SURGICAL & RADIOLOGICAL ENDOVASCULAR SYMPOSIUM
SRES
11-12 SEPT. 2025
• Radiologie Interventionnelle
• Chirurgie Vasculaire
• Chirurgie cardio-vasculaire et thoracique
• Médecine vasculaire
PALAIS DU PHARO
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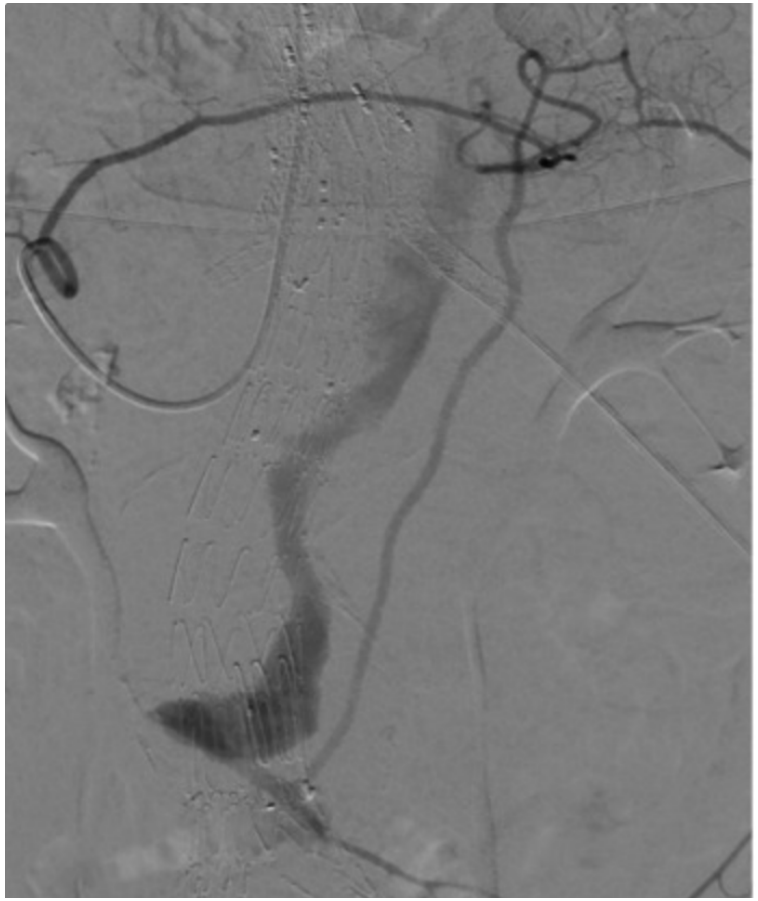
Embolisation préventives mésentérique inferieure et lombaire jusqu'où faut-il aller ?

Salma EL BATTI, Hôpital Européen Georges Pompidou, APHPcentre Paris

Danger of type II endoleaks after EVAR ?

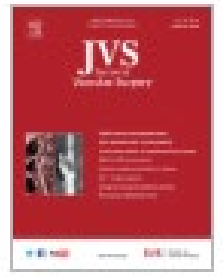
50% of all endoleaks
90% will resolve spontaneously
Independant factor of sac growth

<1 % risk of rupture
Rupture can occur without evidence of sac growth



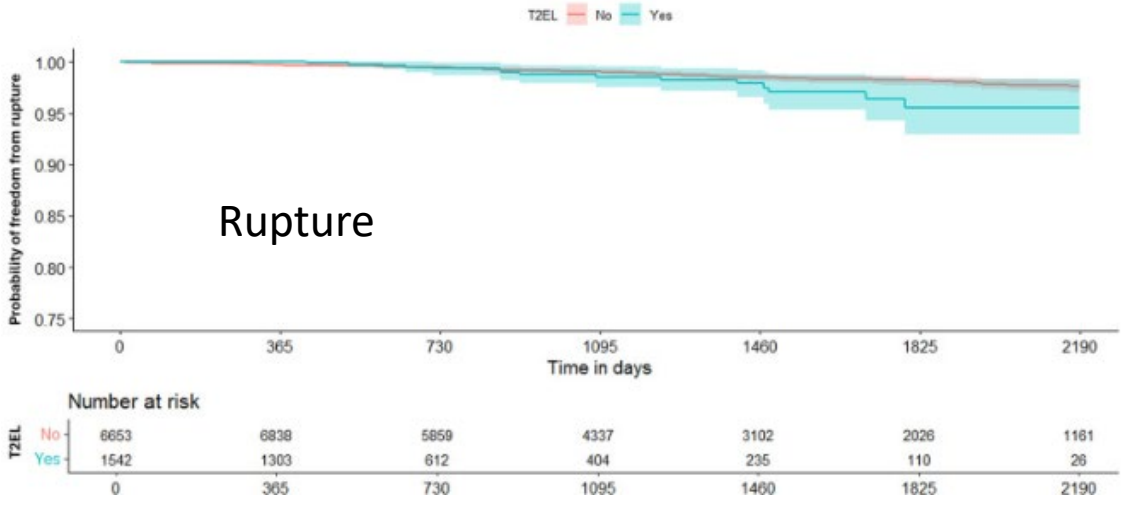
*Endovascular aortic repair of **endoleaks** : Diagnosis, treatment, and outcomes. Hauck SR et al. Radiologie (Heidelb). 2022*

Outcomes associated with type II endoleaks after infrarenal endovascular aneurysm repair in the Vascular Quality Initiative linked to Medicare claims

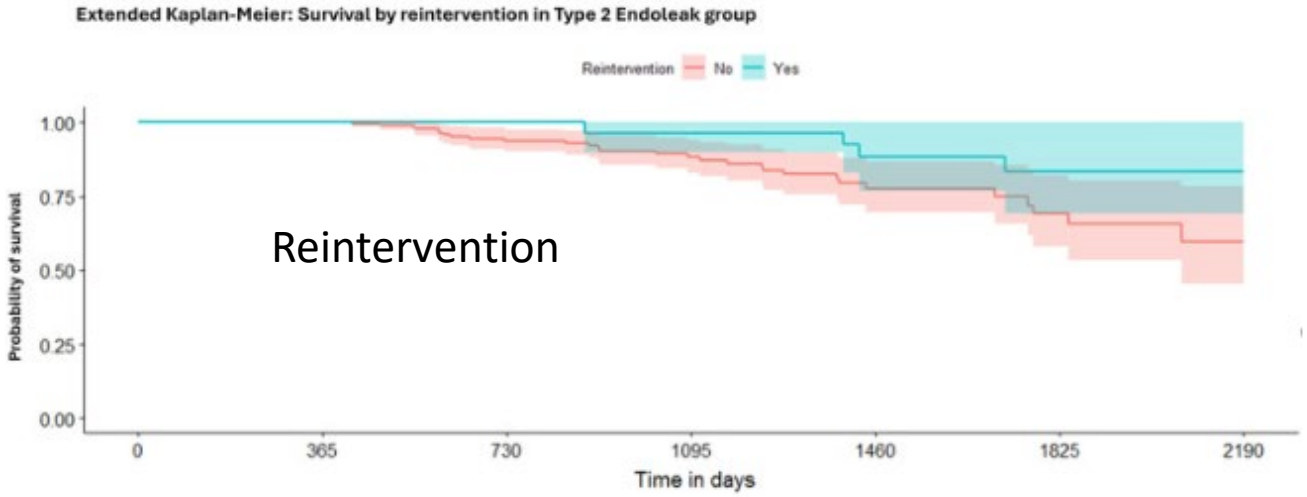


Presented at the Forty-eighth Annual Meeting of the Midwestern Vascular Surgical Society, Chicago, Illinois, September 13, 2024.

Venkata Vineeth Vaddavalli MBBS [a], Xinyan Zheng MS [b], Jialin Mao MD, PhD [b], Bernardo C. Mendes MD [a], Salvatore T. Scali MD [c], Randall R. DeMartino MD, MS [a]



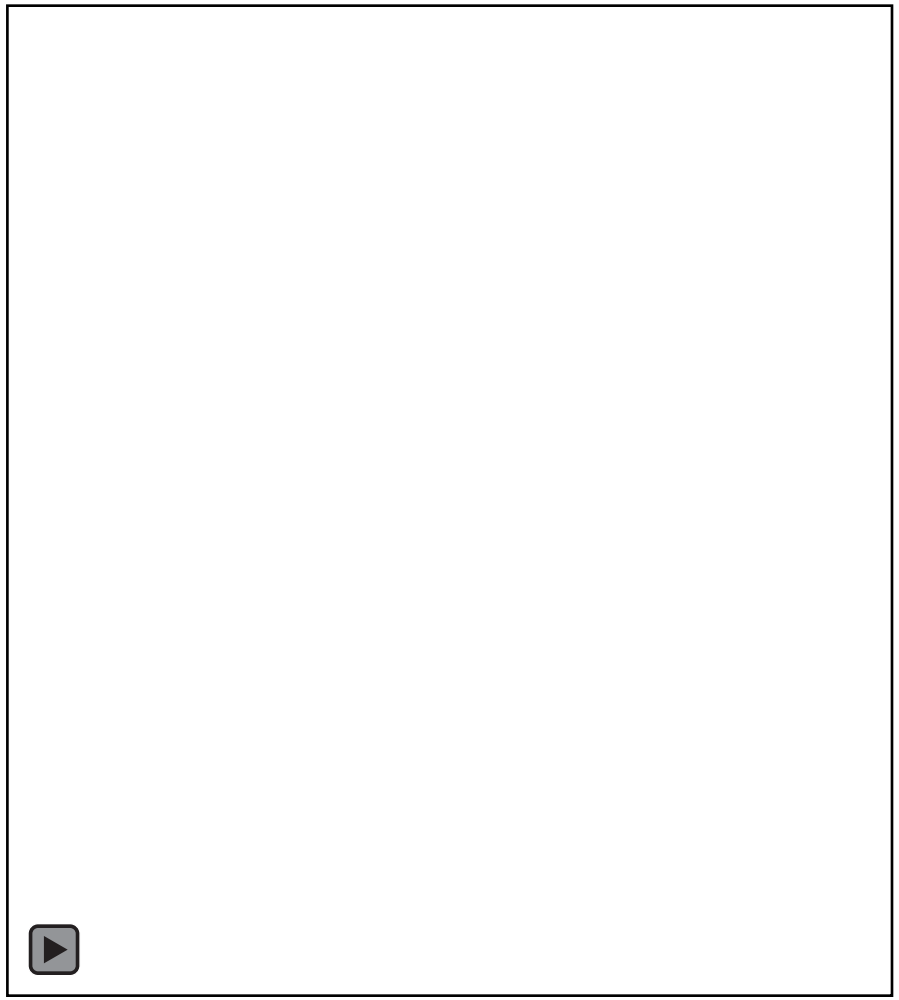
Rupture



Reintervention

8195 pts / 5 ans

Conversion pour Endofuite de Type 2?



Embolisation préventives ?

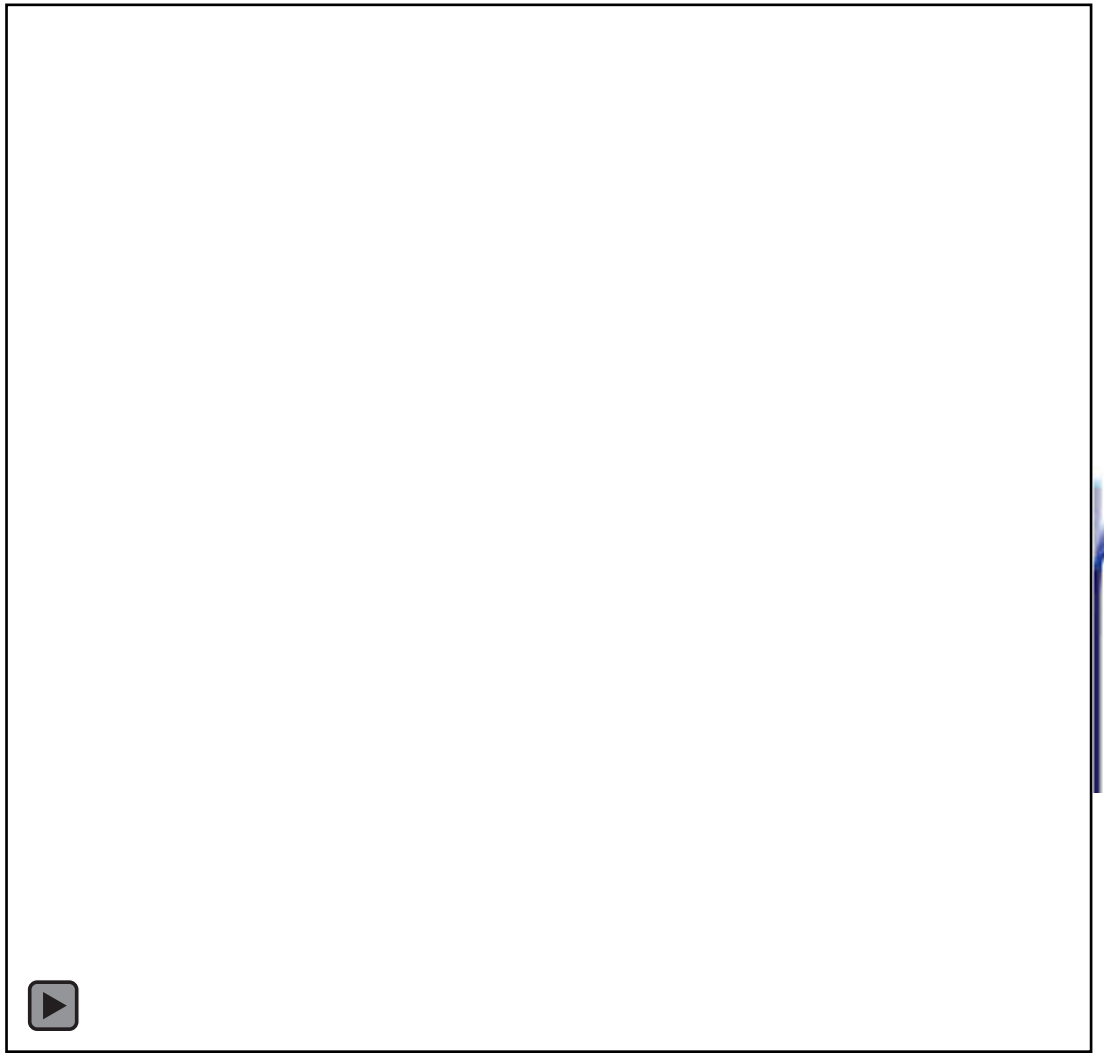
Techniques d'embolisation

+/- Fibrine, Glue ..

70 à 100% succès
Entre 15-30 min
Coût / Temps
Incidences latérales

Table. Radiation data among four groups of patients

	G0 (no PE or SI) (n = 36)	G1 (PE only) (n = 44)	*P* Value
Total fluoroscopy time, minutes	33.7 ± 22.1	61.4 ± 23.0	.0001
Total DAP, μGym^2	16408.4 ± 13651.6	42093.8 ± 28063.6	.0001
Total rad dose, mGy	943.4 ± 1310.0	2614.8 ± 2047.1	.0001



Tran et al. JVS 2019

Innovative procedure for IMA embolization using the AVP 4 during EVAR. Morikage et al. Ann Vasc Surg 2017

Emboliser toutes les AMI?

Toutes

Hôpital A

T2E
Diam>5mm
Reinterventions
Rupture

=

Aucune

Hôpital B

732 pts

Routine Inferior Mesenteric Artery Embolisation is Unnecessary Before Endovascular Aneurysm Repair

Suvi Väärämäki [a,*], Herman Viitala [b], Sani Laukontaus [b], Ilkka Uurto [a], Patrick Björkman [b], Riikka Tulamo [b], Pekka Aho [b], Matti Laine [b], Velipekka Suominen [a,†], Maarit Venermo [b,†]

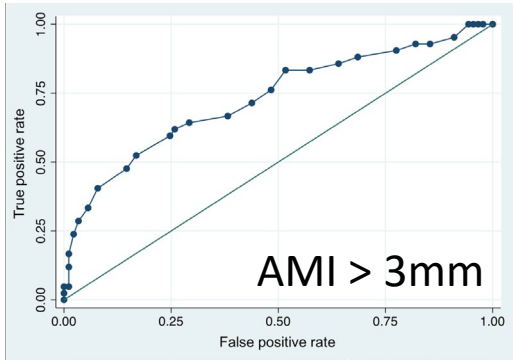
[a] Centre for Vascular Surgery and Interventional Radiology, Tampere University Hospital, and Tampere University, Faculty of Medicine and Life Sciences, Tampere, Finland
[b] Department of Vascular Surgery, University of Helsinki and Helsinki University Hospital, Helsinki, Finland

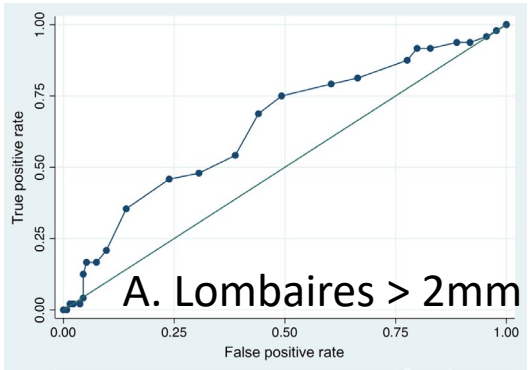
Identification of Anatomical Risk Factors for Type II Endoleak to Guide Selective Inferior Mesenteric Artery Embolization

Samura et al. Ann Vasc Surg 2018

192 pts / 42 Type II persistantes

Quelles artères impliquées dans les T2E?

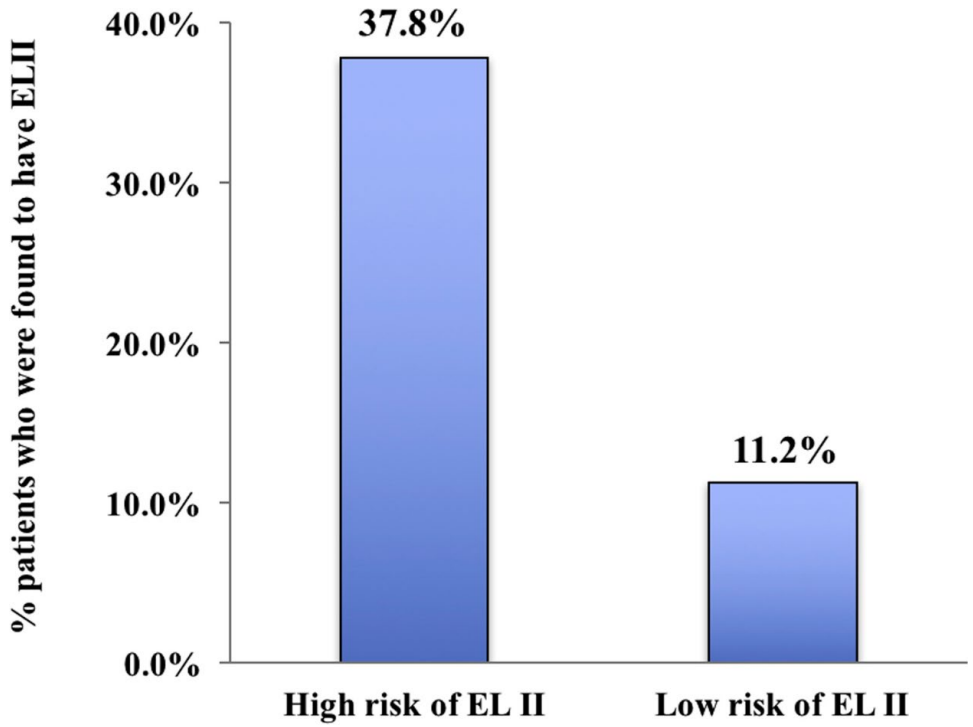




AMI > 3mm

A.Lombaires> 2mm

An. Aorto Iliaque



Endovascular Aneurysm Repair With Inferior Mesenteric Artery Embolization for Preventing Type II Endoleak
A Prospective Randomized Controlled Trial

Samura et al. Ann Surg 2020

ANNALS OF SURGERY

Monocentric RCT 106 pts / 2 ans

Primary Outcome: T2E

T2E (21,7% vs 47,1%)
Augmentation diam > 2

Temps d'intervention
Temps de scopie
Contrast
Coût

Réinterventions :
Pas de différences

AMI > 3mm

A.Lombaires> 2mm

An. Aorto Iliaque

Variables	Embolization (n = 46)	Nonembolization (n = 51)	P
Follow-up periods, mo	23.9 ± 10.9	23.2 ± 11.0	0.76
Presence of T2EL	10 (21.7%)	24 (47.1%)	0.009
Source of T2EL (% in T2EL presence)			
IMA	0	3 (12.5%)	
LAs	11 (100%)	12 (50.0%)	
IMA + LAs	0	6 (25.0%)	
Others (MSA, LAs + MSA or ARA)	0	3 (12.5%)	
Aneurysmal diameter change, mm	−6.3 ± 7.5	−2.9 ± 6.7	0.021
Aneurysmal growth ≥2 mm related to T2EL	1 (2.2%)	9 (17.6%)	0.017
Source of T2EL (% in related to T2EL)			
IMA, IMA + LAs	0	8 (88.9%)	
Others	1 (100%)	1 (22.2%)	
Secondary intervention	1 (2.2%)	1 (2.0%)	1.00
Related to T2EL	0	0	

Five-year follow-up of randomized clinical trial for pre-emptive inferior mesenteric artery embolization during endovascular aneurysm repair

Takeuchi et al. JVS 2024

Monocentric RCT, 106 pt

Primary Outcome : T2E

Inclusion for high risk Type II endoleak

Patent IMA

+

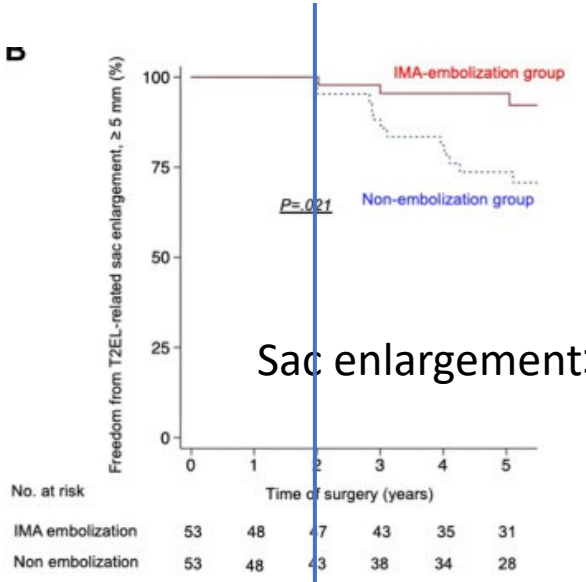
IMA >3mm

Lumbar artery >2mm

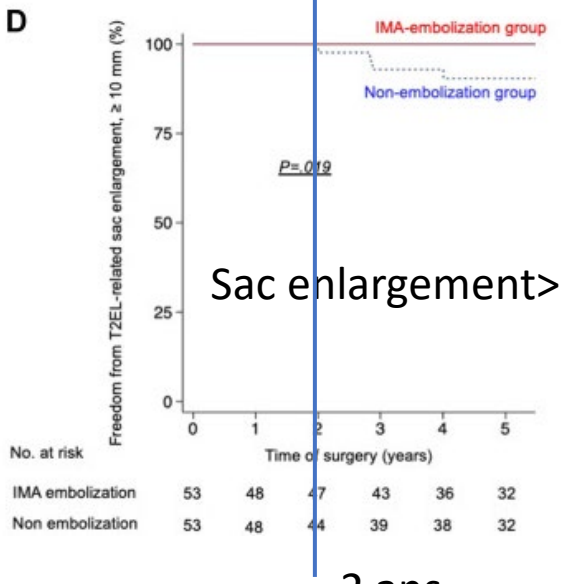
Aortoiliac-Type

↘ T2E

(28% vs 54%, p=.006)



Sac enlargement> 5



Sac enlargement> 10

2 ans

Réinterventions : Pas de différences

Multicentre Randomised Controlled Trial to Evaluate the Efficacy of Pre-emptive Inferior Mesenteric Artery Embolisation during Endovascular Aortic Aneurysm Repair on Aneurysm Sac Change.

Ichihashi et al. EJVES 2025

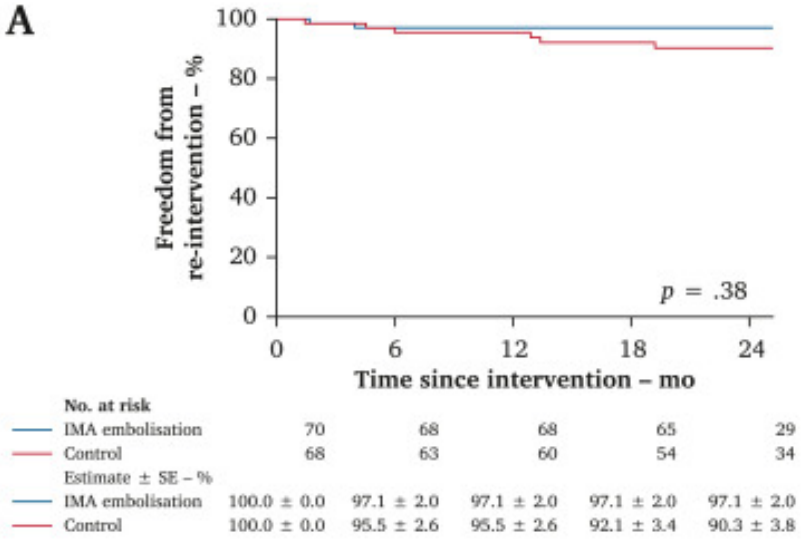
Multicentric RCT 140 pts/ 2 ans

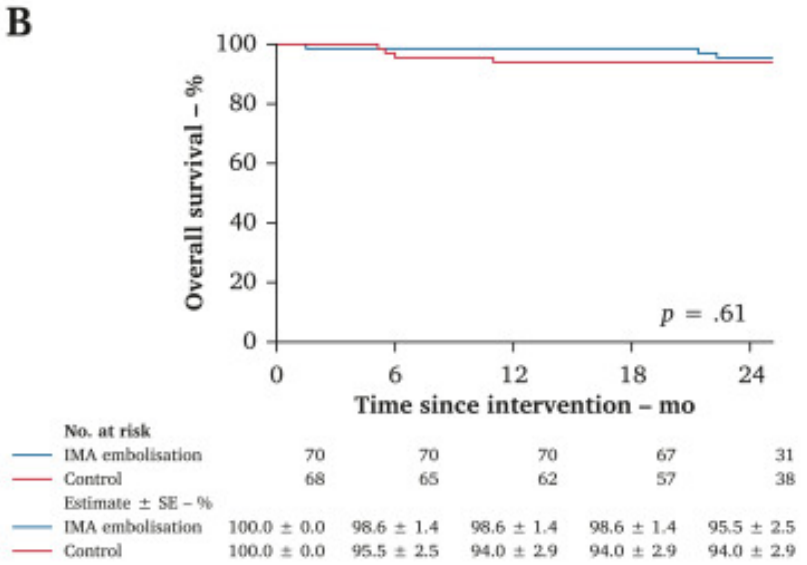
Primary outcome : Volume 12 months

AMI > 2.5 mm

Crit Anat stricts EVAR

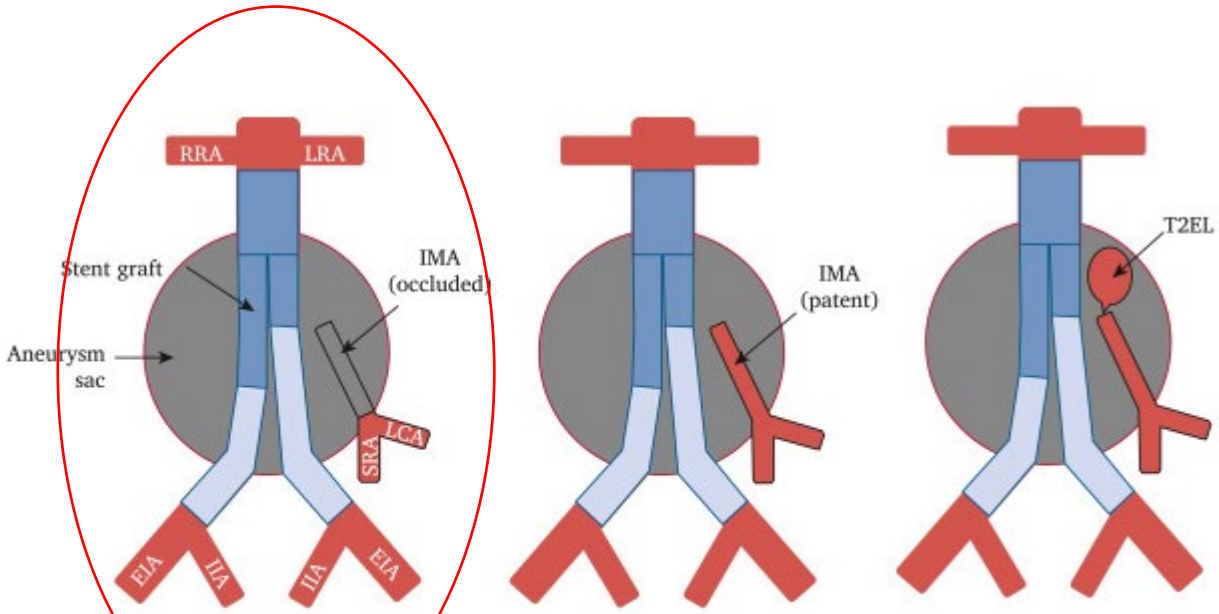
Pas de différences :
Volume
Diamètre
T2E





Réinterventions :
Pas de différences

Selection des patients ?



	Group 1	Group 2	Group 3
Spontaneous IMA occlusion	+	–	–
T2EL from IMA	–	–	+
n (%)	101 (43.9)	75 (32.6)	54 (23.5)

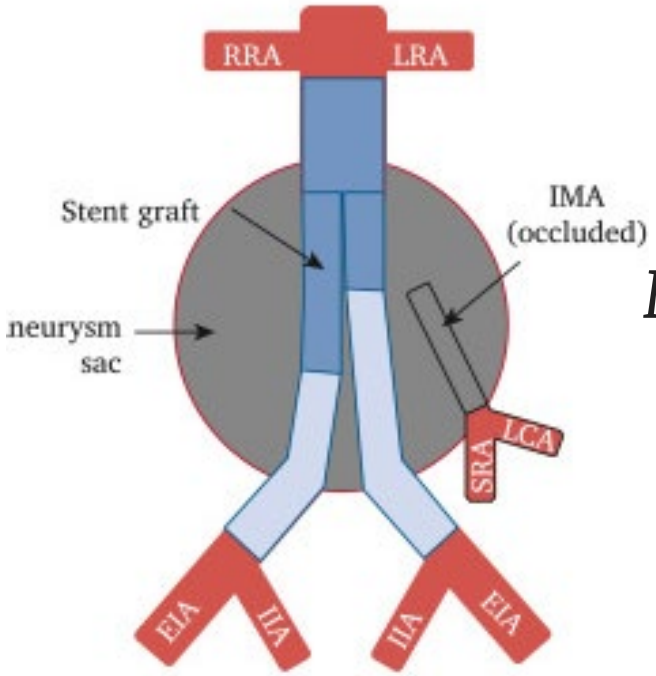
43%

Predisposing factors
Spontaneous occlusion 78%

- No antiplatelet therapy
- Higher Hematocrit
- No iliac involvement
- Posterior thrombus
- *Polyester > PTFE*

Spontaneous IMA occlusion after EVAR for AAA and its impact on clinical outcomes
Yoshino et al. JVS2024

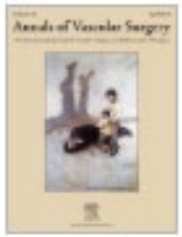
Que se passe-t-il après l'embolisation de l'AMI



57 pts

Nombre de Lombaires perméables

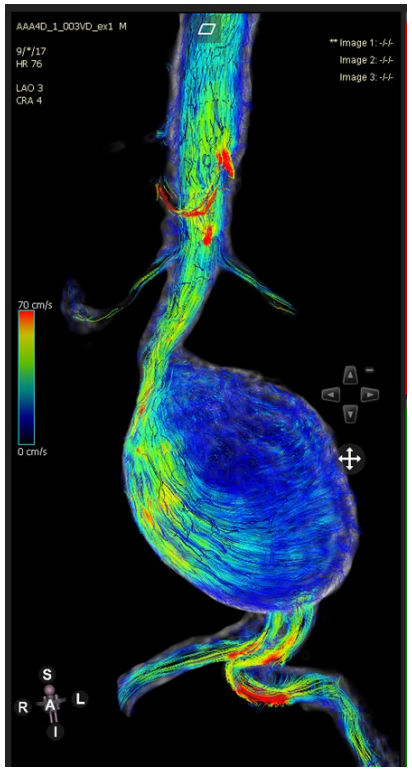
- ***Shrinkage***
- ***↑ diamètre***

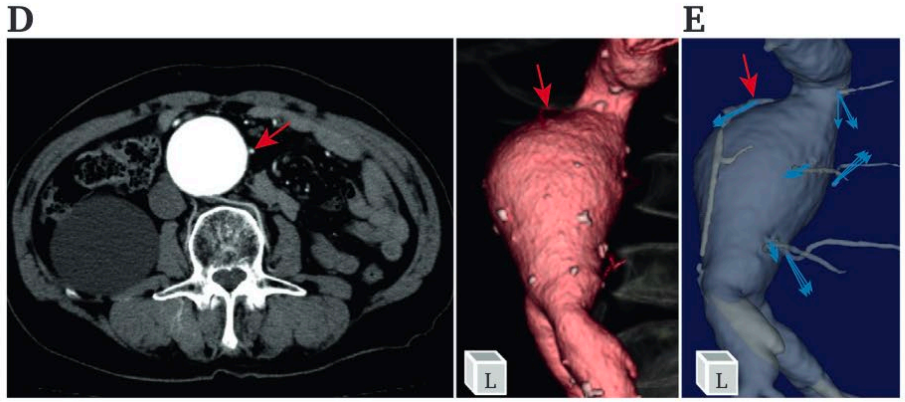


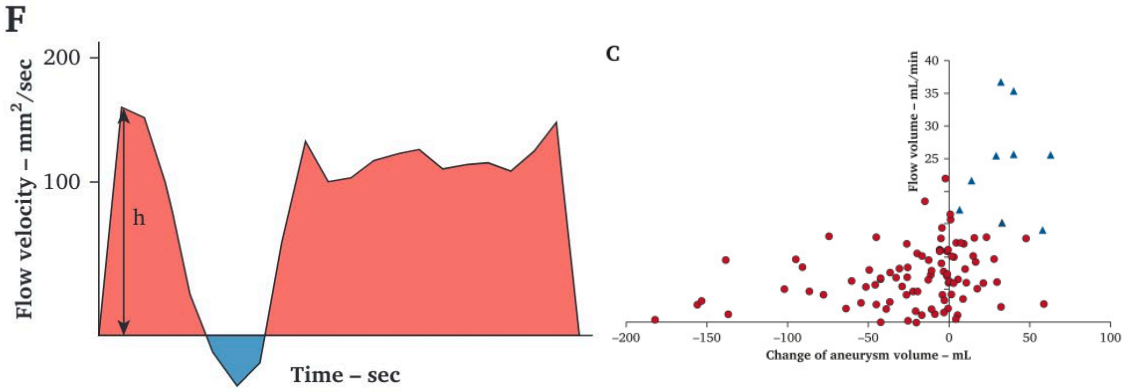
Impact of the Lumbar Arteries on Aneurysm Diameter and Type 2 Endoleak after Endovascular Aneurysm Repair.
Ueda et al. Ann Vasc Surg 2024

Hémodynamique ?

4D Flow MRI



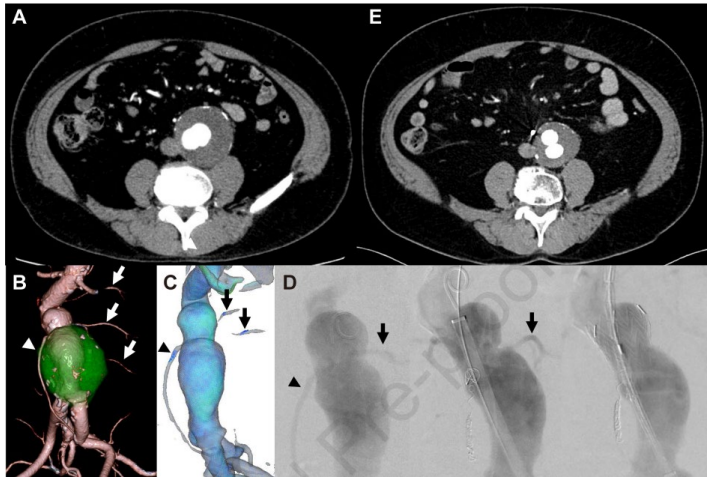




Corrélation entre Volume AAA, Flux Biphasique et TFV

Cutt off TFV 13.6 mL/min (100% sensitivity, 94.5% specificity)

Embolisations ciblées 11pts /31
Vs pas d'embolisation



↓T2E mais seulement à 7 j
Moins d'augmentation de diamètre à 1 an
Reintervention ?

Midterm Outcomes of Selective Aortic Side Branch Embolisation Guided by Four Dimensional Flow Sensitive Magnetic Resonance Imaging to Prevent Aneurysm Sac Enlargement due to Type II Endoleak in Patients with Abdominal Aortic Aneurysm. Endo et al. EJVES 2025

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Embolisation préventives mésentérique inferieure et lombaire : jusqu'où faut-il aller ?

esvs 2024

Recommendation 64			New
For patients undergoing endovascular repair of an abdominal aortic aneurysm, routine pre-emptive embolisation of the inferior mesenteric artery, lumbar arteries, and non-selective aneurysm sac embolisation is not indicated.			
Class	**Level**	**References**	**ToE**
III	B	Zhang *et al.* (2022),[456] Samura *et al.* (2020),[457] Li (2020),[458] Kontopodis *et al.* (2023)[459]	

AMI > 3mm

A.Lombaires> 2mm

An. Aorto Iliaque

- No antiplatelet therapy
- Higher Hematocrit
- No iliac involvement
- Posterior thrombus
- *Endurant ?*

Critères Hémodynamiques ?