

La petite école vasculaire, les 5 et 6 juin 2014



Une entité qui se répand avec ferveur,
Entité que le Ciel en sa grandeur
Inventa pour unir les vaisseaux de ses pairs,

L'AORTE

(puisqu'il faut l'appeler par son nom)

Benoît Cartier, MD

Chirurgien vasculaire



Divulcation de conflits d'intérêts potentiels



La petite école vasculaire

Société des sciences vasculaires du Québec

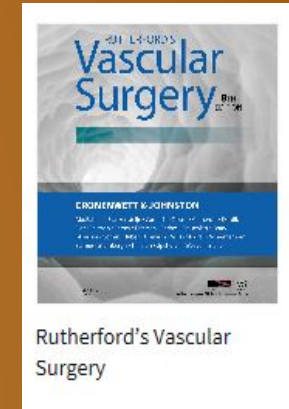
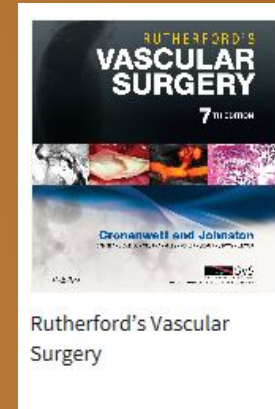
5 et 6 juin 2014

Dr Benoit Cartier, Conférencier

Aucun conflit d'intérêts à déclarer

L'AORTE : composante anévrysmale

- 1- Considérations générales
- 2- AAA: Évaluation et management
- 3- Planification du traitement des AAA
- 4- Traitement ouvert des AAA
- 5- Traitement endovasculaire des AAA
- 6- Traitement ouvert vs endovasculaire des AAA
- 7- AAA rompu
- 8- Anévrysmes de l'aorte thoracique et thoracoabdominal
- 9- Résumé

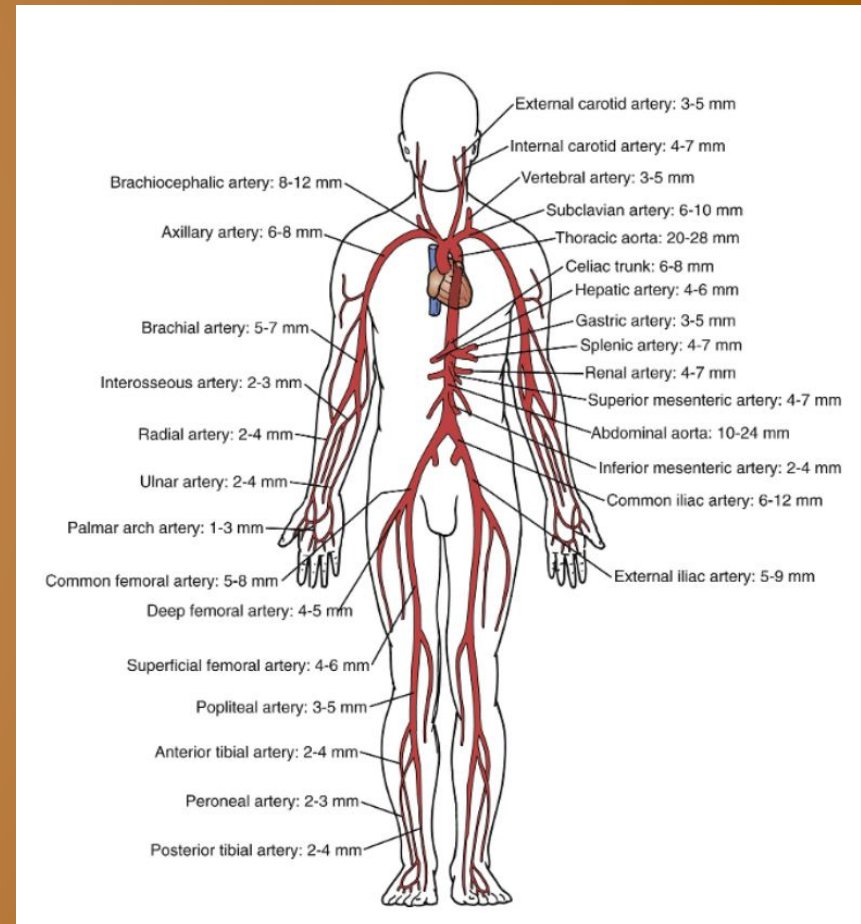




Considérations générales

Considérations générales

- *The Ad Hoc Committee on Reporting Standards of the Society for Vascular Surgery*
- Anévrisme = > 50%

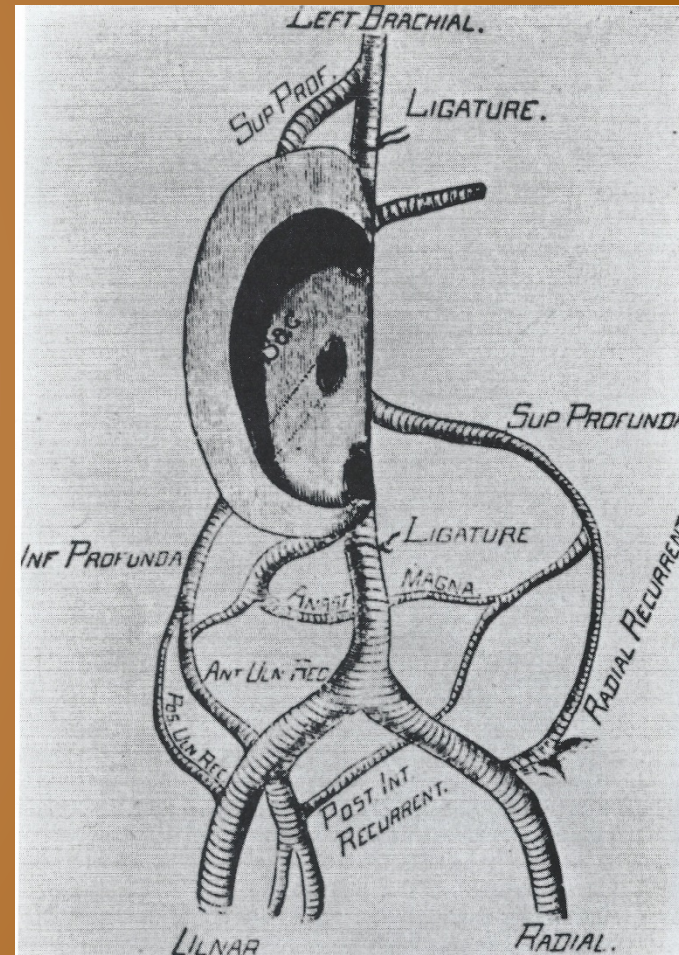
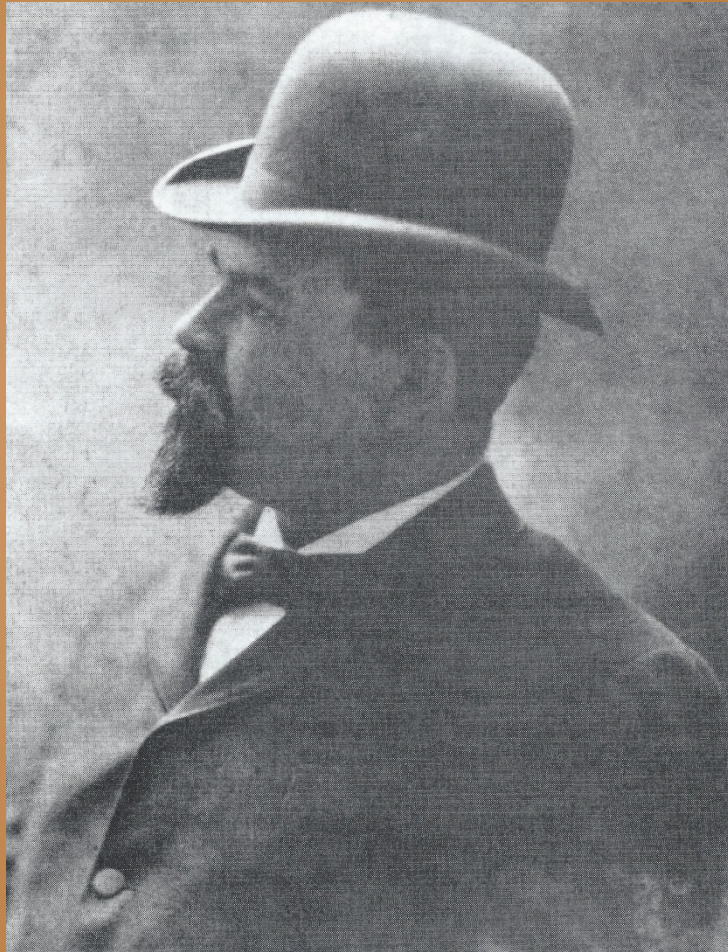


Vessel	Range of Reported Mean (cm)	Range of Reported Standard Deviation (cm)	Sex	Assessment Method
Thoracic aorta, root	3.50-3.72	0.38	Female	Computed tomography
	3.63-3.91	0.38	Male	Computed tomography
Thoracic aorta, ascending	2.86	—	Female, male	Chest radiography
Thoracic aorta, mid-descending	2.45-2.64	0.31	Female	Computed tomography
	2.39-2.98	0.31	Male	Computed tomography
Thoracic aorta, diaphragmatic	2.40-2.44	0.27-0.32	Female	Computed tomography
	2.43-2.69	0.27-0.40	Male	Computed tomography, intravenous arteriography
Abdominal aorta, supraceliac	2.10-2.31	0.27	Female	Computed tomography
	2.50-2.72	0.24-0.35	Male	Computed tomography
Abdominal aorta, suprarenal	1.86-1.88	0.09-0.21	Female	Computed tomography
	1.98-2.27	0.19-0.23	Male	Computed tomography
Abdominal aorta, infrarenal	1.66-2.16	0.22-0.32	Female	Computed tomography intravenous arteriography
	1.99-2.39	0.30-0.39	Male	Computed tomography intravenous arteriography

Celiac	0.53	0.03	Female, male	B-mode ultrasound
Superior mesenteric	0.63	0.04	Female, male	B-mode ultrasound
Iliac, common	0.97-1.02	0.15-0.19	Female	Computed tomography
	1.17-1.23	0.20	Male	Computed tomography
Iliac, internal	0.54	0.15	Female, male	Arteriography
Femoral, common	0.78-0.85	0.07-0.11	Female	Computed tomography, B-mode ultrasound
	0.78-1.12	0.09-0.30	Male	Computed tomography, B-mode ultrasound, M-mode ultrasound
Popliteal	0.90	20	Male	B-mode ultrasound
Tibial, posterior	0.30	0.01	Male	M-mode ultrasound
Carotid, common	0.77	0.08	Female	Arteriography
	0.63-0.84	0.10-0.14	Male	Arteriography, M-mode ultrasound
Carotid, bulb	0.92	0.10	Female	Arteriography
	0.99	0.10	Male	Arteriography
Carotid, internal	0.49	0.07	Female	Arteriography
	0.55	0.06	Male	Arteriography
Brachial	0.39	0.04	Female	M-mode ultrasound
	0.42-0.44	0.01-0.04	Male	M-mode ultrasound

Considérations générales

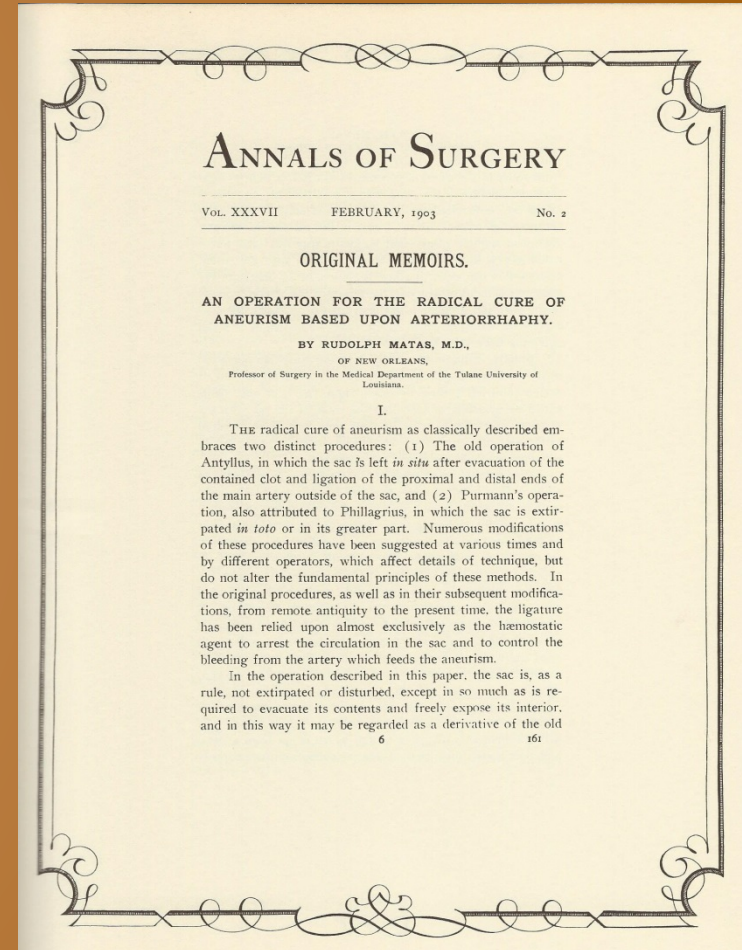
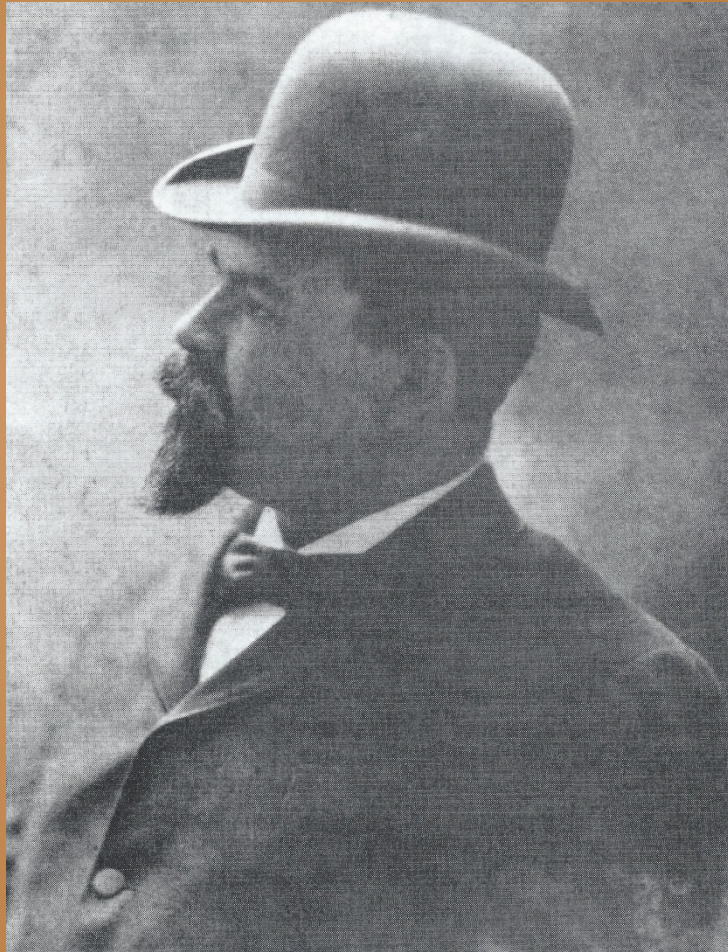
Historique



Rudolph Matas 1888

Considérations générales

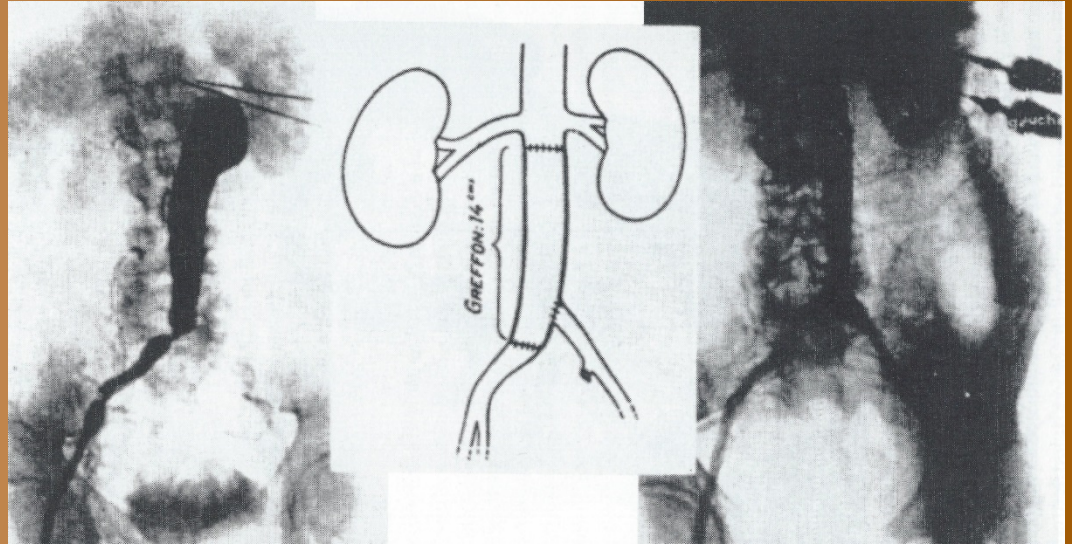
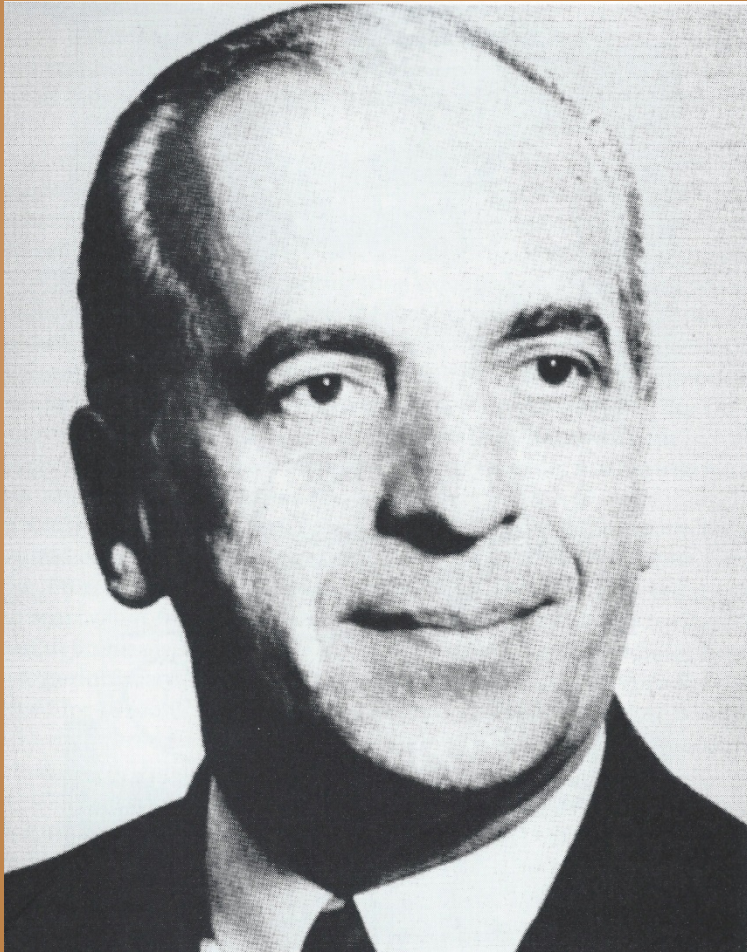
Historique



Rudolph Matas 1903

Considérations générales

Historique

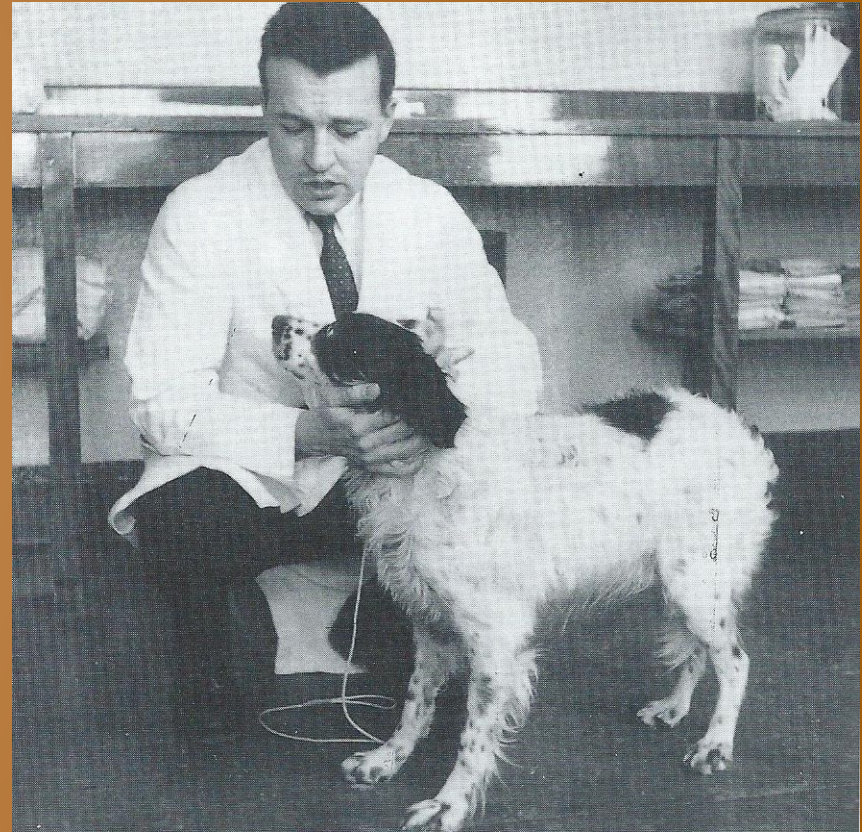


*Charles Dubost 1951,
homogreffe aorte thoracique
de cadavre*

Considérations générales

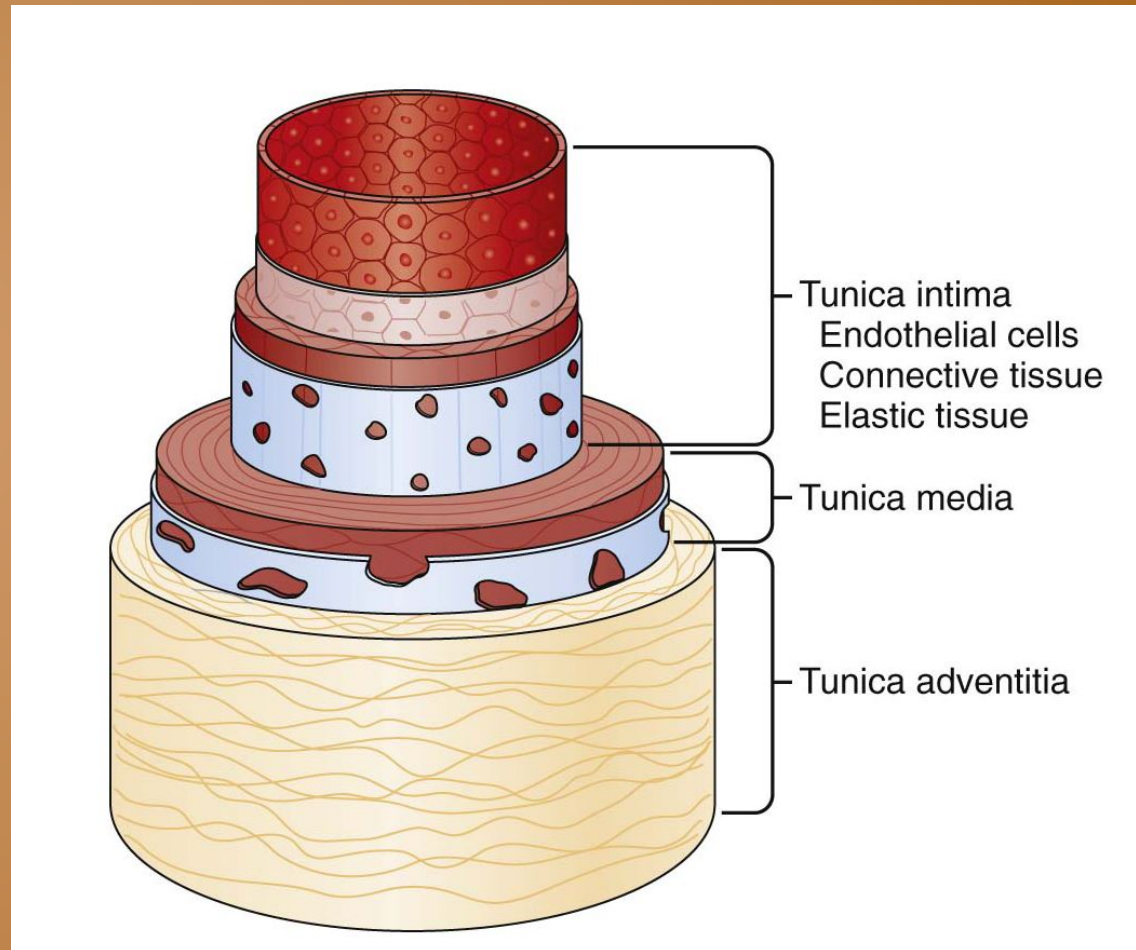
Historique

- Dr Arthur Voorhees et Dr Arthur Blakemore en 1954 publièrent 17 remplacements AAA et 1 anévrisme poplité avec un matériel synthétique (Vinyon N).
- Ce fut le début de l'ère moderne des prothèses synthétiques.



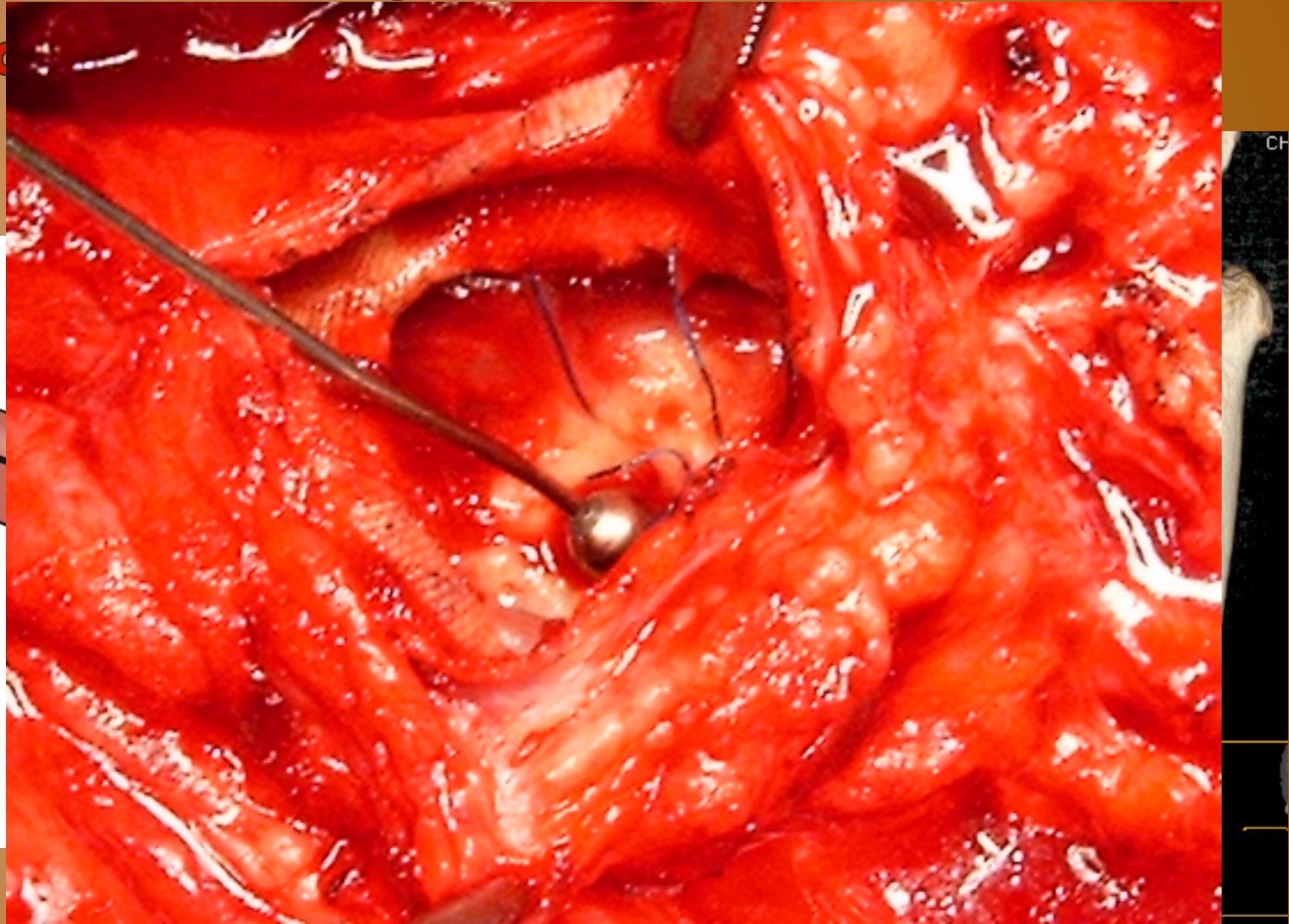
Considérations générales

Classification : Vrai vs Faux anévrisme



Considérations générales

Clo



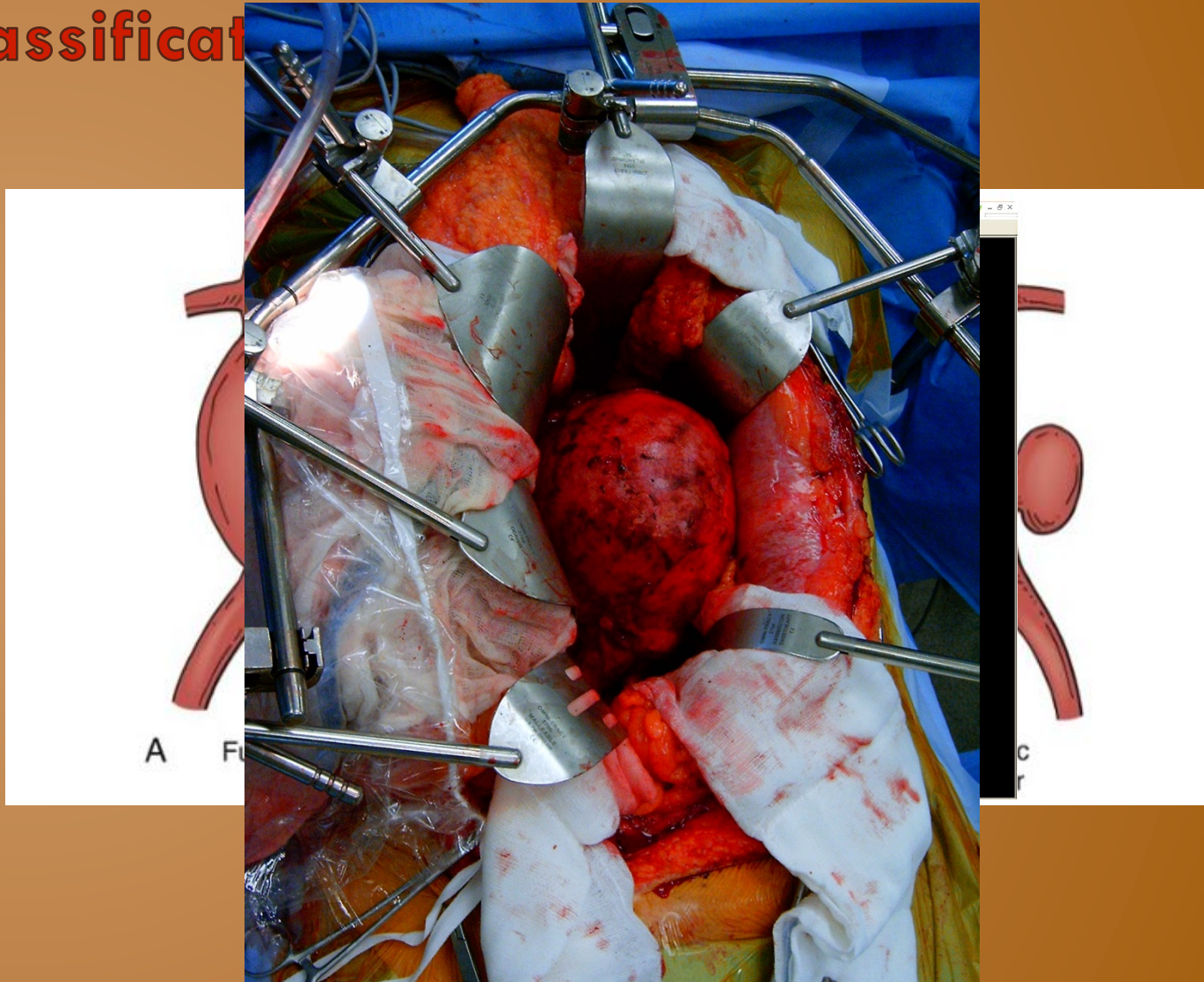
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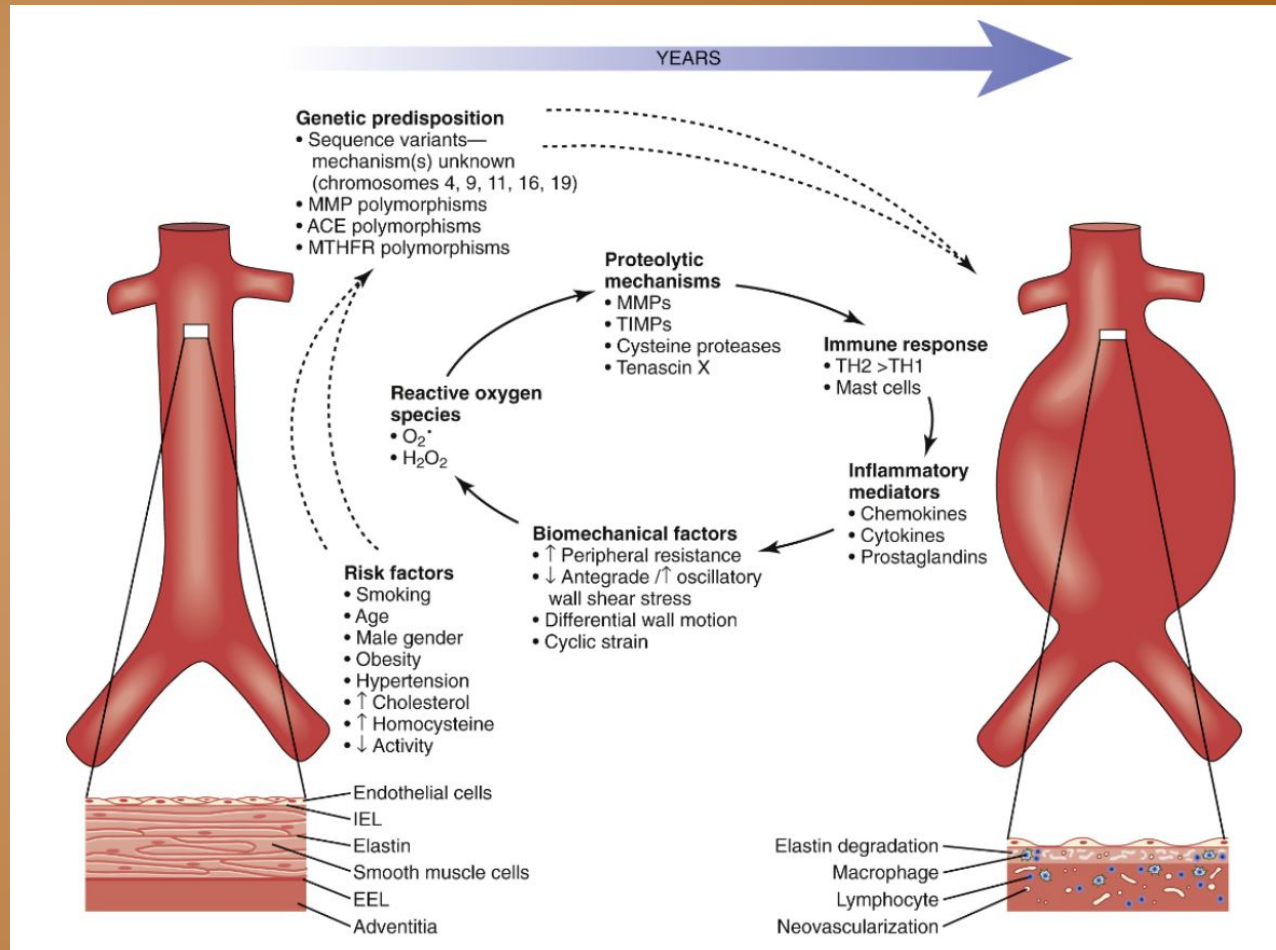
Considérations générales

Classification



Considérations générales

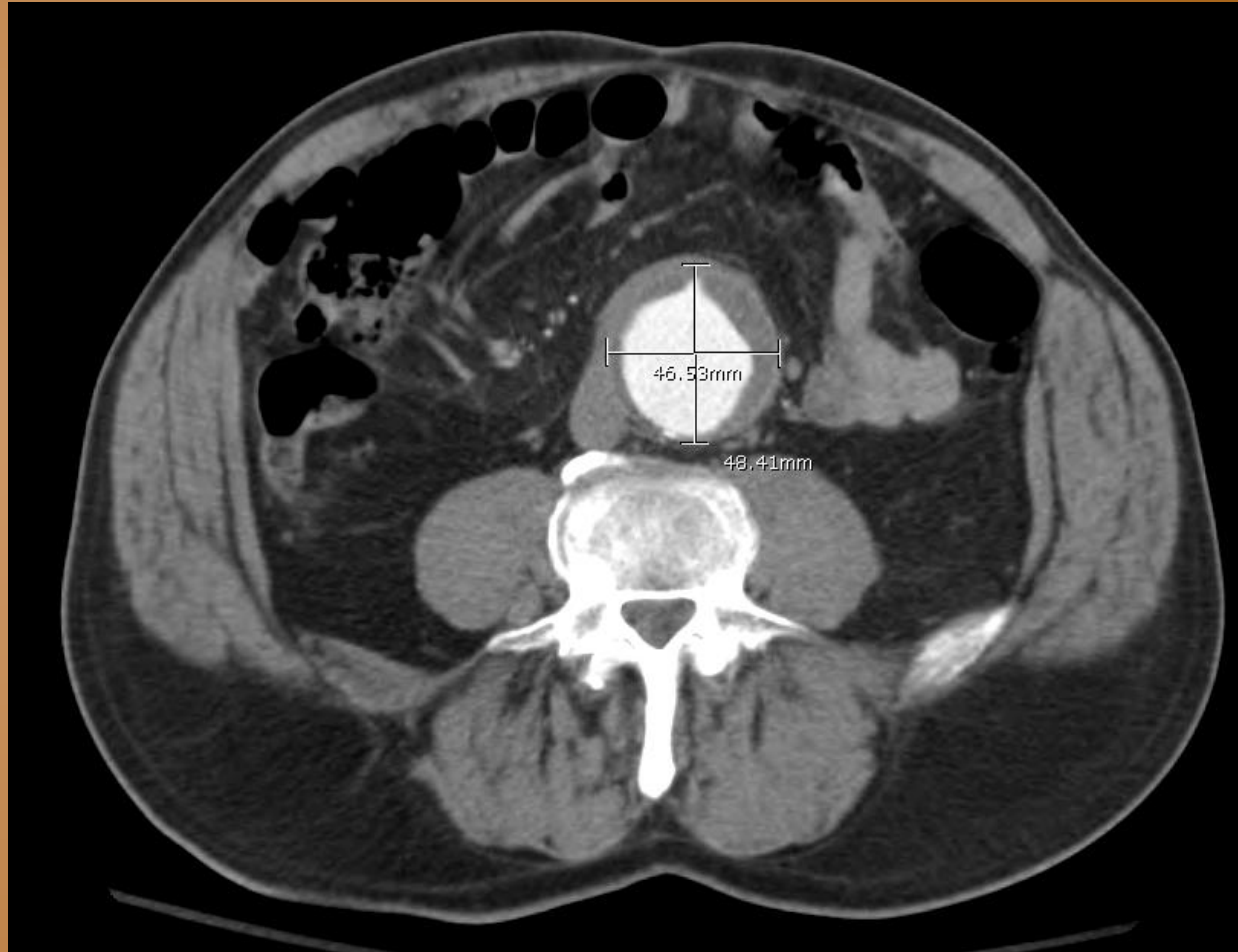
Classification : Étiologique — dégénérative



90 % de tout les AAA

Considérations générales

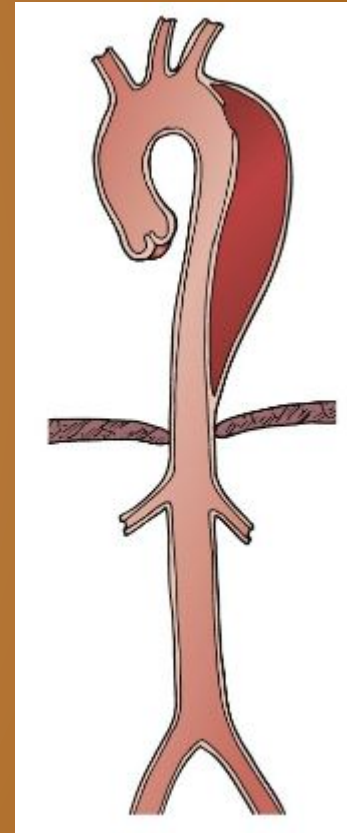
Classification : Étiologique — inflammatoire



Considérations générales

Classification : Étiologique — post dissection

- Surtout au niveau de l'aorte thoracique
- Peut représenter jusqu'à 20% des anévrismes



Considérations générales

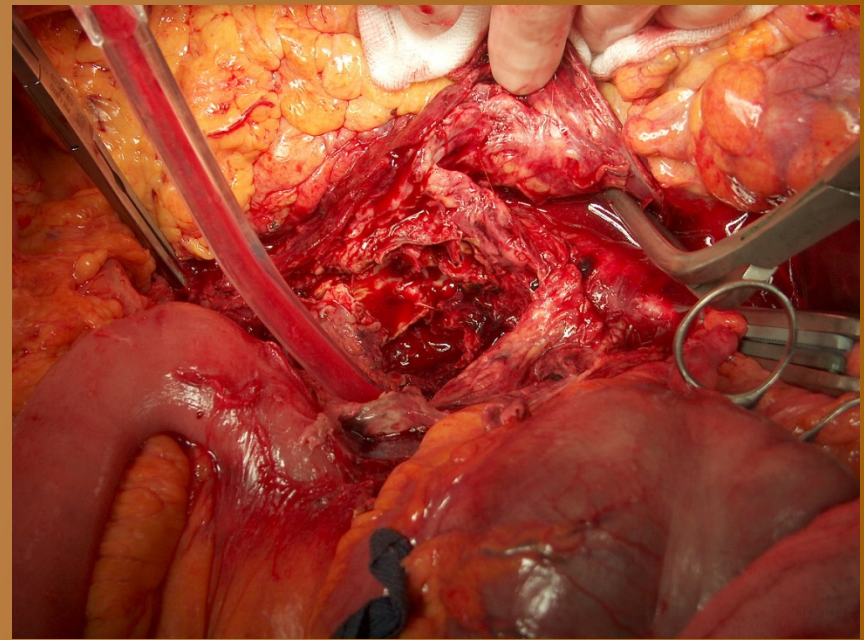
Classification : Étiologique — post traumatique

- Par définition il s'agit d'un faux anévrisme



Considérations générales

Classification : Étiologique — infectieux ou mycotique





Évaluation et management

Évaluation et management

TABLE 129-1 Normal Mean Aortic Diameter in 70-Year-Old Men and Women

From Wanhainen A, et al: Thoracic and abdominal aortic dimension in 70-year-old men and women: a population-based whole-body MRI study. *J Vasc Surg* 47:504-512, 2008.

Aortic Segment	Men			Women			P*
	N	Mean Diameter (cm)	SD	N	Mean Diameter (cm)	SD	
Ascending	116	4.0	0.4	104	3.4	0.4	<.001
Descending	116	3.2	0.3	114	2.8	0.3	<.001
Supraceliac	115	3.0	0.3	113	2.7	0.3	<.001
Suprarenal	116	2.8	0.3	114	2.7	0.3	.004
Infrarenal	117	2.4	0.5	114	2.2	0.3	<.001
Bifurcation	113	2.3	0.3	112	2.0	0.2	<.001

SD, Standard deviation.

TABLE 129-2 Definition of Aneurysm at Various Aortic Segments: Size and Ratio to Normal

From Wanhainen A, et al: Thoracic and abdominal aortic dimension in 70-year-old men and women: a population-based whole-body MRI study. *J Vasc Surg* 47:504-512, 2008.

Aortic Segment	Men		Women	
	Diameter (cm)	Ratio to Normal	Diameter (cm)	Ratio to Normal
Ascending	4.7	1.8	4.2	1.7
Descending	3.7	1.5	3.3	1.3
Infrarenal	3.0	1.1	2.7	1.0

Évaluation et management

- 50 % de plus que le diamètre normal
- 3cm
- 5 à 15 % des AAA vont impliquer les artères rénales
- Anévrisme juxtra-rénal
- Même si 25 % des AAA vont impliquer les artères iliaques, les anévrismes isolés des artères iliaques sont rares < 1 %
- 12 % vont avoir un anévrisme thoracique
- On retrouve des anévrismes fémoraux ou poplités dans environ 4 % des AAA

Évaluation et management

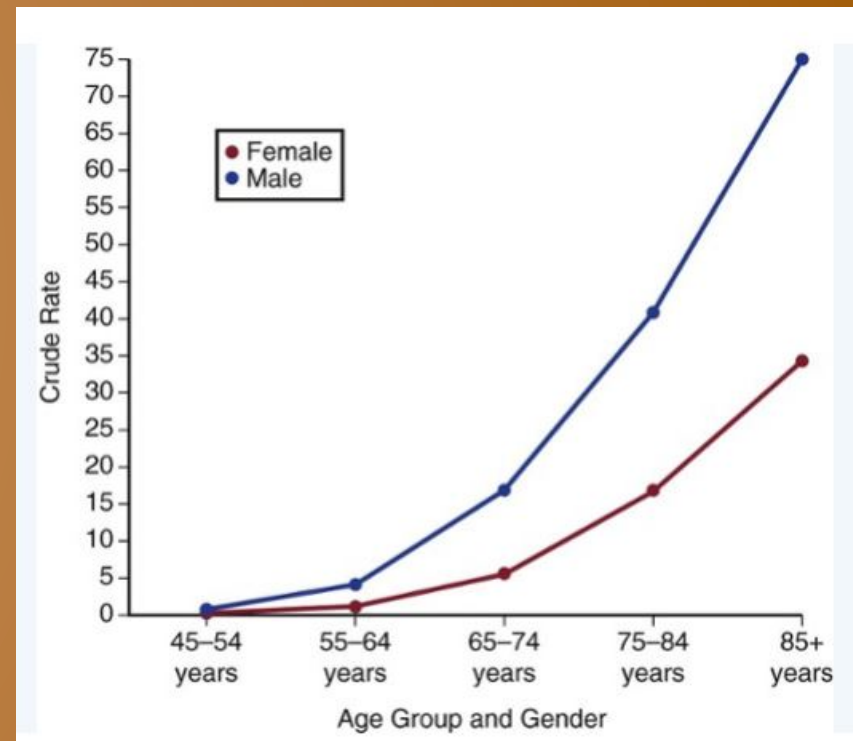
Impact d'un anévrisme rompu

- Aux EU, la 15^e cause de mortalité globale et la 10^e chez les ♂ de plus de 55 ans
- Si on considère que 30 % des patients avec un AAA rompu vont mourir avant d'arriver à l'hôpital, que 30 % vont mourir à l'hôpital avant d'être opérés et que la mortalité opératoire dans ces conditions est de 40-50 %
- Mortalité globale de 80 %

Évaluation et management

Incidence

- Affecte surtout la population des plus de 50 ans
- 2 à 6 fois plus ♂
- 2 à 3 fois plus chez les ♂ de race blanche



Évaluation et management

Facteurs de risque

TABLE 130-3 Independent Risk Factors for Detecting an Unknown 4-cm-Diameter or Larger Abdominal Aortic Aneurysm during Ultrasound Screening

From Lederle FA, et al: The aneurysm detection and management study screening program: validation cohort and final results. Aneurysm Detection and Management Veterans Affairs Cooperative Study Investigators. *Arch Intern Med* 160:1425, 2000.

Risk Factor	Odds Ratio*	95% CI
INCREASED RISK		
Smoking history	5.1	4.1-6.2
Family history of AAA	1.9	1.6-2.3
Older age (per 7-yr interval)	1.7	1.6-1.8
Coronary artery disease	1.5	1.4-1.7
High cholesterol	1.4	1.3-1.6
COPD	1.2	1.1-1.4
Height (per 7-cm interval)	1.2	1.1-1.3
DECREASED RISK		
Abdominal imaging within 5 yr	0.8	0.7-0.9
Deep venous thrombosis	0.7	0.5-0.8
Diabetes mellitus	0.5	0.5-0.6
Black race	0.5	0.4-0.7
Female gender	0.2	0.1-0.5

AAA, Abdominal aortic aneurysm; CI, confidence interval; COPD, chronic obstructive pulmonary disease.

Évaluation et management

Facteurs de risque

Race	Sex	Smoking History	Prevalence AAA \geq 3.0 cm (%)
White	Male	Yes	5.9
		No	1.9
	Female	Yes	1.9
		No	0.6
Black	Male	Yes	3.2
		No	1.4
Other	Male	Yes	3.6
		No	1.3

AAA, Abdominal aortic aneurysm.

Évaluation et management

Histoire familiale

- 15 à 25 % des patients traités pour un AAA ont un parent au 1^{er} degré avec un AAA par rapport à 3 % d'un groupe contrôle sans AAA
- Ce parent au 1^{er} degré a 12 fois plus de chance de développer un AAA
- Ces parents vont développer l'AAA 6 à 7 ans plus jeune et affecte plus souvent les ♀
- Bien que les AAA sont plus fréquents chez les ♂, une ♀ avec un AAA est plus susceptible d'avoir des parents porteurs

Évaluation et management

Clinique et diagnostique

- La plupart des AAA asymptomatique sont découverts de façon fortuite suite à une imagerie médicale pour une autre raison
- Peut donner des douleurs lombaires et abdominales vagues
- Rarement des symptômes d'ischémie aigue des MI par embolies d'éléments thrombotiques du sac anévrismal (petit anévrisme) ou par thrombose de AAA
- < 2 à 5 %

Évaluation et management

Clinique et diagnostique

- La plupart des AAA sont palpables à l'examen physique
- Sensibilité dépend :
 - Dimension
 - Obésité
 - Habilités de l'examineur
 - Examen ciblé

AAA: Évaluation et management

Clinique et diagnostique

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Évaluation et management

Clinique et diagnostique

- Échographie abdominal :
 - Moins dispendieuse
 - Moins invasive
 - Pour confirmer et faire le suivi
- Technicien dépendant
- Variation des mesures de 5mm dans 85 %
- Plus précis pour la mesure AP que transverse
- Portion supra rénale et les iliaques plus difficile à évaluer
- Pas efficace pour déterminer si AAA rompu
- En comparaison au Ct Scan sous-évalue de 2-4 mm en AP

Évaluation et management

Clinique et diagnostique

- La résonance magnétique à cause de la faible visualisation des plaques calcifiées, de sa résolution spatiale qui est moindre par rapport au Ct angio, de son coût plus élevé, du manque de standardisation dans l'acquisition des données et de la claustrophobie chez certains patients, n'est pas l'examen recommandé pour l'évaluation des AAA

Évaluation et management

Dépistage

- Scott RA, Bridgewater SG, Ashton HA. Randomized clinical trial of screening for abdominal aortic aneurysm in women. *Br J Surg* 2002;89:283-5.
- Lindholt JS, Juul S, Fasting H, Henneberg EW. Hospital costs and benefits of screening for abdominal aortic aneurysms. Results from a randomised population screening trial. *Eur J Vasc Endovasc Surg* 2002;23:55-60.
- Ashton HA, Buxton MJ, Day NE, Kim LG, Marteau TM, Scott RA, et al. The Multicentre Aneurysm Screening Study (MASS) into the effect of abdominal aortic aneurysm screening on mortality in men: A randomised controlled trial. *Lancet* 2002;360:1531-9.
- Scott RA, Wilson NM, Ashton HA, Kay DN. Influence of screening on the incidence of ruptured abdominal aortic aneurysm: 5-year results of a randomized controlled study. *Br J Surg* 1995;82:1066-70.
- Vardolaki KA, Walker NM, Couto E, Day NE, Thompson SG, Ashton HA, Scott RA. Late results concerning feasibility and compliance from a randomized trial of ultrasonographic screening for abdominal aortic aneurysm. *Br J Surg* 2002;89:861-4.
- Norman PE, Jamrozik K, Lawrence-Brown MM, Le MT, Spencer CA, Tuohy RJ, et al. Population based randomised controlled trial on impact of screening on mortality from abdominal aortic aneurysm. *BMJ* 2004;329:1259.

127,891 hommes et 9,342 femmes
entre 65 et 79 ans

One-time ultrasound screening for AAA is recommended for all men at or older than 65 years. Screening men as early as 55 years is appropriate for those with a family history of AAA.

Level of recommendation: Strong
Quality of evidence: High

One-time ultrasound screening for AAA is recommended for all women at or older than 65 years with a family history of AAA or who have smoked.

Level of recommendation: Strong
Quality of evidence: Moderate

Re-screening patients for AAA is not recommended if an initial ultrasound scan performed on patients 65 years of age or older demonstrates an aortic diameter of <2.6 cm.

Level of recommendation: Strong
Quality of evidence: Moderate

Surveillance imaging at 12-month intervals is recommended for patients with an AAA of 3.5 cm to 4.4 cm in maximum diameter.

Level of recommendation: Strong
Quality of evidence: Low

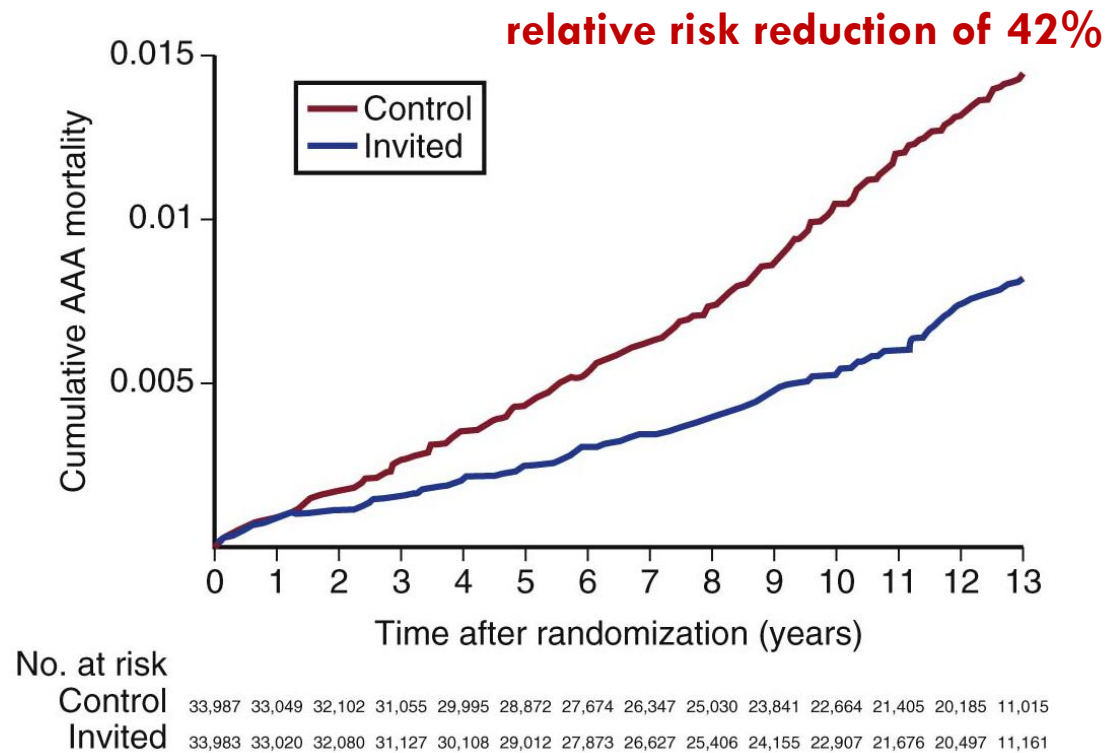
Surveillance imaging at six-month intervals is recommended for those patients with an AAA between 4.5 cm and 5.4 cm in maximum diameter.

Level of recommendation: Strong
Quality of evidence: Low

SVS practice guidelines for the care of patients with an abdominal aortic aneurysm: Executive summary *JVS* ;Volume 50, Number 4; 880-896; 2009

Évaluation et management

Dépistage



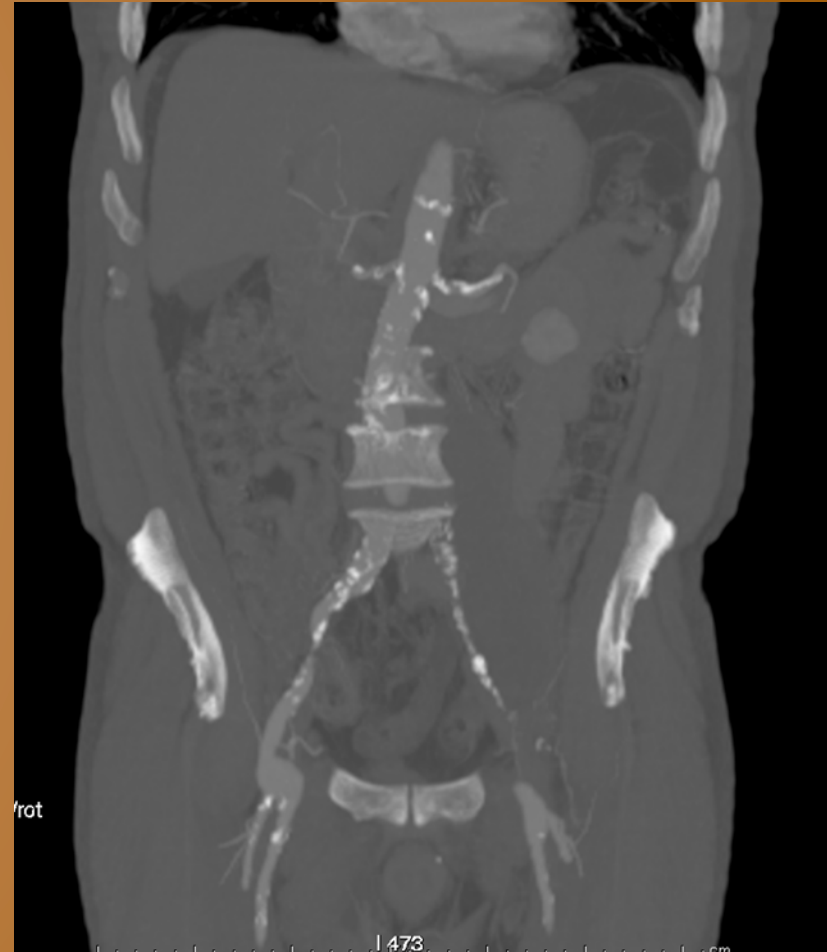
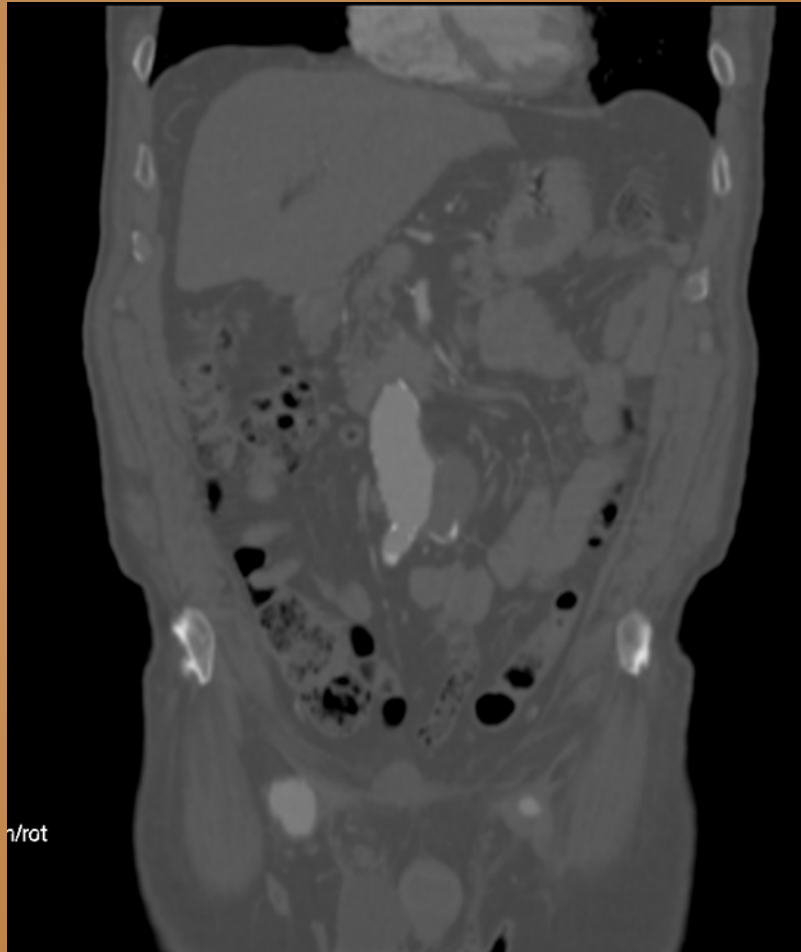
Évaluation et management

Prise de décision- risque de rupture

AAA Diameter (cm)	12-Month Rupture Risk (%)
3.0-3.9	0.3
4.0-4.9	0.5-1.5
5.0-5.9	1-11
6.0-6.9	11-22
>7	>30

Évaluation et management

Prise de décision- risque de rupture



Évaluation et management

Prise de décision- risque de rupture

Risk Factor	Low	Medium	High
Diameter	<5 cm	5-6 cm	>6 cm
Gender	—	Male	Female
Wall stress	Low (<30 N/cm ²)	Medium (30-40 N/cm ²)	High (>40 N/cm ²)
Smoking	—	Never, former	Current
Pulmonary/COPD	None, mild	Moderate	Severe, steroids
Expansion rate	<0.3 cm/yr	0.3-0.6 cm/yr	>0.6 cm/yr
Family history	None	One	Multiple
Hypertension	None	Controlled	Uncontrolled
Statin use	On statin	Not on statin	

Évaluation et management

Prise de décision- espérance de vie

Age (Yr)	Total	MALE		FEMALE	
		White	Black	White	Black
60	13	12	11	14	13
65	11	11	10	12	11
70	10	9	8	10	10
75	8	8	7	9	8
80	8	6	6	7	6
≥85	5	4	4	5	5

Évaluation et management

Prise de décision- traitement médical

Br J Surg. 2014 May 21. doi: 10.1002/bjs.9517. [Epub ahead of print]

Statin use and rupture of abdominal aortic aneurysm.

Wemmelund H¹, Høgh A, Hundborg HH, Thomsen RW, Johnsen SP, Lindholt JS.

Author information

Abstract

BACKGROUND: Ruptured abdominal aortic aneurysm (rAAA) is associated with high mortality. Research suggests that statins may reduce abdominal aortic aneurysm (AAA) growth and improve rAAA outcomes. However, the clinical impact of statins remains uncertain in relation to both the risk and prognosis of rAAA.

METHODS: This nationwide, population-based, combined case-control and follow-up study included all patients (aged at least 50 years) with a first-time hospital admission for rAAA and 1 : 1 matched AAA controls without rupture in Denmark from 1996 to 2008. Individual-level data on preadmission drug use, co-morbidities, socioeconomic markers, healthcare contacts and death were obtained from Danish nationwide registries.

RESULTS: The study included 3584 cases and 3584 matched controls. Current statin use was registered for 418 patients with rAAA (11.7 per cent) and 539 AAA controls (15.0 per cent), corresponding to an age- and sex-matched odds ratio (OR) of 0.70 (95 per cent confidence interval (c.i.) 0.60 to 0.81) for rAAA in current statin users versus never users. The decreased risk of rAAA remained after adjustment for potential confounding factors (adjusted OR 0.73, 0.61 to 0.86). The overall 30-day mortality rate from time of hospital admission among patients with rAAA was 46.1 per cent in current statin users compared with 59.3 per cent in never users (adjusted mortality rate ratio (MRR) 0.80, 95 per cent c.i. 0.68 to 0.95). Patients who had formerly used statins did not have reduced mortality (adjusted MRR 0.98, 0.78 to 1.22).

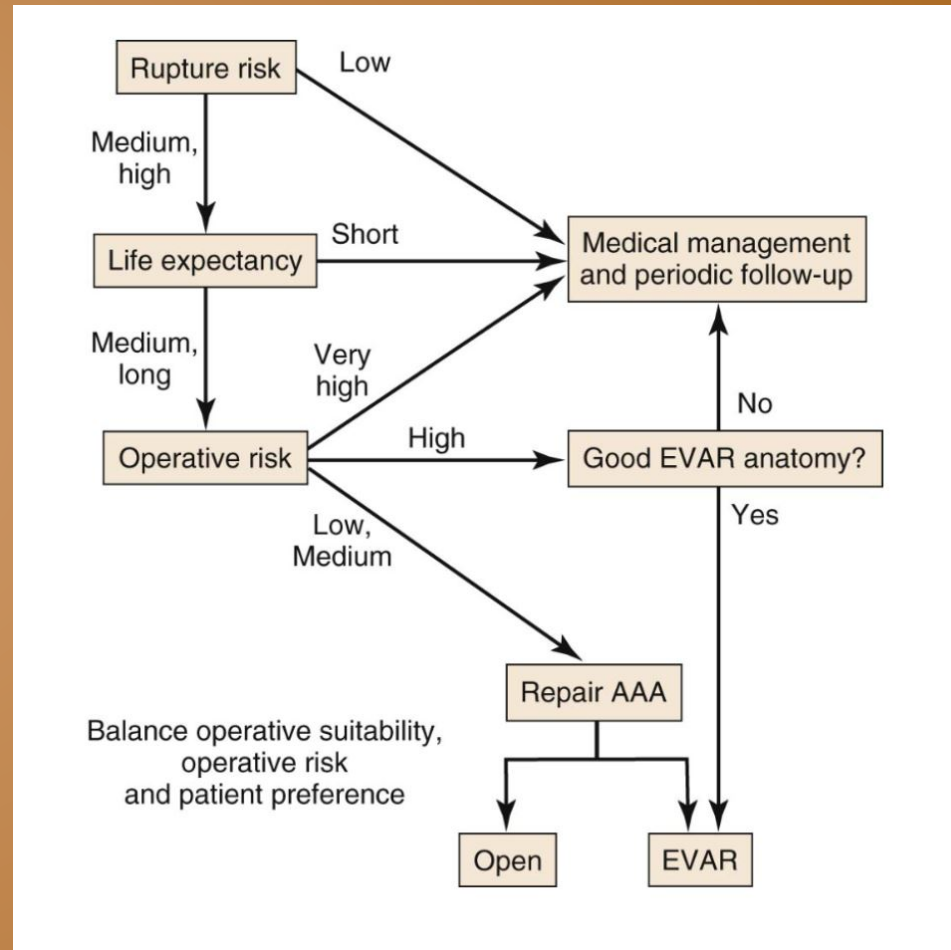
CONCLUSION: Statin use was associated with a reduced risk of rAAA and lower case fatality following rAAA. These results support current guidelines that recommend statin therapy in patients diagnosed with AAA.

Any	1	4828	0.105	0.005	0	4271	0.100	0.145	0
antihypertensive drug			(0.064)				(0.075)		

ACE, Angiotensin-converting enzyme.

Évaluation et management

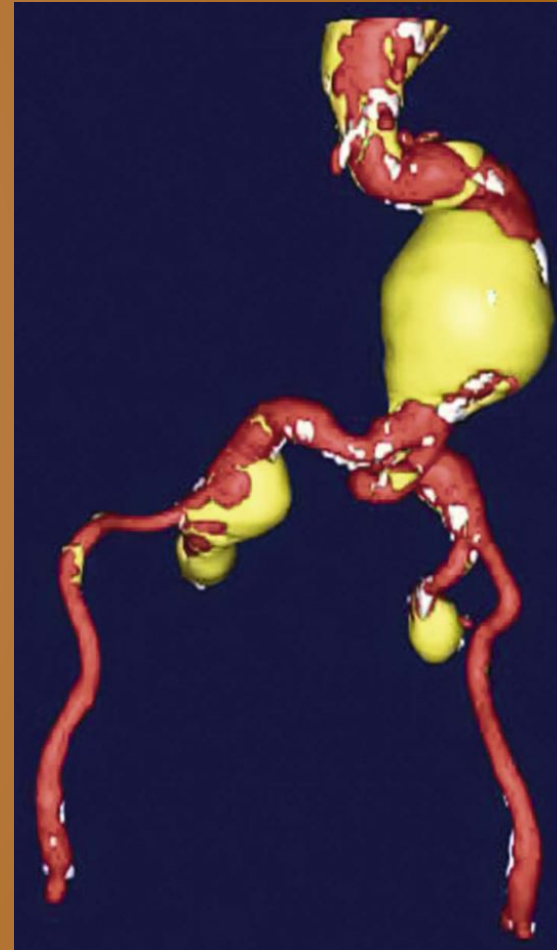
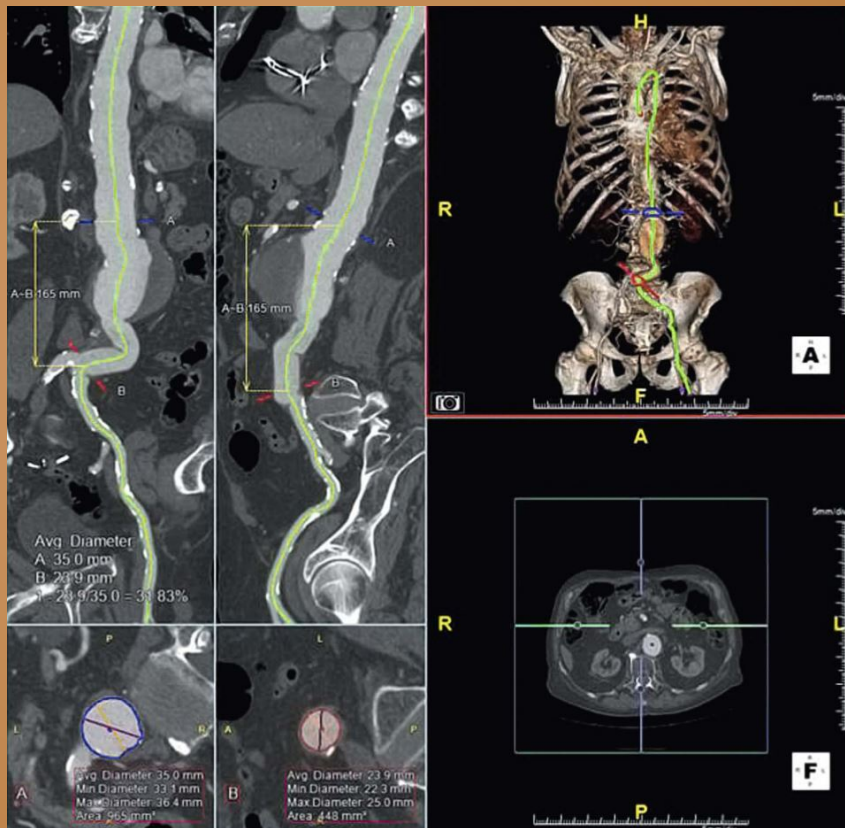
Prise de décision- résumé





Planification du traitement des AAA

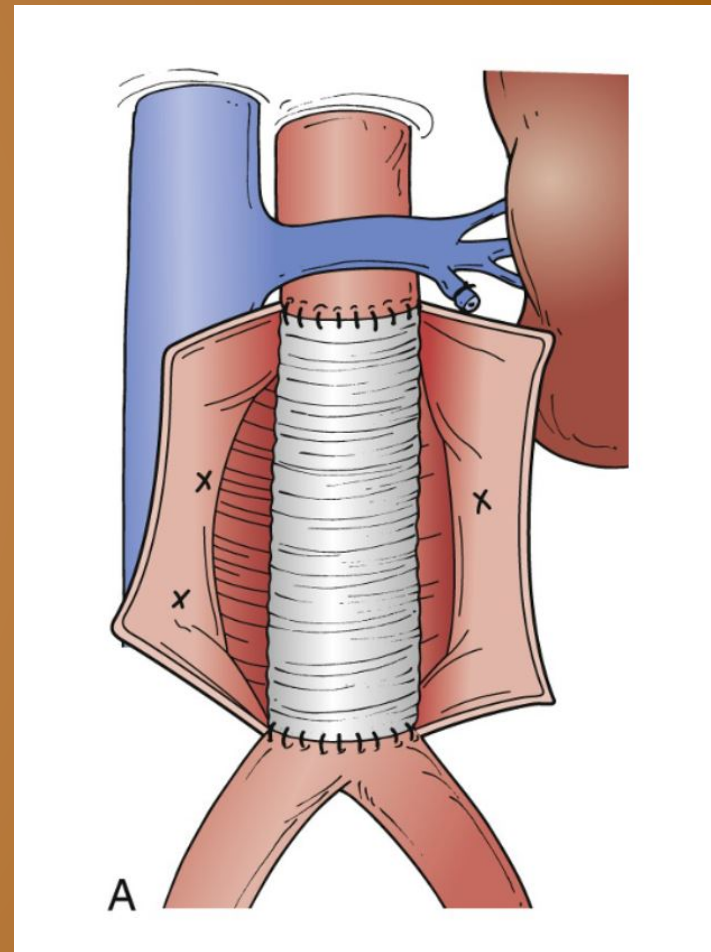
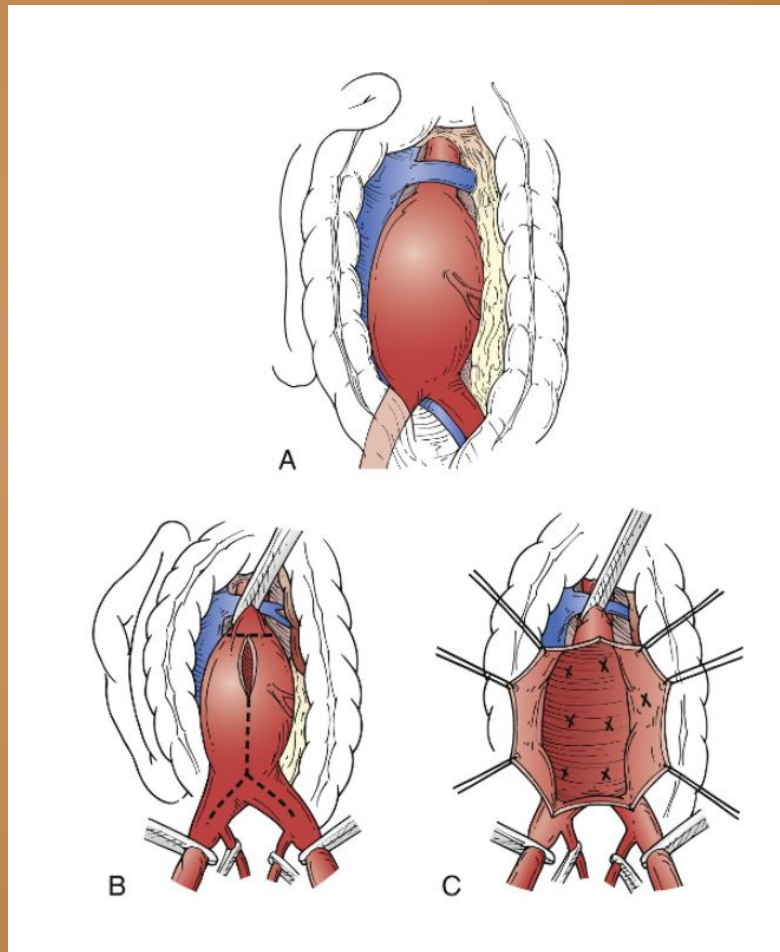
Planification du traitement des AAA – imagerie



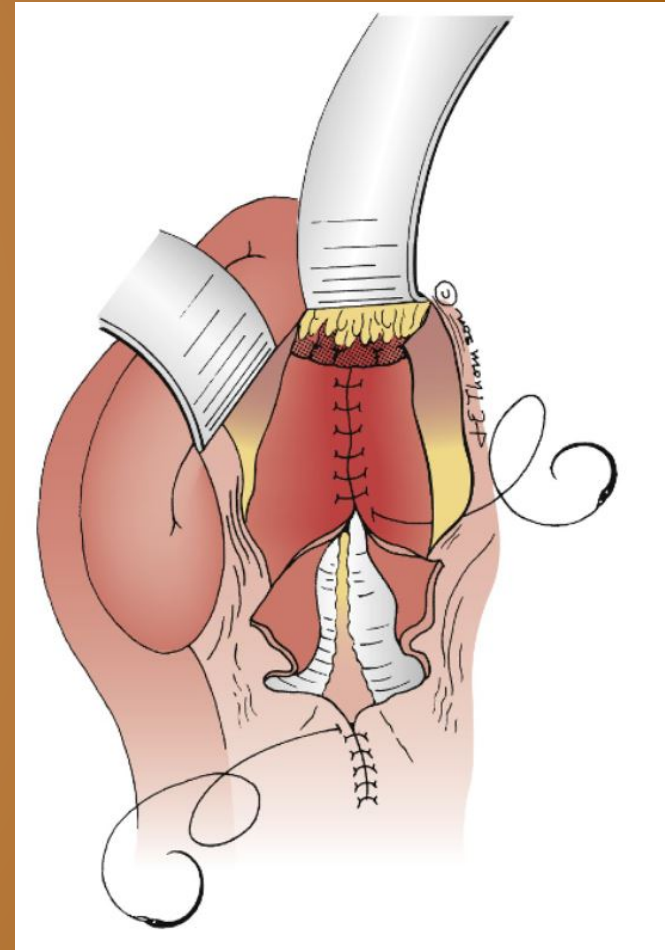
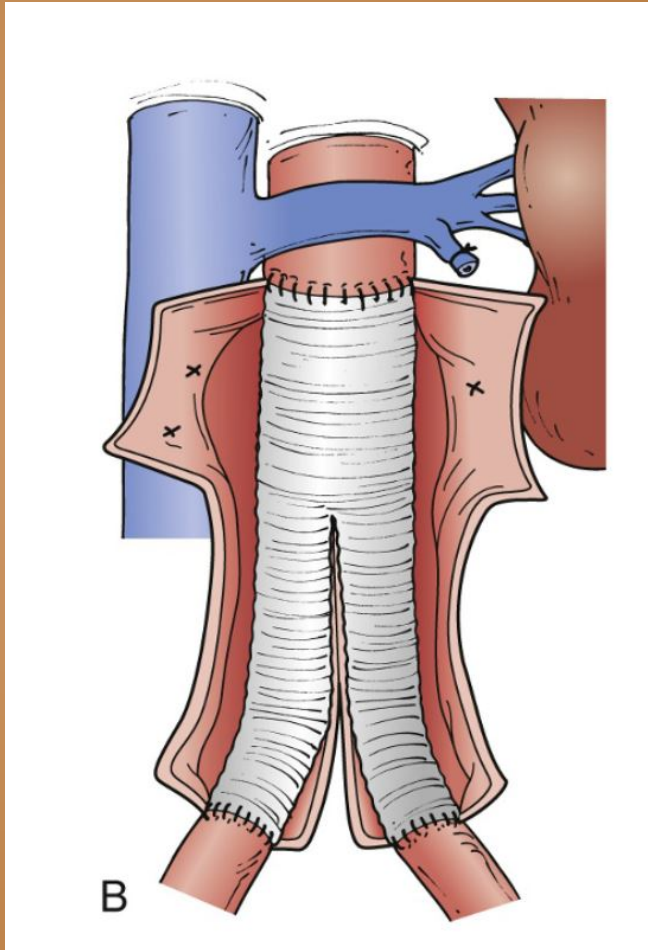


Traitement ouvert des AAA

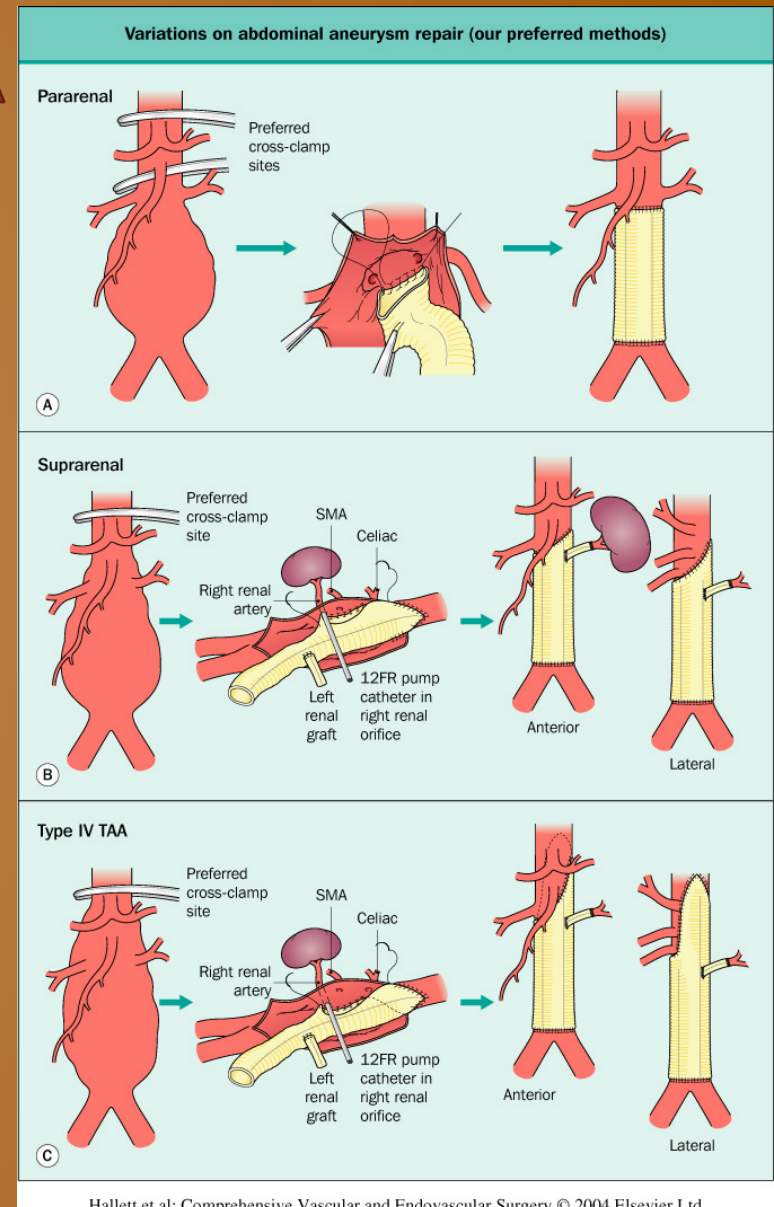
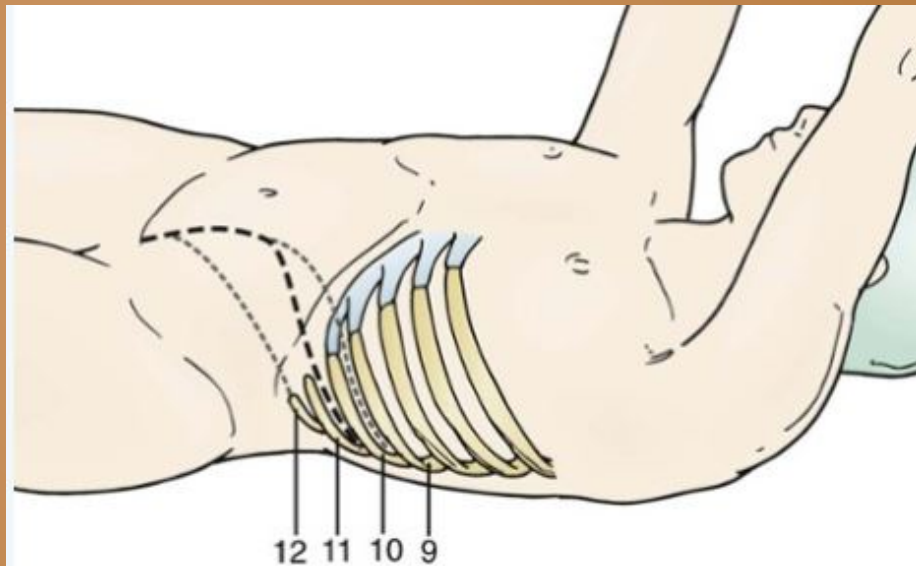
Traitement ouvert des AAA



Traitement ouvert des AAA



Traitement ouvert des AAA



Traitement ouvert des AAA

Series	Study Period	Number of Patients	Mortality	Data Source
Bradbury et al	1976-1996	842	7.5%	Royal Edinburgh Infirmary Database
Heller et al	1979-1999	358,521	5.6%	National (US) Hospital Discharge Survey
Johnston et al	1986	666	4.8%	Canadian Society of Vascular Surgery
Lawrence et al	1990-1994	32,389	8.4%	National (US) Hospital Discharge Survey
Galland	1990-1995	2680	4.8%	British Joint Vascular Research Group
Dardik	1990-1995	2335	3.5%	Maryland Health Service Cost Review
Akkersdijk et al	1990	1289	6.8%	Dutch National Medical Registration
Kazmers et al	1991-1993	3687	4.9%	(US) Veterans Affairs Medical Centers
Bush et al	1991-2008	14,232	4.4%	US NSQIP-VA
Huber et al	2001	4607	3.8%	National (US) Inpatient Sample
Huber et al	1994-1996	16,450	4.2%	National (US) Inpatient Sample

Rigberg et al	1995-1999	9778	3.8%	California Statewide
Dimick et al	1996-1997	7980	3.8%	National (US) Inpatient Sample
Bayly et al	1999	671	6.3%	Vascular Anaesthesiology Society of Great Britain and Ireland
Anderson et al	2000-2002	3064	3.9%	New York (US) Statewide
Hua et al	2000-2003	582	4.0%	US NSQIP-PS
Schermerhorn et al	2001-2004	22,830	4.8%	Medicare (US) Beneficiaries
Schwarze et al	2001-2006	75,222	3.0%	National (US) Inpatient Sample
Jackson et al	2003-2007	703	3.0%	Medicare (US) SAF (5% sample)
Grant et al	2008-2010	48,593	4.7%	UK National Vascular Database



Traitement endovasculaire des AAA

Traitement endovasculaire des AAA



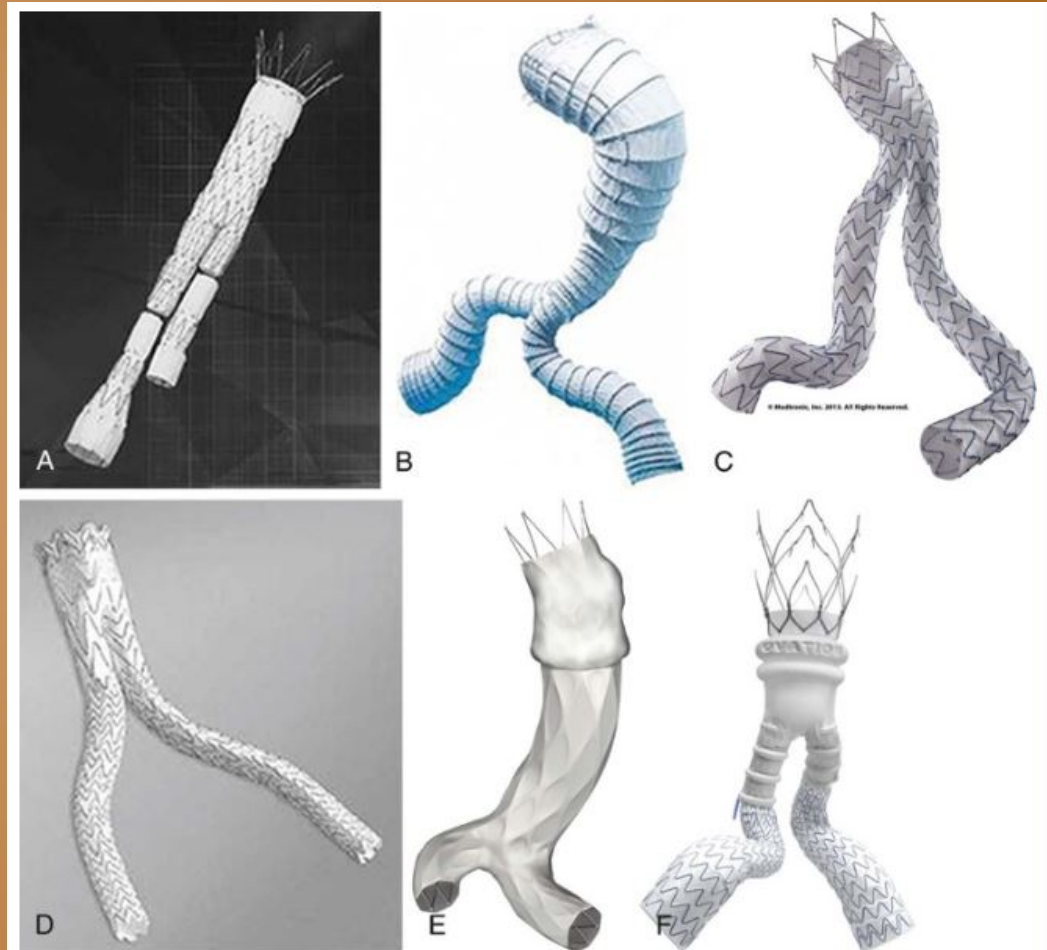
Dr Juan Carlos Parodi



Figure 1. Dr. Nicholay Volodos.

Début 1990

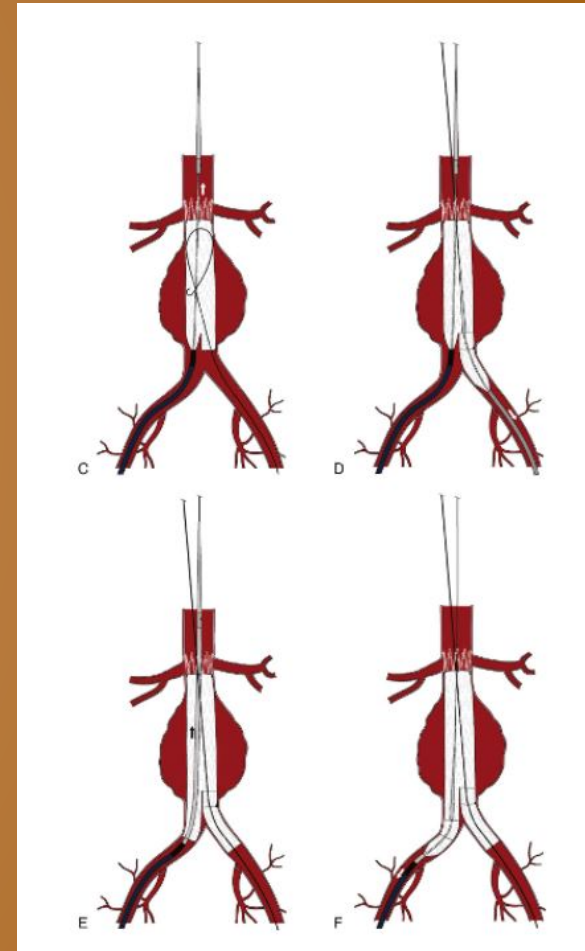
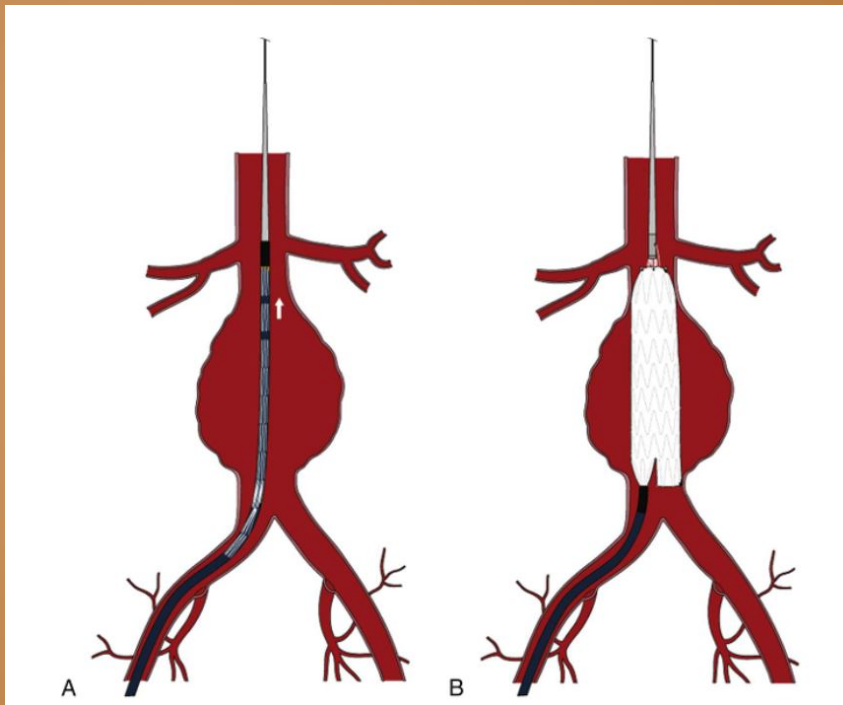
Traitement endovasculaire des AAA



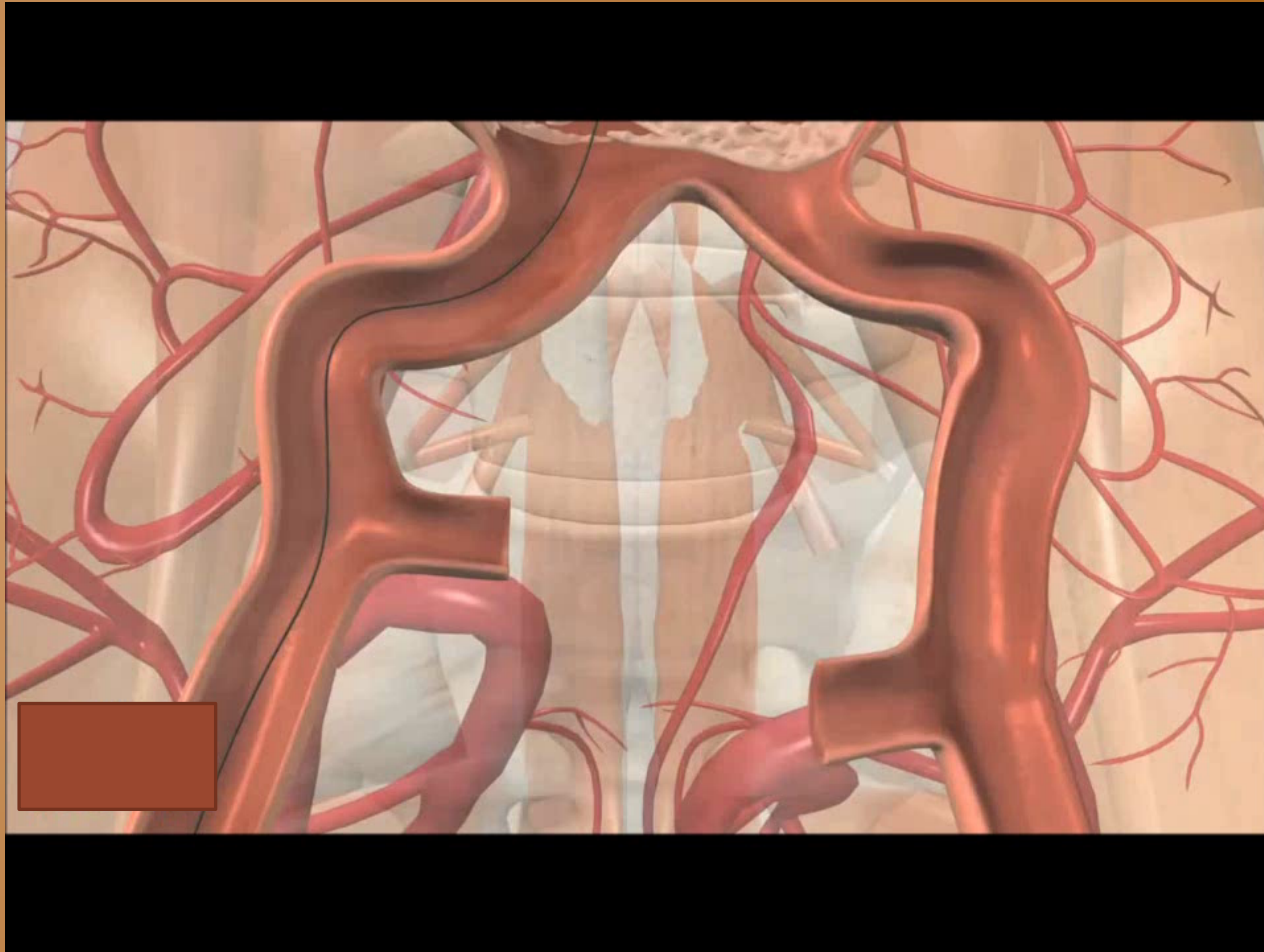
Traitement endovasculaire des AAA

Device Name	Company	Configuration	Max Device Diameter	Minimum Device Diameter	Fabric	Metal	Active Fixation	Anatomic Fixation
Zenith	Cook	Trimodular	36	22	Woven polyester	Stainless steel	Suprarenal stent with barbs	
Aorfix	Lombard Medical	Bimodular	31	24	Woven polyester	Nitinol	Hooks	
Endurant	Medtronic	Bimodular	36	23	Woven polyester	Nitinol	Suprarenal stent with barbs	
Excluder	Gore	Bimodular	31	23	ePTFE	Nitinol	Infrarenal barbs	
AFX	Endologix	Unibody	(cuff) 34	22	ePTFE	Cobalt chromium	Suprarenal deployment at aortic bifurcation	Deployment at aortic bifurcation
Ovation	Trivascular	Trimodular	34	20	ePTFE	Nitinol	Suprarenal stent with barbs and infrarenal sealing rings	

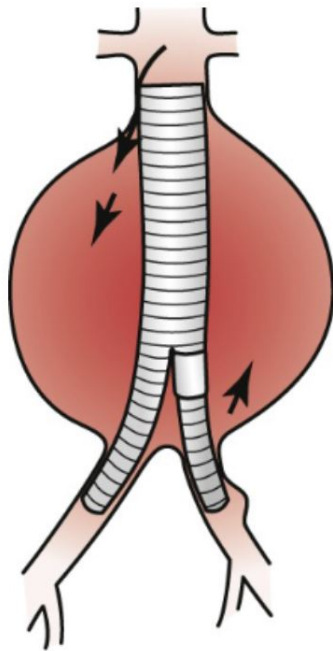
Traitement endovasculaire des AAA



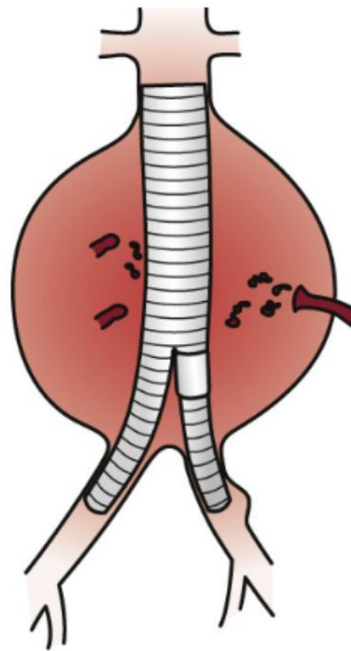
Traitement endovasculaire des AAA



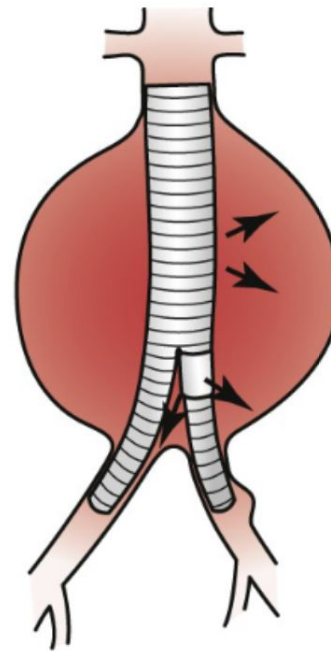
Traitement endovasculaire des AAA



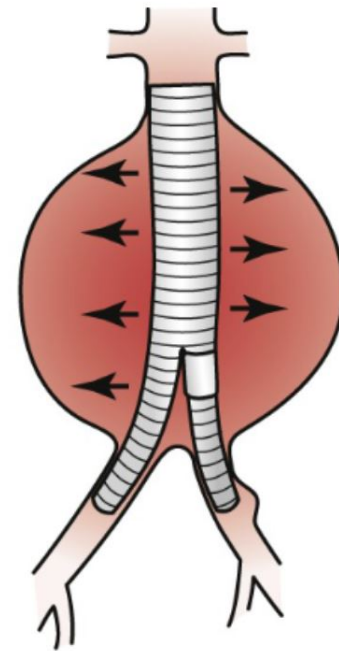
Type I



Type II

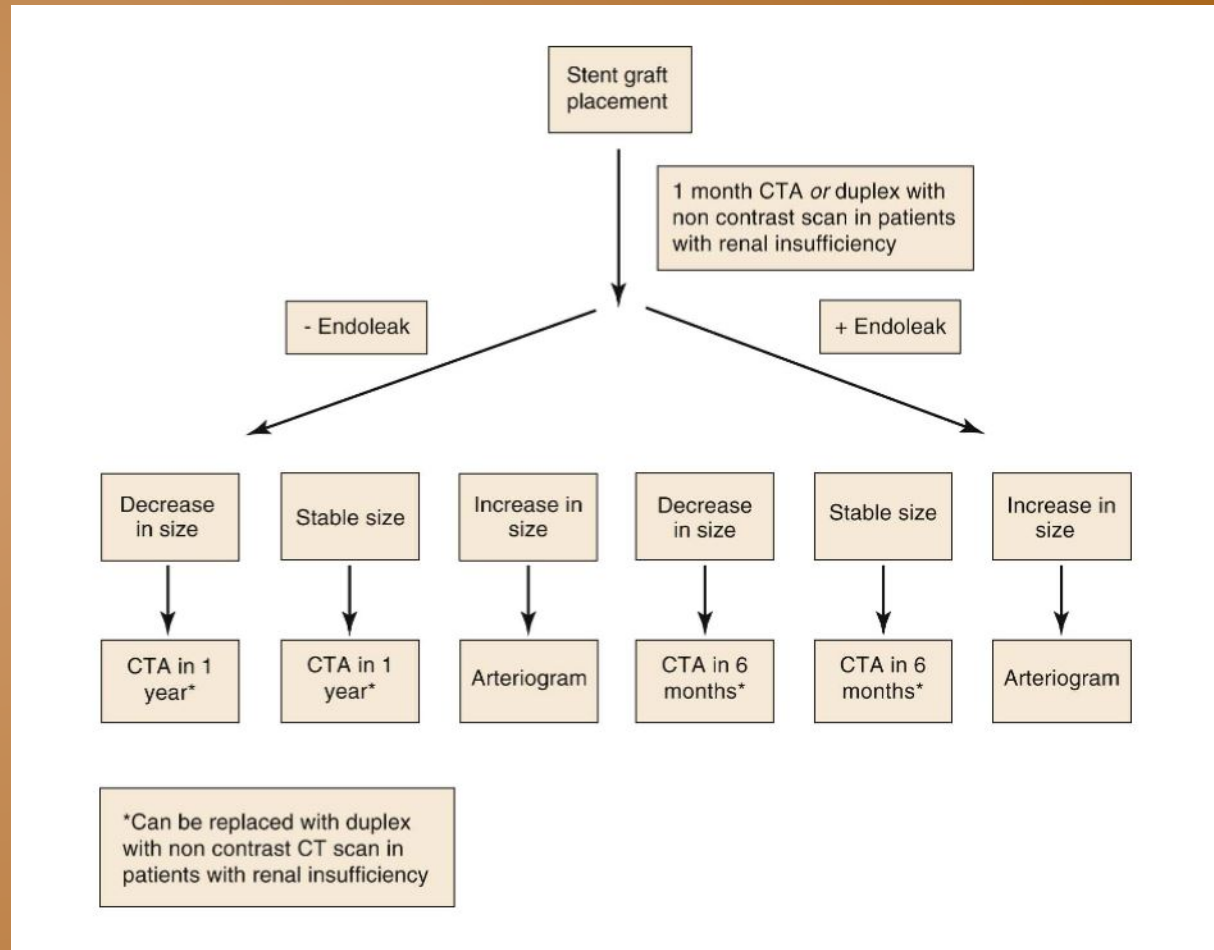


Type III



Type IV

Traitement endovasculaire des AAA





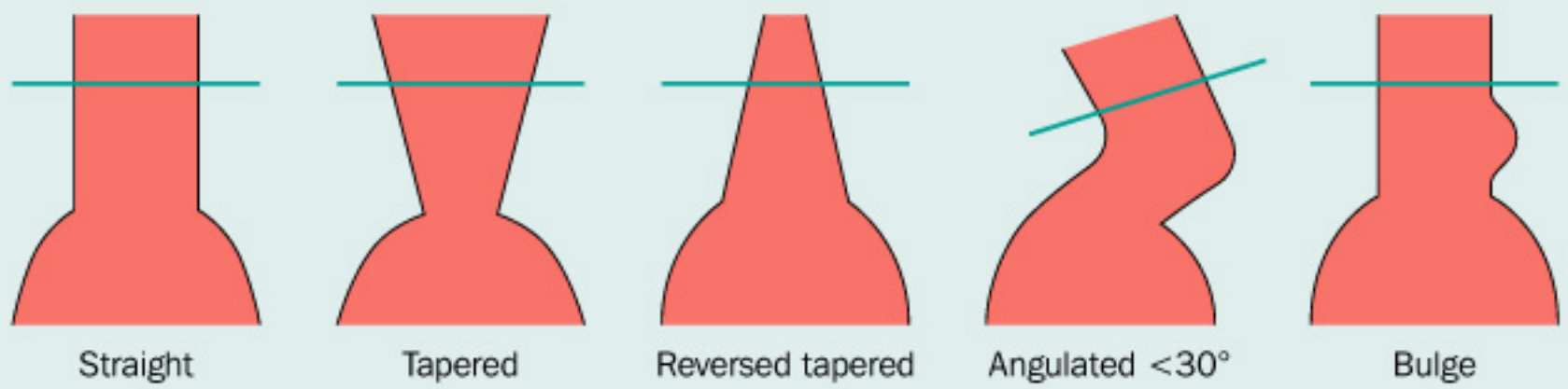
Traitement ouvert vs endovasculaire des AAA

Traitement ouvert ou endovasculaire des AAA

CHU de Bordeaux

Diameter and length measurements for AAA

Morphology of the proximal aortic neck



Hallett et al: Comprehensive Vascular and Endovascular Surgery © 2004 Elsevier Ltd.

- Lésions sténosantes



Hallett et al: Comprehensive Vascular and Endovascular Surgery © 2004 Elsevier Ltd.

Traitement ouvert ou endovasculaire des AAA

Meta-analysis

Systematic review and meta-analysis of the early and late outcomes of open and endovascular repair of abdominal aortic aneurysm

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¹Vascular Surgery Group, Department of Cardiovascular Sciences, University of Leicester, and ²Leicester National Institute for Health Research Cardiovascular Biomedical Research Unit, Leicester, UK

Correspondence to: Mr P. W. Stather, Vascular Surgery Group, Department of Cardiovascular Sciences, University of Leicester, Leicester LE2 7LX, UK (e-mail: pws7@le.ac.uk)

Br J Surg. 2013 Jun;100(7):863-72.

Traitement ouvert ou endovasculaire des AAA

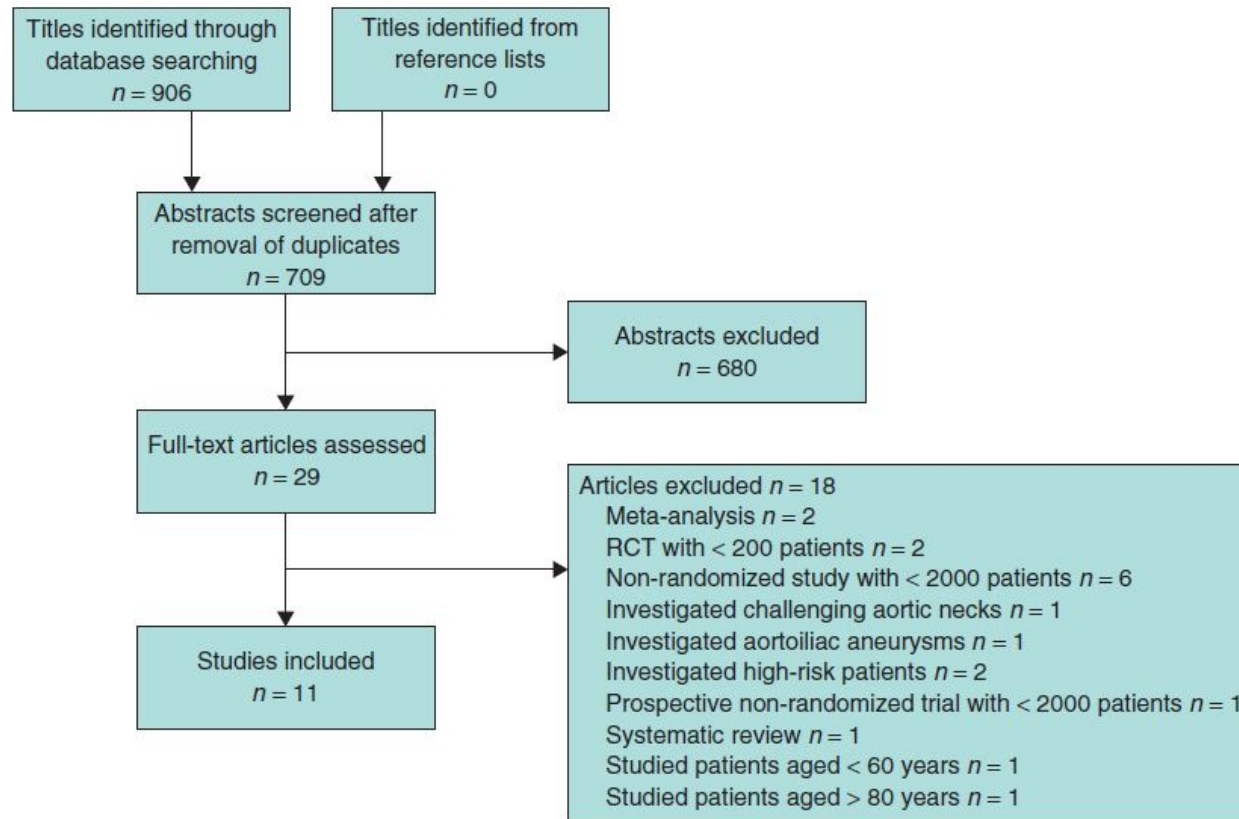


Fig. 1 PRISMA diagram of the review. RCT, randomized controlled trial

Traitement ouvert ou endovasculaire des AAA

Table 1 Studies included in meta-analysis of endovascular and open repair of abdominal aortic aneurysm

	Recruitment period	Year of publication	Study location	No. of subjects		Maximum length of follow-up (years)	Mean length of follow-up (years)	Study quality score
				EVAR	Open repair			
ACE ³³	2003–2008	2011	France	150	149	4.8	3.0	2 of 5
DREAM ^{2,34,35}	2000–2003	2004 2005 2010	The Netherlands	173	178	8.2	6.4	3 of 5
EVAR ^{1,36,37}	1999–2003	2004 2005 2010	UK	626	626	10.0	6.0	3 of 5
OVER ^{38,39}	2002–2007	2009 2012	USA	444	437	9.0	5.2	3 of 5
Medicare ⁹	2001–2004	2008	USA	22 830	22 830	> 5.0	–	8 of 9
SwedVasc ⁴⁰	1987–2005	2009	Sweden	855	2922	20.8	9.1	8 of 9

The Jadad score (maximum 5) was used to assess the quality of randomized controlled trials, and the Newcastle–Ottawa Scale (maximum 9) for non-randomized studies. EVAR, endovascular aneurysm repair; ACE, Anévrisme de l'aorte abdominale, Chirurgie *versus* Endoprothèse; DREAM, Dutch Randomized Endovascular Aneurysm Management; OVER, Open *Versus* Endovascular Repair; SwedVasc, Swedish National Registry for Vascular Surgery.

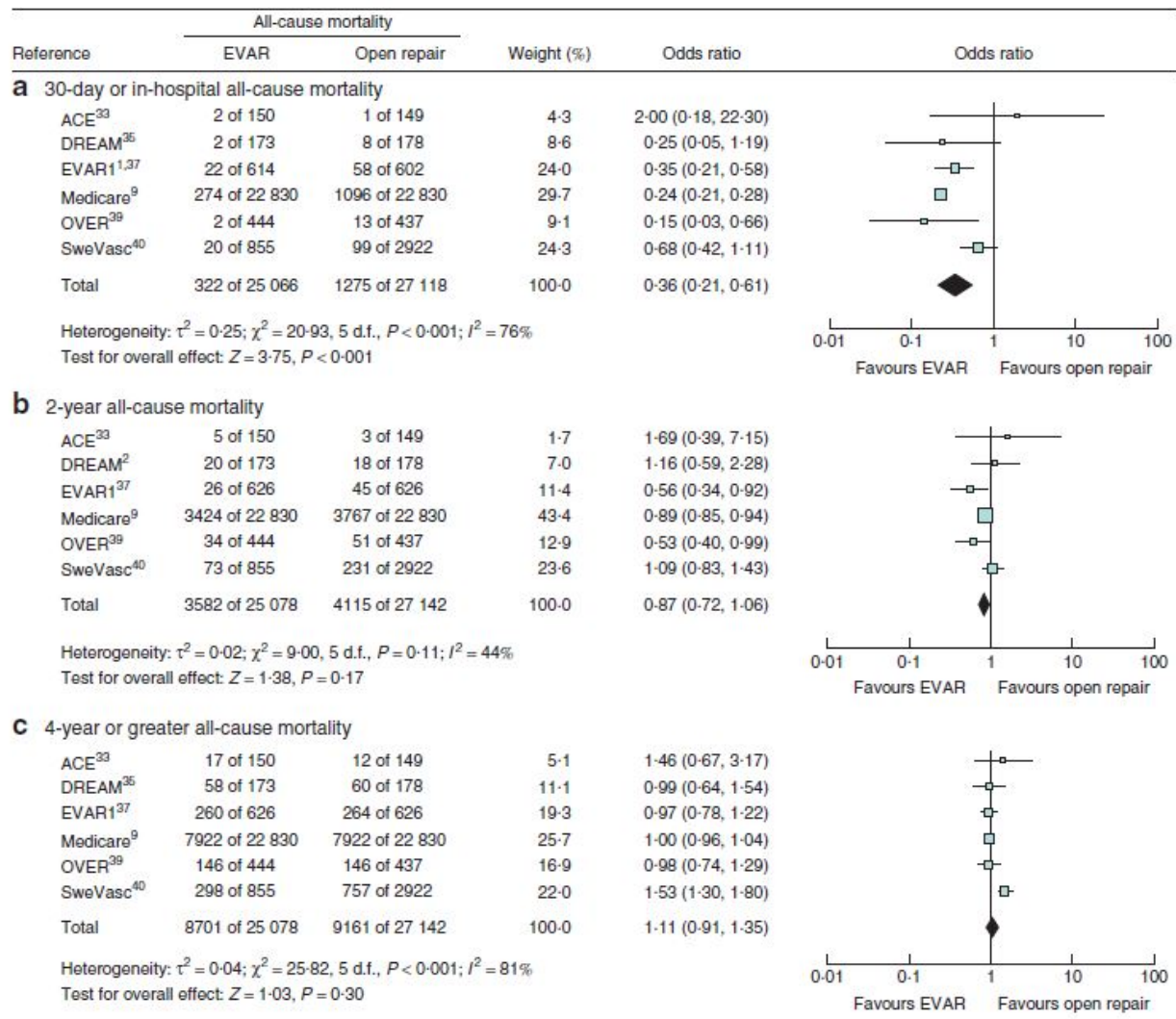


Fig. 2 Forest plot comparing all-cause mortality **a** 30 days or in hospital, **b** 2 years and **c** 4 years or more after endovascular aneurysm repair (EVAR) *versus* open repair. A Mantel–Haenszel random-effects model was used for meta-analysis. Odds ratios are shown with 95 per cent confidence intervals. ACE, Anévrisme de l'aorte abdominale, Chirurgie *versus* Endoprothèse; DREAM, Dutch Randomized Endovascular Aneurysm Management; OVER, Open *Versus* Endovascular Repair; SweVasc, Swedish National Registry for Vascular Surgery

Traitement ouvert ou endovasculaire des AAA

Table 2 Comparison of complication rates following endovascular or open abdominal aortic aneurysm repair, including and excluding non-randomized trials

	All studies				RCTs only			
	EVAR (%)	Open repair (%)	Odds ratio	<i>P</i>	EVAR (%)	Open repair (%)	Odds ratio	<i>P</i>
Myocardial infarction	6.8	9.2	0.73 (0.68, 0.78)	< 0.001	2.2	2.7	0.82 (0.41, 1.61)	0.56
Renal failure	5.3	10.4	1.05 (0.29, 3.76)	0.94	1.1	0.6	1.80 (0.45, 7.11)	0.40
Stroke	2.4	1.9	1.28 (0.76, 2.16)	0.36	2.4	1.9	1.28 (0.76, 2.16)	0.36
Reintervention	28.9	25.5	2.08 (1.27, 3.39)	0.003	26.2	14.0	2.46 (1.51, 4.01)	< 0.001
Rupture	2.0	0.3	5.94 (2.33, 15.14)	< 0.001	2.6	0.1	7.20 (1.00, 52.07)	0.05

Values in parentheses are 95 per cent confidence intervals. RCT, randomized controlled trial; EVAR, endovascular aneurysm repair.

Br J Surg. 2013 Jun;100(7):863-72.

Traitement ouvert ou endovasculaire des AAA

Conclusion: There is no long-term survival benefit for patients who have EVAR compared with open repair for AAA. There are also significantly higher risks of reintervention and aneurysm rupture after EVAR.

Br J Surg. 2013 Jun;100(7):863-72.

Réinterventions vasculaires et non vasculaires post chirurgie ouverte pour AAA

- 220 chirurgies pour AAA entre 2000 et 2011
- 28 (19 non vasculaires and 9 vasculaires) réinterventions sur 26 patients
- 26/220 – 11.8%



AAA rompu

AAA rompu

J Vasc Surg. 2013 Feb;57(2):368-75. doi: 10.1016/j.jvs.2012.09.003. Epub 2012 Dec 21.

Endovascular repair of ruptured infrarenal abdominal aortic aneurysm is associated with lower 30-day mortality and better 5-year survival rates than open surgical repair.

Mehta M¹, Byrne J, Darling RC 3rd, Paty PS, Roddy SP, Kreienberg PB, Taqqert JB, Feustel P.

⊕ Author information

Abstract

OBJECTIVE: Endovascular aneurysm repair (EVAR) decreases 30-day mortality for patients with ruptured abdominal aortic aneurysms (r-AAAs) compared with open surgical repair (OSR). However, which patients benefit or whether there is any long-term survival advantage is uncertain.

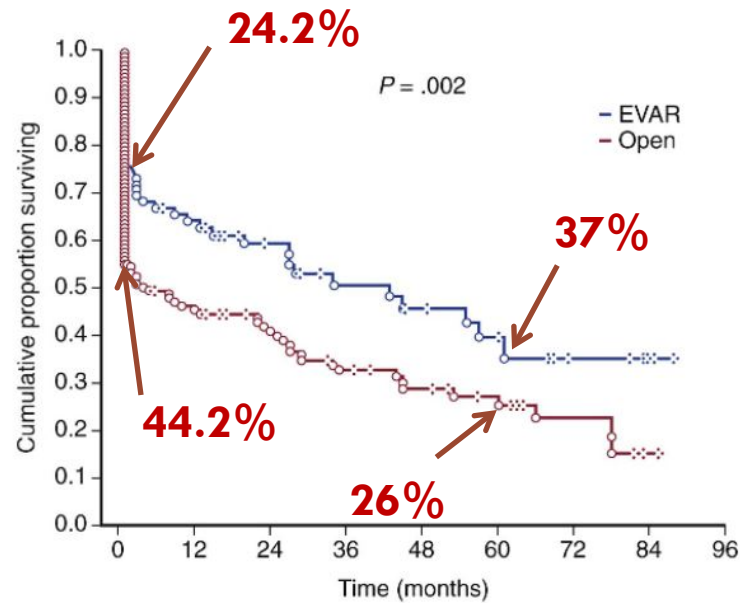
METHODS: From 2002 to 2011, 283 patients with r-AAA underwent EVAR (n = 120 [42.4%]) or OSR (n = 163 [57.6%]) at Albany Medical Center. All data were collected prospectively. Patients were analyzed on an intention-to-treat basis, and outcomes were evaluated by a logistic regression multivariable model. Kaplan-Meier analysis was used to compare long-term survival.

RESULTS: The EVAR patients had a significantly lower 30-day mortality than did the OSR patients (29/120 [24.2%] vs 72/163 [44.2%]; P < .005) and better cumulative 5-year survival (37% vs 26%; P < .005). Men benefited more from EVAR (mortality: 20.9% for EVAR vs 44.3% for OSR; P < .001) than did women (mortality: 32.4% vs 43.9%; P = .39). Age ≥80 years was a significant predictor of death for EVAR (odds ratio [OR], 1.07; P = .003) but not for OSR (OR, 1.04; P = .056). Preexisting hypertension was a significant predictor of survival for both EVAR (OR, 0.17; P < .001) and OSR (OR, 0.48; P = .021). Almost one fourth of EVAR patients (21/91 [23.1%]) required secondary interventions. Survival advantage was maintained for EVAR patients to 5 years.

CONCLUSIONS: For r-AAA, EVAR reduces the 30-day mortality and improves long-term survival up to 5 years. However, whereas open survivors require few graft-related interventions, up to 23% of EVAR patients will require reintervention for endoleaks or graft migration. Close follow-up of all EVAR survivors is mandatory.

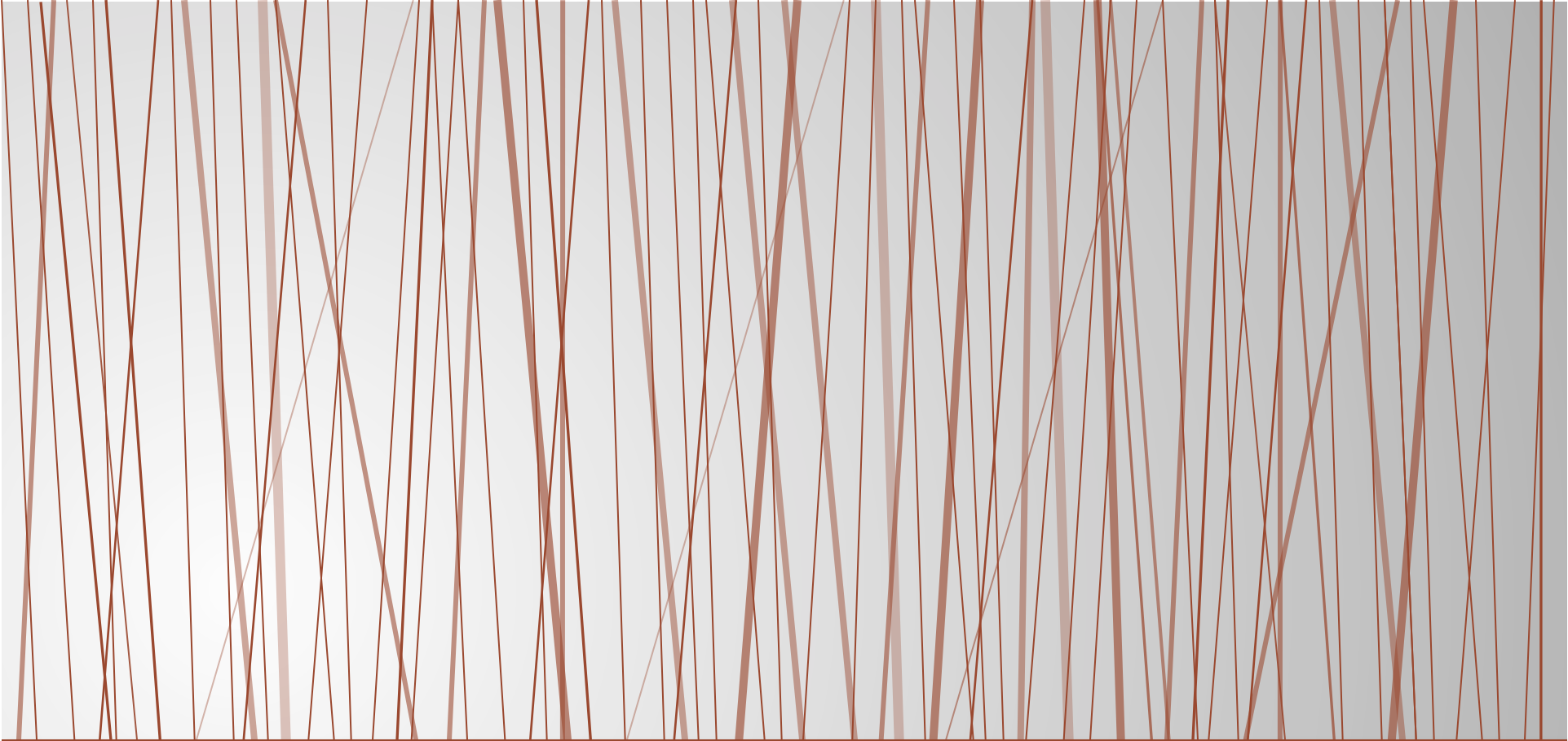
Copyright © 2013 Society for Vascular Surgery. Published by Mosby, Inc. All rights reserved.

AAA rompu



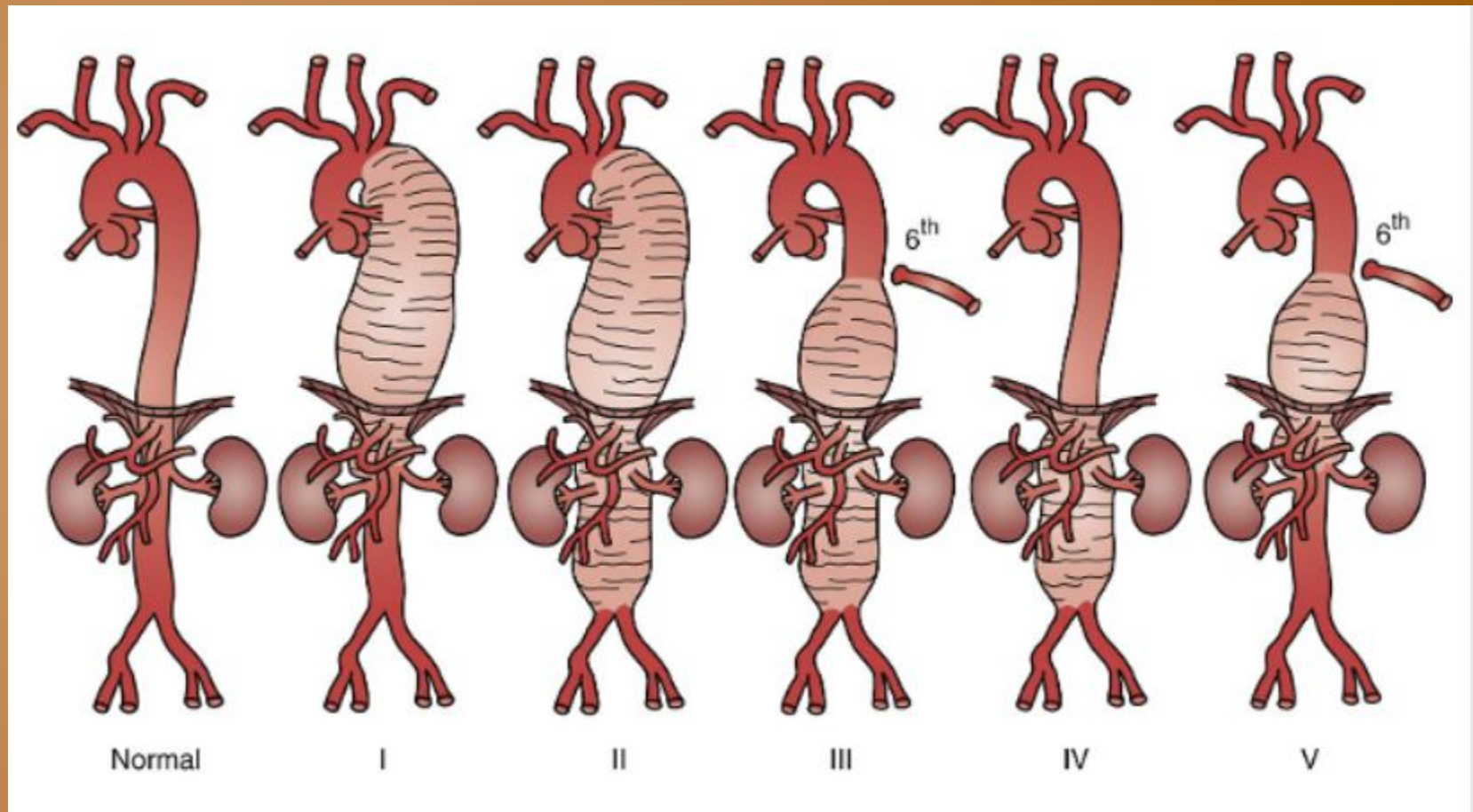
Interval Start	0	12	24	36	48	60	72	84
EVAR								
Number Entering	120	44	28	21	16	11	5	3
Cum. Prop. Surviving	1.00	0.62	0.57	0.48	0.43	0.37	0.33	0.29
Std. Err. Cum. Surv.		0.05	0.05	0.06	0.06	0.07	0.07	0.08
Open								
Number Entering	163	56	43	30	21	14	6	1
Cum. Prop. Surviving	1.00	0.44	0.40	0.31	0.28	0.26	0.21	0.12
Std. Err. Cum. Surv.		0.04	0.04	0.04	0.04	0.04	0.05	0.06

CONCLUSIONS: For r-AAA, EVAR reduces the 30-day mortality and improves long-term survival up to 5 years. However, whereas open survivors require few graft-related interventions, up to 23% of EVAR patients will require reintervention for endoleaks or graft migration. Close follow-up of all EVAR survivors is mandatory.



Anévrismes de l'aorte thoracique et thoracoabdominal

Anévrismes de l'aorte thoracique et thoracoabdominal



Crawford classification of thoracoabdominal aortic aneurysms

Anévrismes de l'aorte thoracique et thoracoabdominal

Recommendations for Repair of Thoracic and Thoracoabdominal Aortic Aneurysms

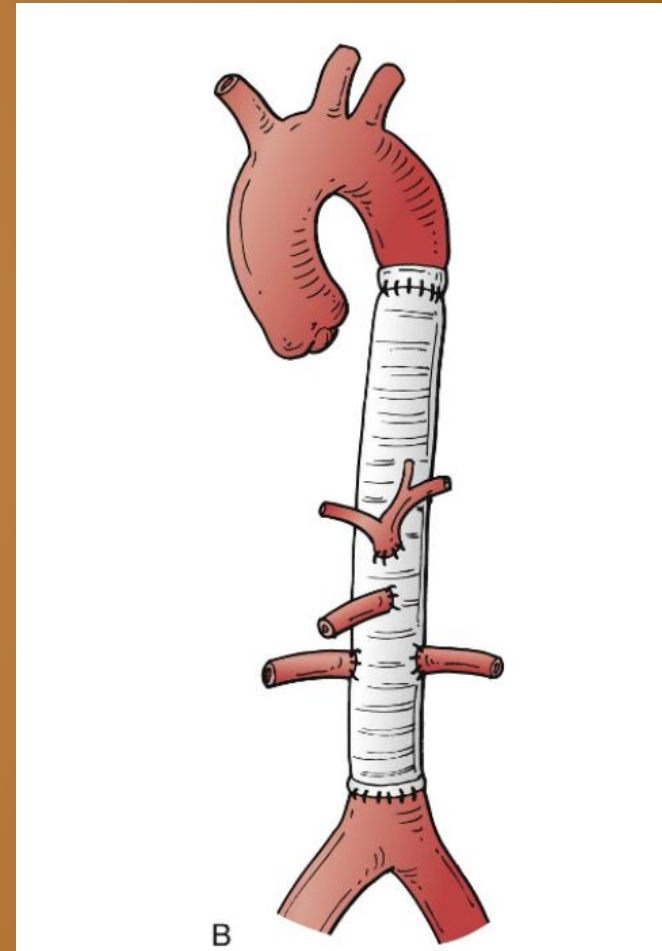
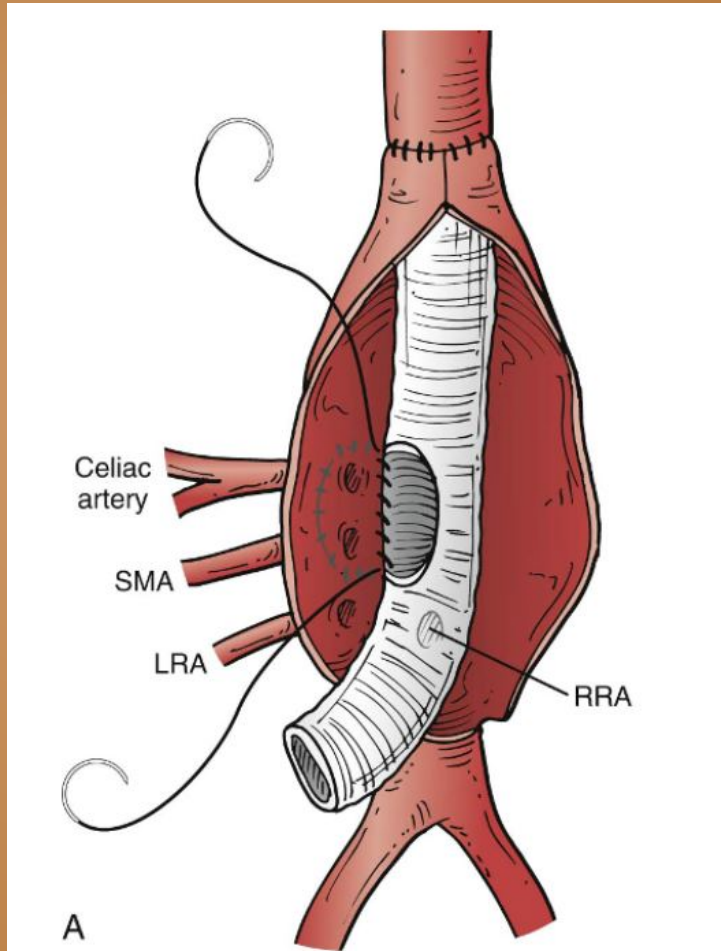
Class I

1. For patients with chronic dissection, particularly if associated with a connective tissue disorder, but without significant comorbid disease, and a descending thoracic aortic diameter exceeding 5.5 cm, open repair is recommended. (*Level of Evidence: B*)
2. For patients with degenerative or traumatic aneurysms of the descending thoracic aorta exceeding 5.5 cm, saccular aneurysms, or postoperative pseudoaneurysms, endovascular stent grafting should be strongly considered when feasible. (*Level of Evidence: B*)
3. For patients with thoracoabdominal aneurysms, in whom endovascular stent graft options are limited and surgical morbidity is elevated, elective surgery is recommended if the aortic diameter exceeds 6.0 cm, or less if a connective tissue disorder such as Marfan or Loeys-Dietz syndrome is present. (*Level of Evidence: C*)
4. For patients with thoracoabdominal aneurysms and with end-organ ischemia or significant stenosis from atherosclerotic visceral artery disease, an additional revascularization procedure is recommended. (*Level of Evidence: B*)

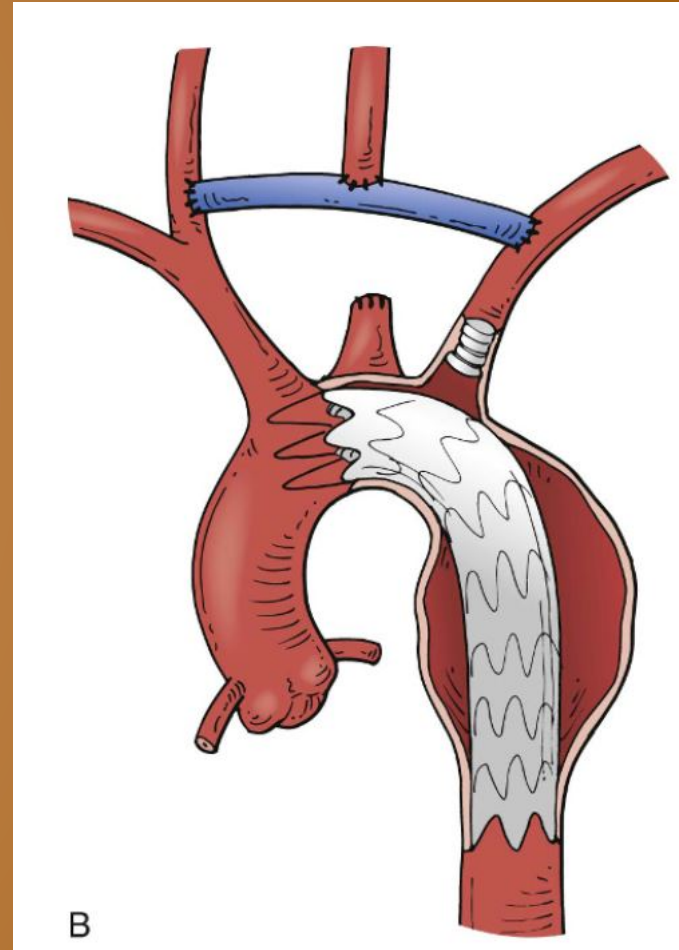
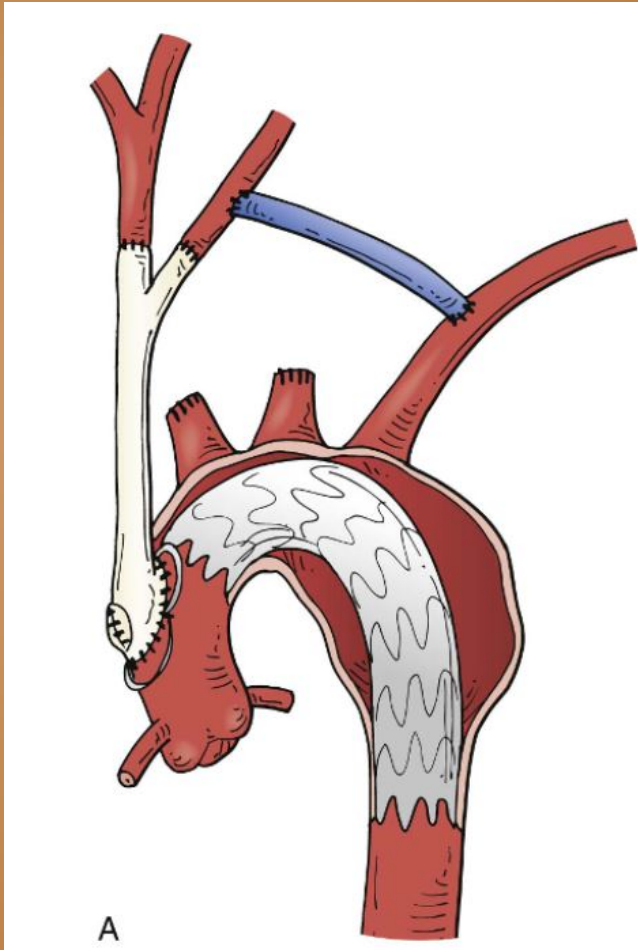
From Hiratzka LF, et al; Writing Group Members: 2010

ACCF/AHA/AATS/ACR/ASA/SCA/SCAI/SIR/STS/SVM guidelines for the diagnosis and management of patients with thoracic aortic disease: a report of the American College of Cardiology Foundation/American Heart Association Task Force on Practice Guidelines, American Association for Thoracic Surgery, American College of Radiology, American Stroke Association, Society of Cardiovascular Anesthesiologists, Society for Cardiovascular Angiography and Interventions, Society of Interventional Radiology, Society of Thoracic Surgeons, and Society for Vascular Medicine. *Circulation* 121:e266-e369, 2010.

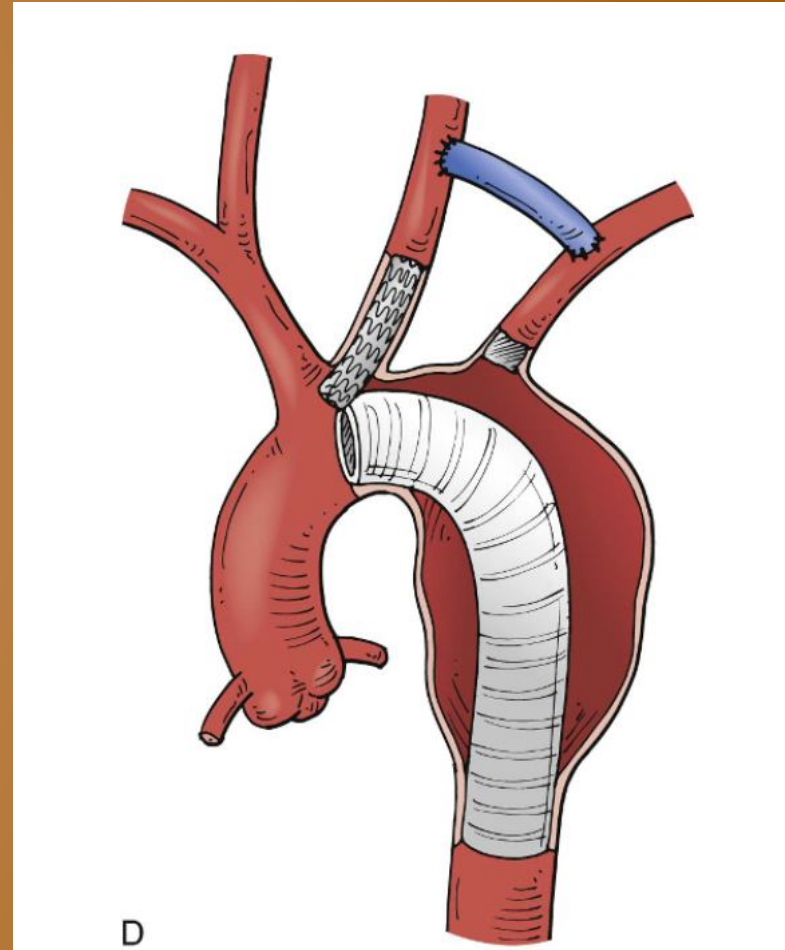
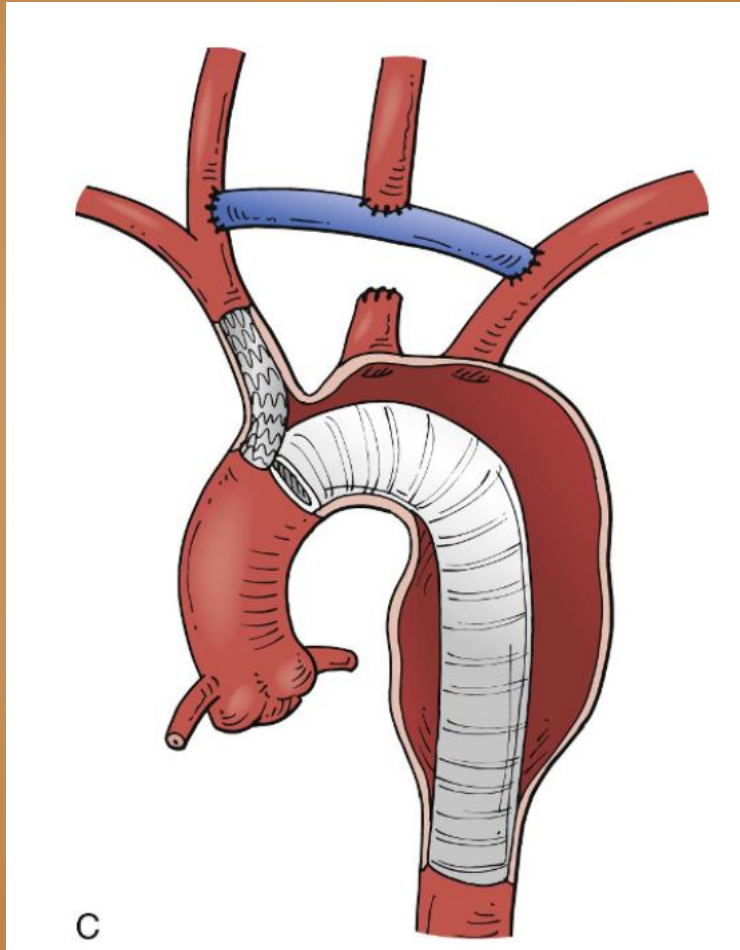
Anévrismes de l'aorte thoracique et thoracoabdominal



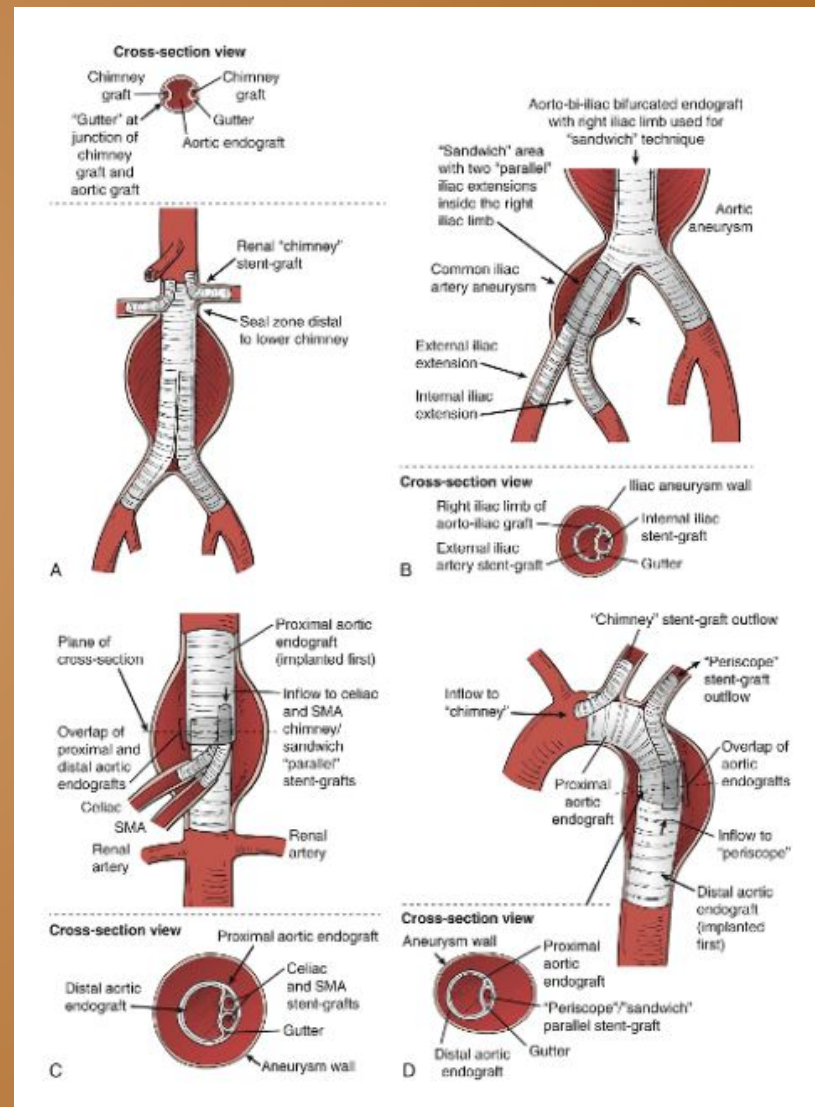
Anévrismes de l'aorte thoracique et thoracoabdominal



Anévrismes de l'aorte thoracique et thoracoabdominal



Anévrismes de l'aorte thoracique et thoracoabdominal



From the Society of Vascular Surgery

A propensity-matched comparison of early outcomes for fenestrated endovascular aneurysm repair and open surgical repair of complex abdominal aortic aneurysms

Maxime Raux, MD,^{a,b} Virendra I. Patel, MD, MPH,^b Frédéric Cochenec, MD,^a Shankha Mukhopadhyay, MS,^b Pascal Desgranges, MD, PhD,^a Richard P. Cambria, MD,^b

Conclusions: FEVAR, in this two-center study, was associated with a significantly higher risk of perioperative mortality and morbidity compared with OSR for management of CAAAs. These data suggest that extension of the paradigm shift comparing EVAR with OSR for routine AAAs to patients with CAAAs is not appropriate. Further study to establish proper patient selection for FEVAR instead of OSR is warranted before widespread use should be considered. (J Vasc Surg 2014;■:1-7.)

visceral clamp position) were propensity matched by demographic, clinical, and anatomic criteria to identify similar patient cohorts. Perioperative outcomes were evaluated using univariate and multivariate methods.

Results: From July 2001 to August 2012, 59 FEVAR and 324 OSR patients were identified. After 1:4 propensity matching for age, gender, hypertension, congestive heart failure, coronary disease, chronic obstructive pulmonary disease, stroke, diabetes, preoperative creatinine, and anticipated/actual aortic clamp site, the study cohort consisted of 42 FEVARs and 147 OSRs. The most frequent FEVAR construct was two renal fenestrations, with or without a single mesenteric scallop, in 50% of cases. An average of 2.9 vessels were treated per patient. Univariate analysis demonstrated FEVAR had higher rates of 30-day mortality (9.5% vs 2%; $P = .05$), any complication (41% vs 23%; $P = .01$), procedural complications (24% vs 7%; $P < .01$), and graft complications (30% vs 2%; $P < .01$). Multivariable analysis showed FEVAR was associated with an increased risk of 30-day mortality (odds ratio [OR], 5.1; 95% confidence interval [CI], 1.1-24; $P = .04$), any complication (OR, 2.3; 95% CI, 1.1-4.9; $P = .01$), and graft complications (OR, 24; 95% CI, 4.8-66; $P < .01$).

Conclusions: FEVAR, in this two-center study, was associated with a significantly higher risk of perioperative mortality and morbidity compared with OSR for management of CAAAs. These data suggest that extension of the paradigm shift comparing EVAR with OSR for routine AAAs to patients with CAAAs is not appropriate. Further study to establish proper patient selection for FEVAR instead of OSR is warranted before widespread use should be considered. (J Vasc Surg 2014;■:1-7.)



En résumé

En résumé : suivi

- Dépistage des ♂ ≥ 65 ans
- Dépistage des ♀ ≥ 65 ans fumeuses
- Histoire familiale AAA : ♂ 50 ans
♀ 60 ans } **À répéter après
5 ans si négatif**
- AAA entre 3 et 4 cm contrôle chaque année
- AAA $>$ de 4 cm contrôle aux 6 mois

En résumé : Quand référer?

- AAA 5 cm
- AAT ou AATA de 5.5 cm
- AAA, AAT, AATA avec ↑ de plus de 5 mm en 6-12 mois
- AAA inflammatoire
- Dans le doute...

Merci

