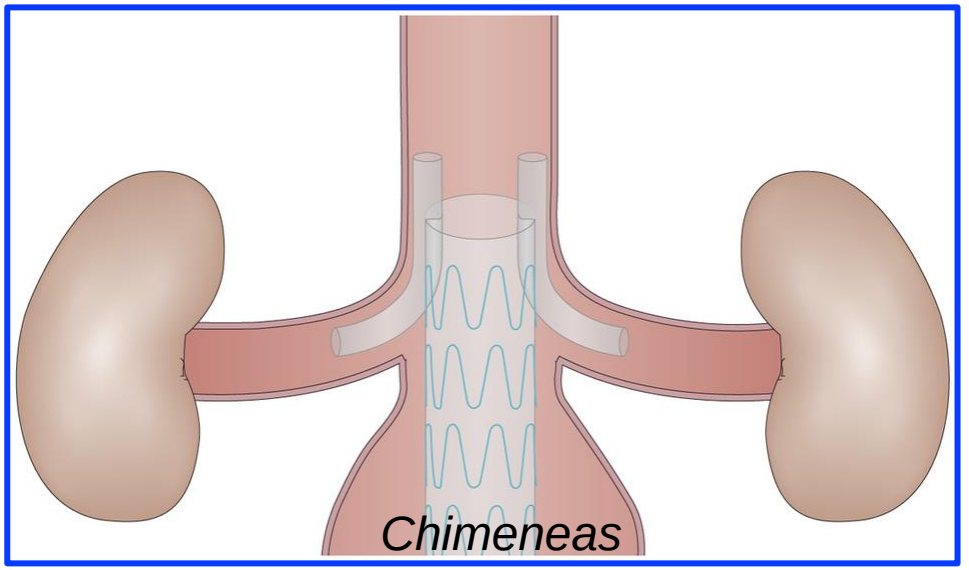




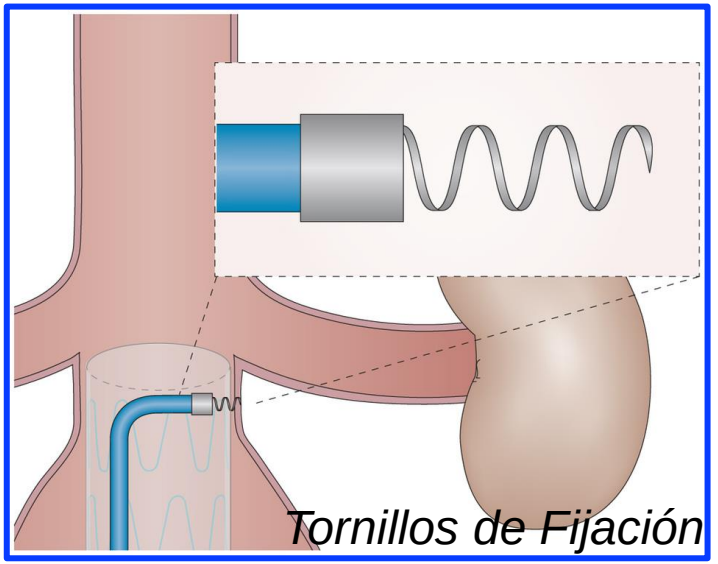
Cuello corto: Chimeneas-Sandwich-Tornillos de Fijación



Sandwich + Snorkel



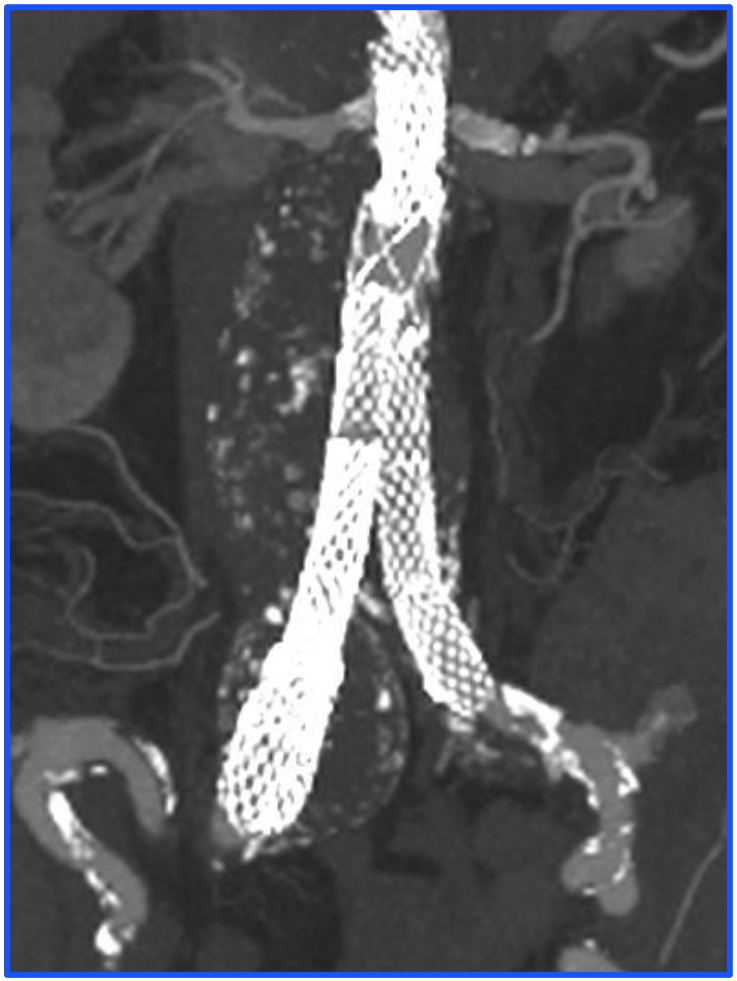
Chimeneas

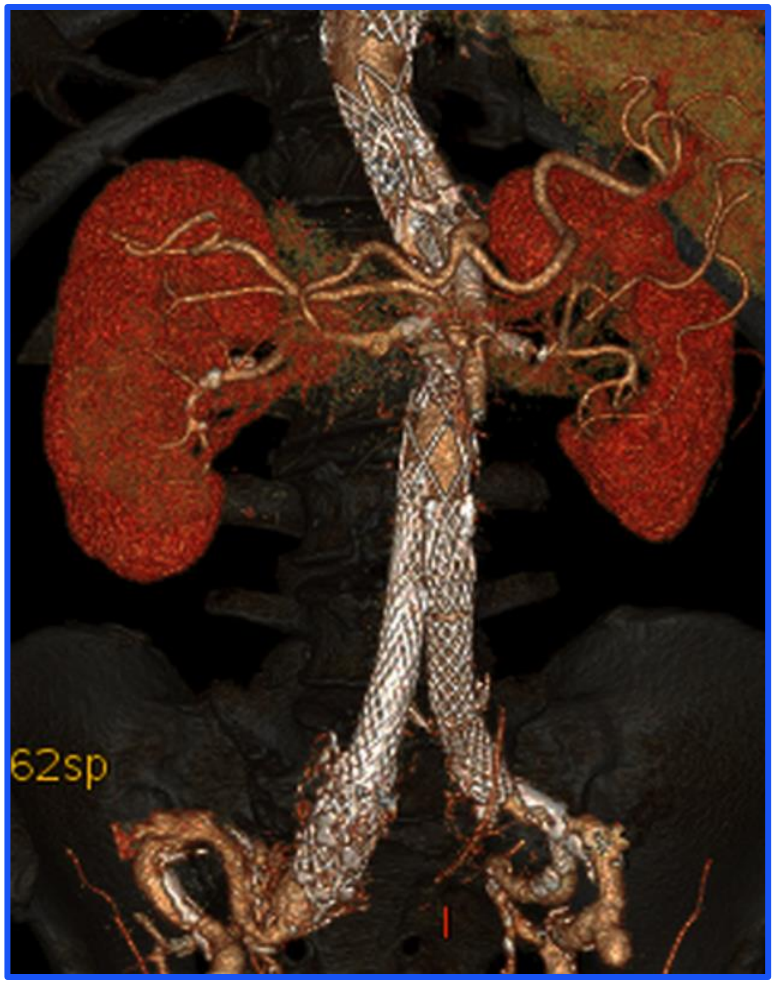


Tornillos de Fijación

Cuello Corto y cónico: Prótesis Balón Expandible

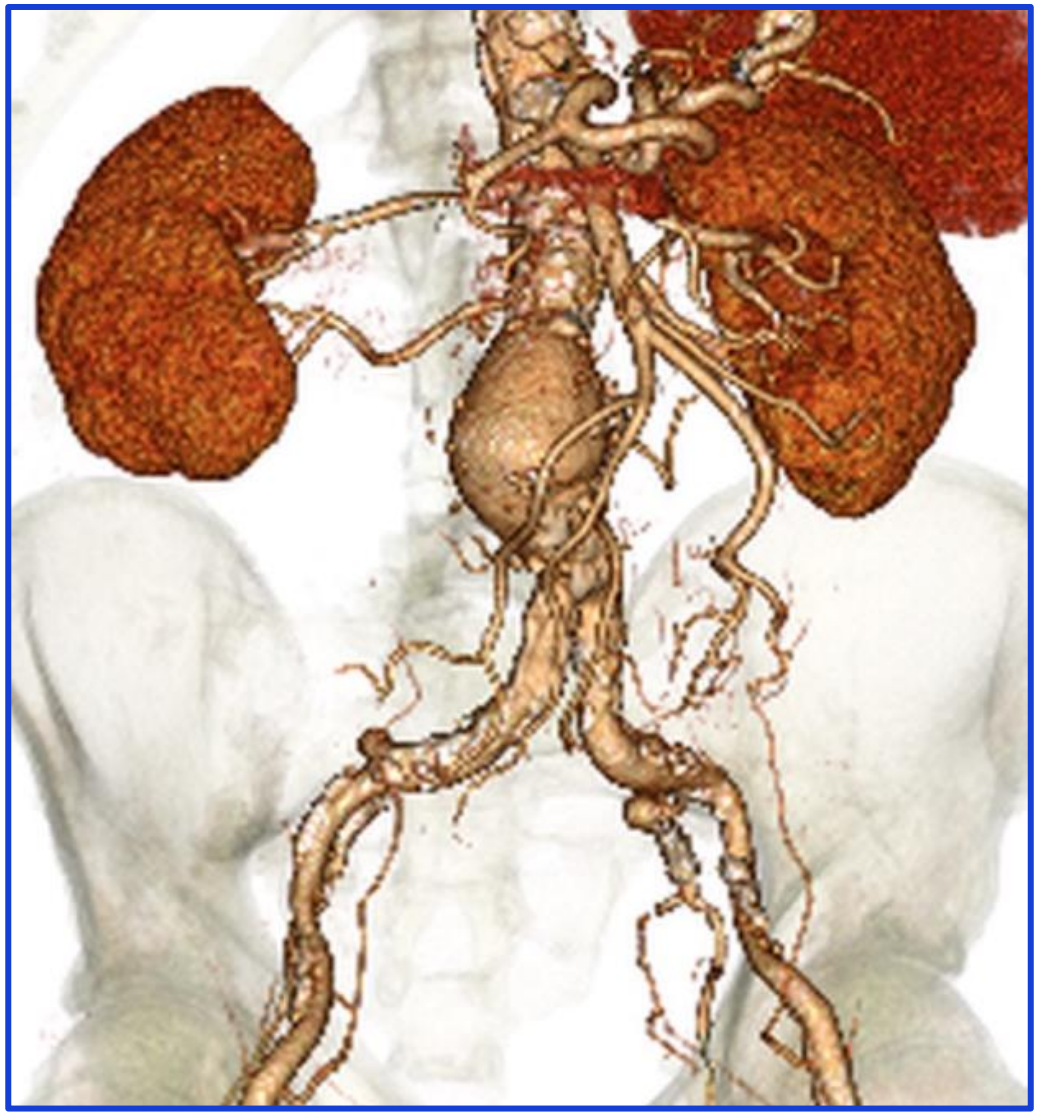
Cuello Corto: Prótesis con Ramas



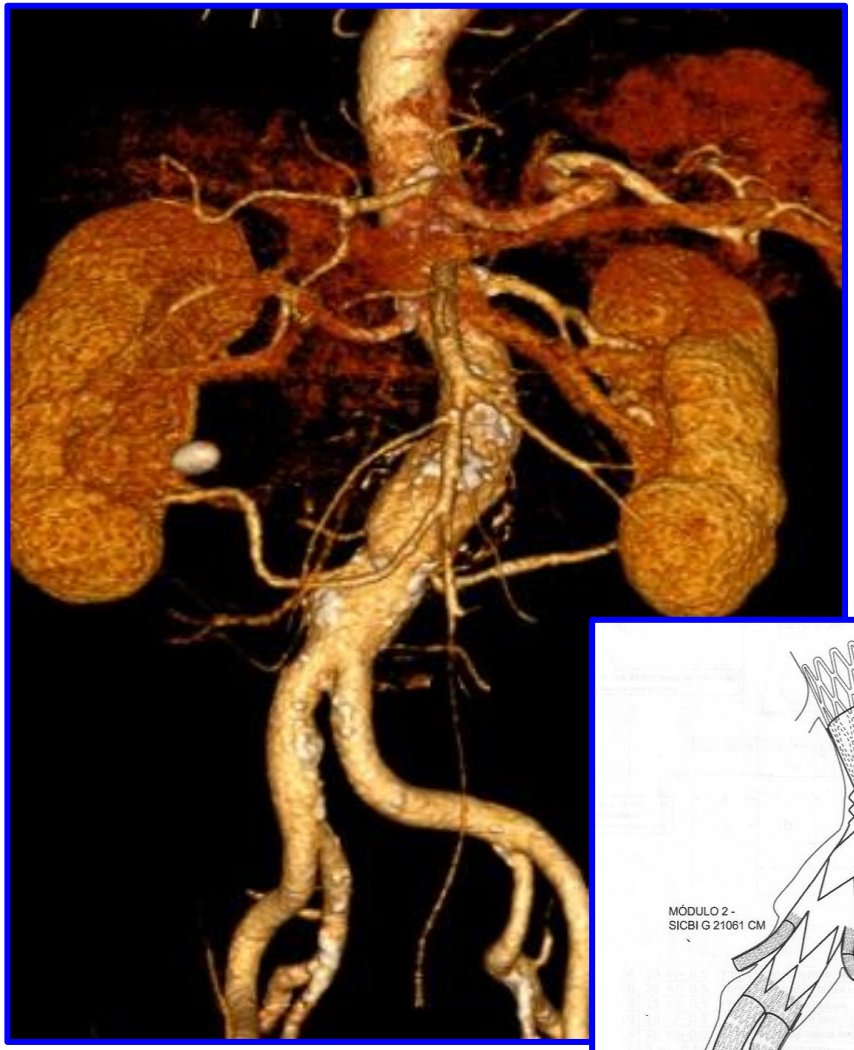


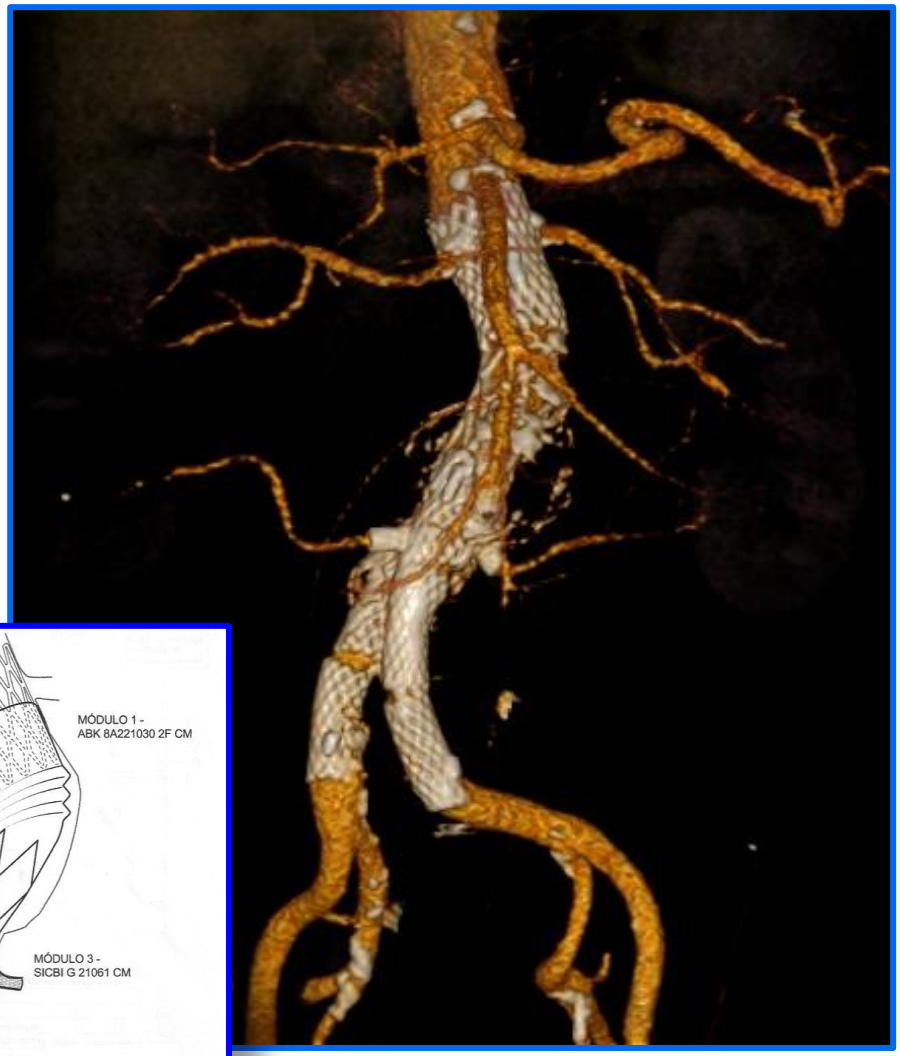
Angulación mayor a 60º : Protesis Aorto Uni-Ilíaca Flexible

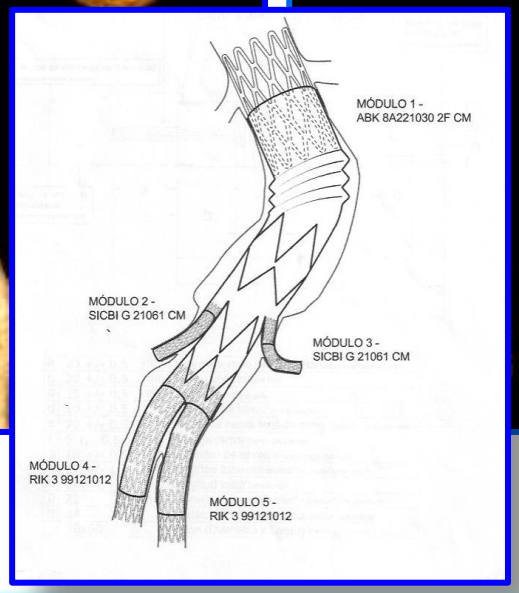
AAA tratamiento Endovascular
Prevención de Leaks Tipo II



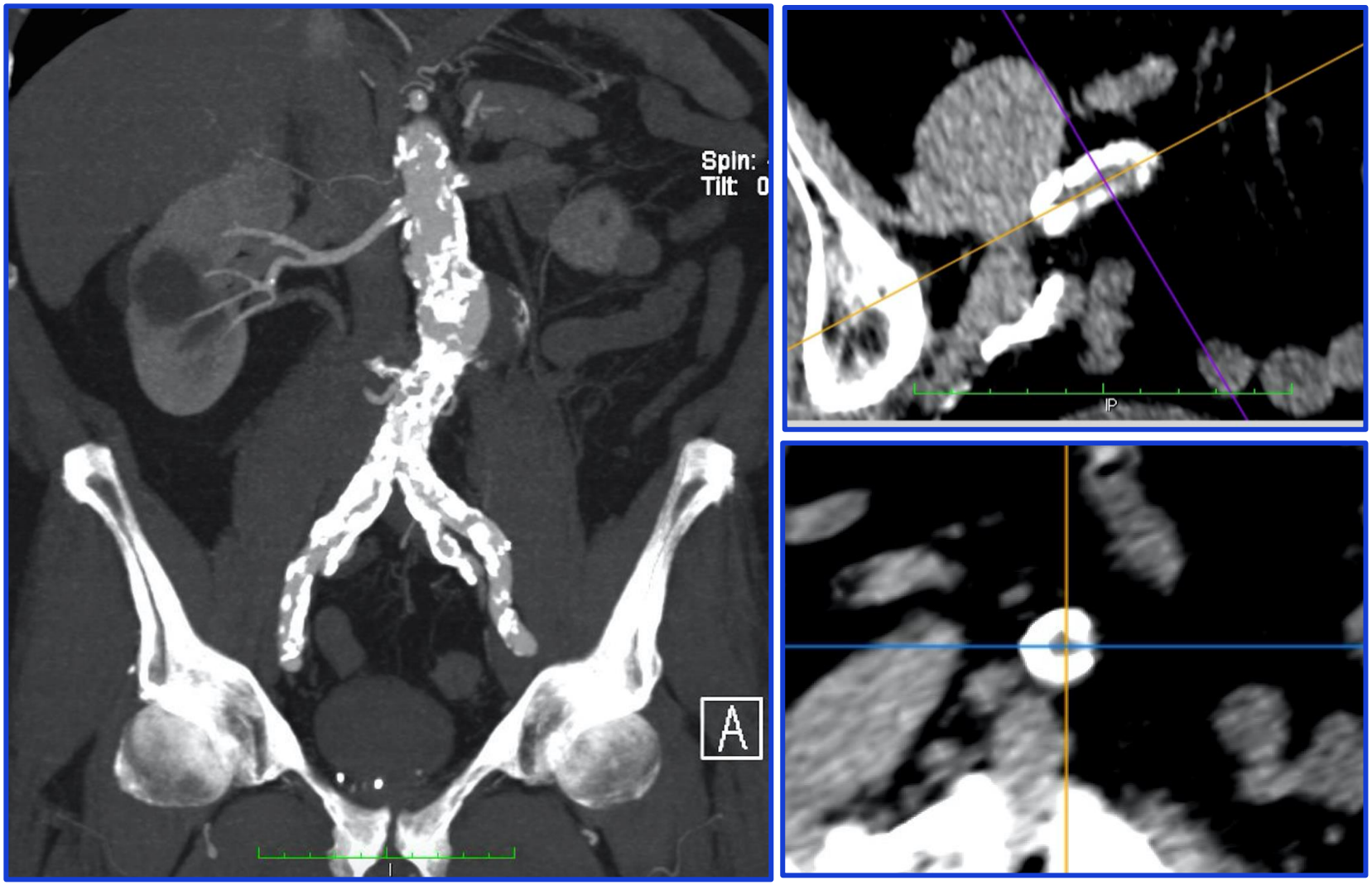
AAA tratamiento Endovascular - Prevención de Leaks Tipo II
Preservación de arterias polares



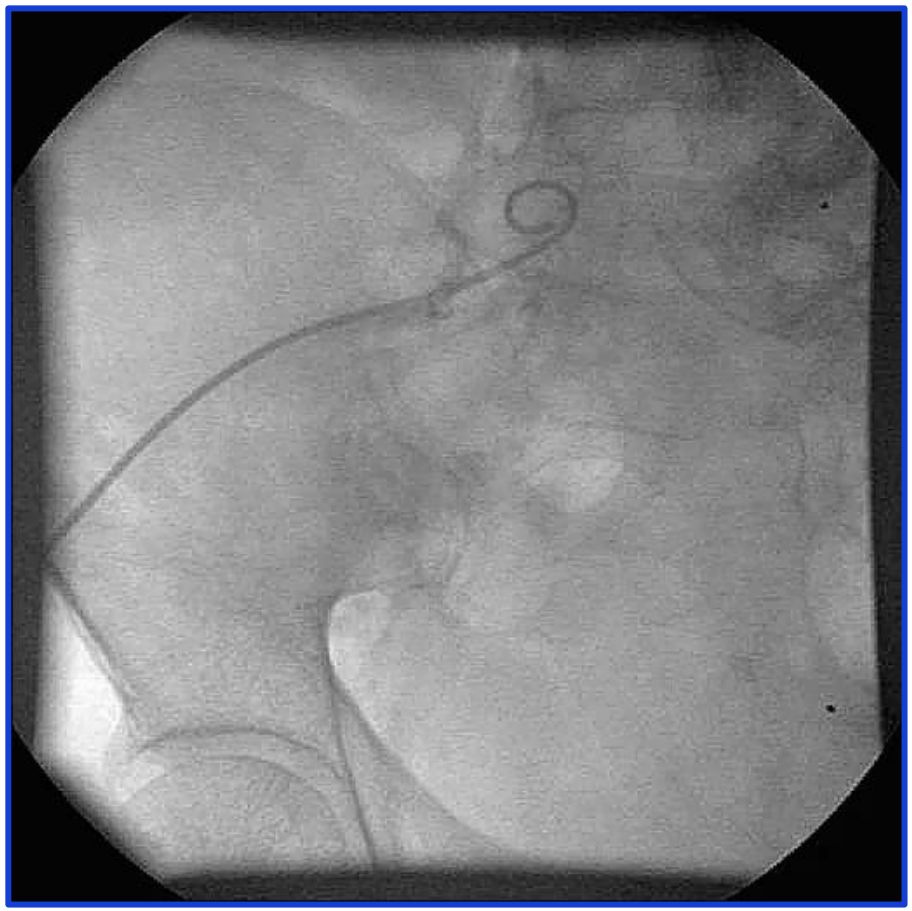


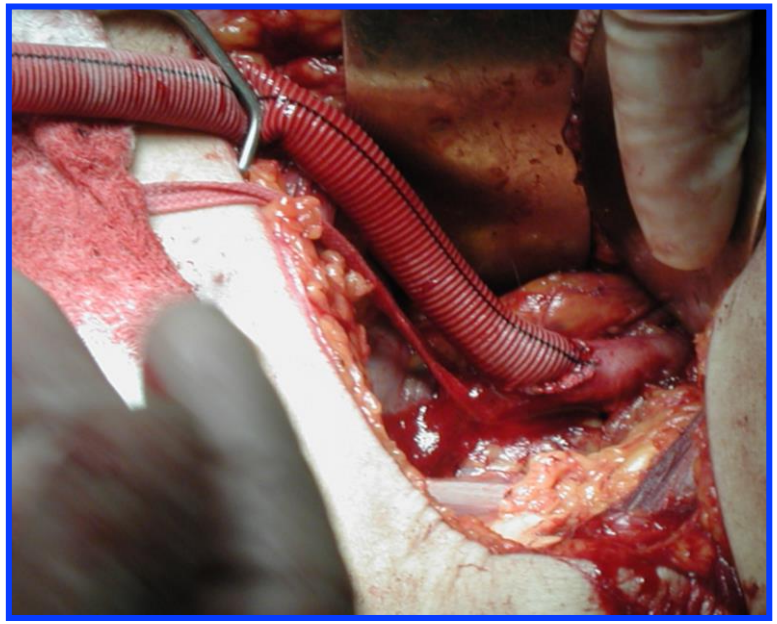


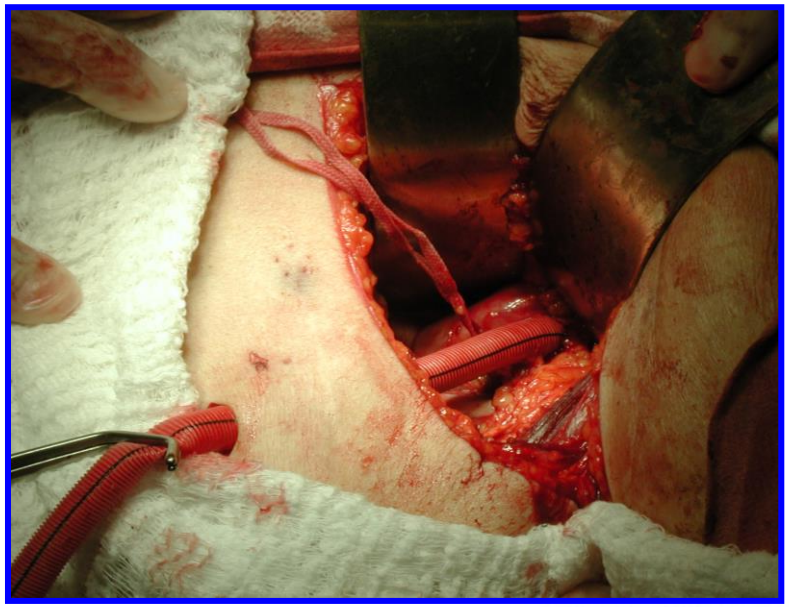
AAA tratamiento Endovascular - Acceso Ilíaco



AAA tratamiento Endovascular - Acceso Ilíaco







Mensaje Final

Los resultados del tratamiento endovascular de los AAA se basa en:

- *Indicación correcta*
- *Selección del paciente*
- *Conocimiento de trucos y secretos*