VASCULAR WORKSHOP
ROTORUA GP CME 2012

Murray A Cox
VASCULAR SURGEON
CMDHB

Asymptomatic Carotid Disease

- 80 yr old woman
- >70% stenosis Left ICA
- Asymptomatic
- Tolerating Statin / Antiplatelet therapy
- Heterogeneous / calcified plaque

NO WAY

Asymptomatic Carotid Disease

- 60 year old man
- >80% stenosis
- Asymptomatic
- On aspirin. Can’t tolerate Statin
- Echolucent plaque

MAYBE

Asymptomatic Carotid Stenosis ACST / ACAS trials

Showed almost exactly the same results
60 – 99% stenosis asymptomatic

ACAS	
BMT	CEA
11%	5.1%

Degree of stenosis is not a good correlate of risk of CVA

Asymptomatic Carotid Stenosis ACST / ACAS trials

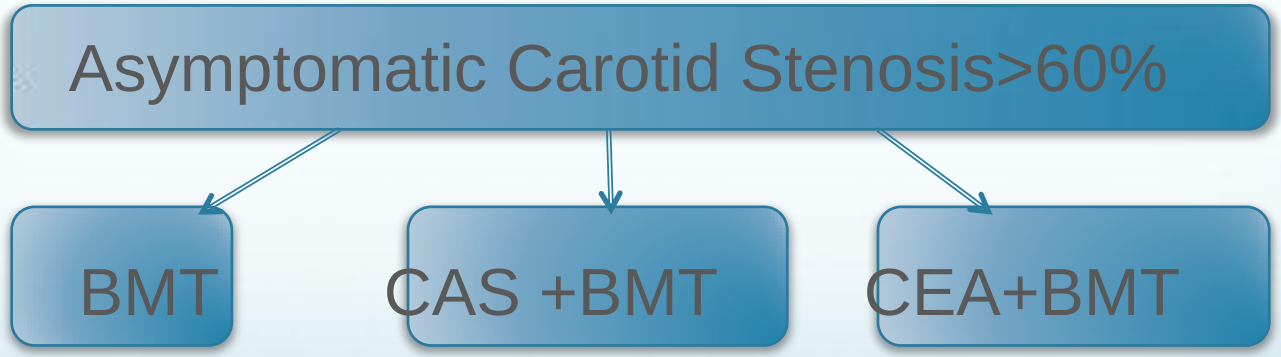
ACST	BMT	CEA
CVA (all)	11.8%	6.4%
Major CVA	6.1%	3.5%
Men < 75	10.6%	2.4%

(Probably similar benefits in women once the perioperative period is finished)

Asymptomatic Carotid Surgery

NNT – overall 20
Major problem with trials compared with modern day management
Best Medical Therapy (BMT) did not include Statin therapy in the vast majority of patients

- Need a new trial



(Possibly difficult to recruit because of pecuniary reasons. Surgeons/ interventionists don't want to discover there is no benefit)

Symptomatic Carotid Disease

- 75 yr old male
- Right sided hemiparesis lasting 20 mins
- Hypertension BP 160/90 mmHg
- Diabetes controlled Hb1Ac 6.5%

ABCD Scoring System – Prediction of Risk of Stroke

TABLE. **Criteria and Points of the ABCD^2 Scoring System[a]**

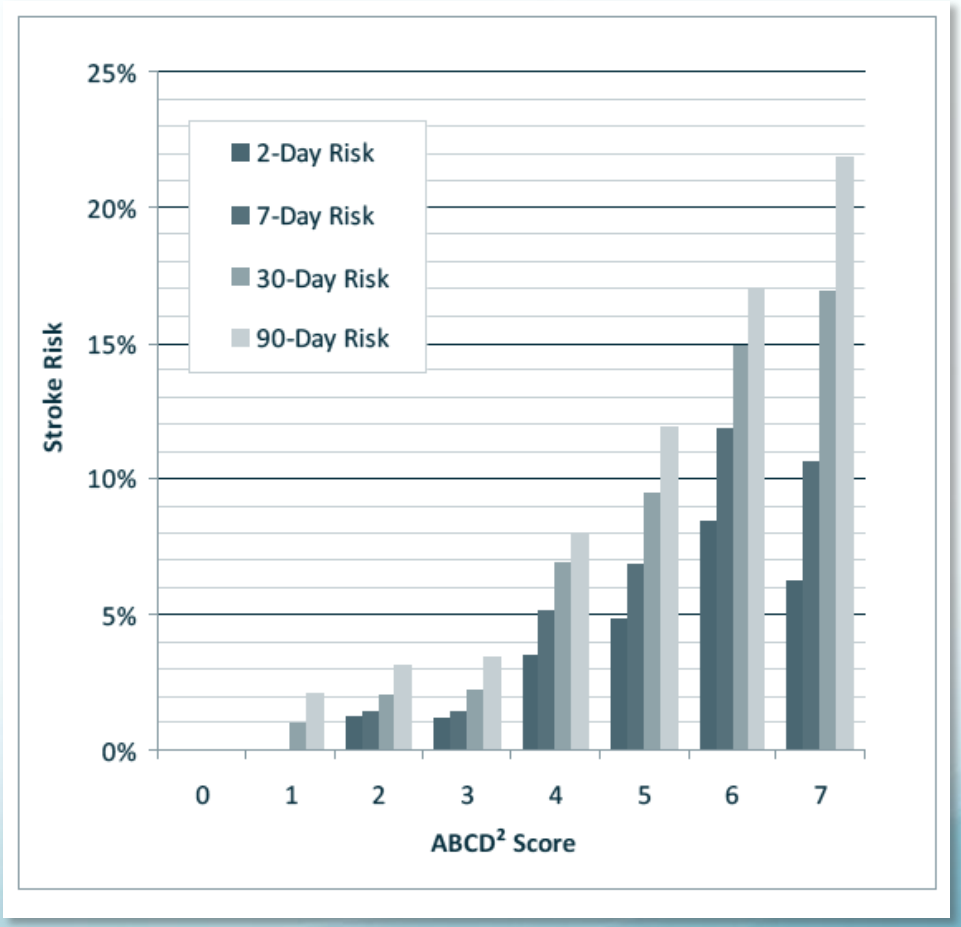
Factor	Points
Age ≥60 y	1
Blood pressure ≥140/90 mm Hg	1
Clinical features	
Unilateral weakness	2
Speech impairment without weakness	1
Duration of transient ischemic attack	
≥60 min	2
10-59 min	1
Diabetes mellitus	1

[a] ABCD^2 is an acronym for the 5 factors of the scoring system.[10]

Stroke. 2006 Dec;37(12):2892-7

ABCD Scoring System – Prediction of Risk of Stroke

ABCD^2 Score	2-day Stroke Risk	Hospital Admission
0-3	1.0%	Unnecessary unless other indication
4-5	4.1%	Justified for most
6-7	8.1%	Worthwhile



[1] Johnston SC, Rothwell PM, Huynh-Huynh MN, Giles MF, Elkins JS, Sidney S, "Validation and refinement of scores to predict very early stroke risk after transient ischemic attack," *Lancet*, 369:283-292, 2007.

Lancet, 369:283-292, 2007.

Symptomatic Carotid Disease
NASCET / ECST

> 70%	↓ 15.3% ARR	NNT 6
50–69%	↓ 7.8% ARR	NNT 12
< 50%	NO ADVANTAGE	

CMAJ. 2002 Apr 30;166(9):1169-79

Symptomatic Carotid Disease NASCET / ECST

ISSUES:

- BMT was
  - Don’t smoke
  - Normotension
  - Aspirin
  - Reduce benefit of Surgery
- BMT now
  - Statins
  - Better antiplatelet therapy
  - Renin – Angiotensin blockade

Symptomatic Carotid Disease NASCET / ECST

But Also:

- Angiography → cause of some strokes
- BMT → makes surgery safer

- Previously accepted CVA rate → 5 – 8%
- Currently CVA rate → 2- 3%

- ↑ Benefit of Surgery

CMAJ. 2002 Apr 30;166(9):1169-79

Rothwell 2004 NASCET /ECST Trials
If >50% Stenosis

	NNT
Men	9
Women	36
>75	5
<65	18
<2/52	5
>12/52	125

>6/12 is considered asymptomatic

Cerebrovasc Dis. 2004;18(1):37-46

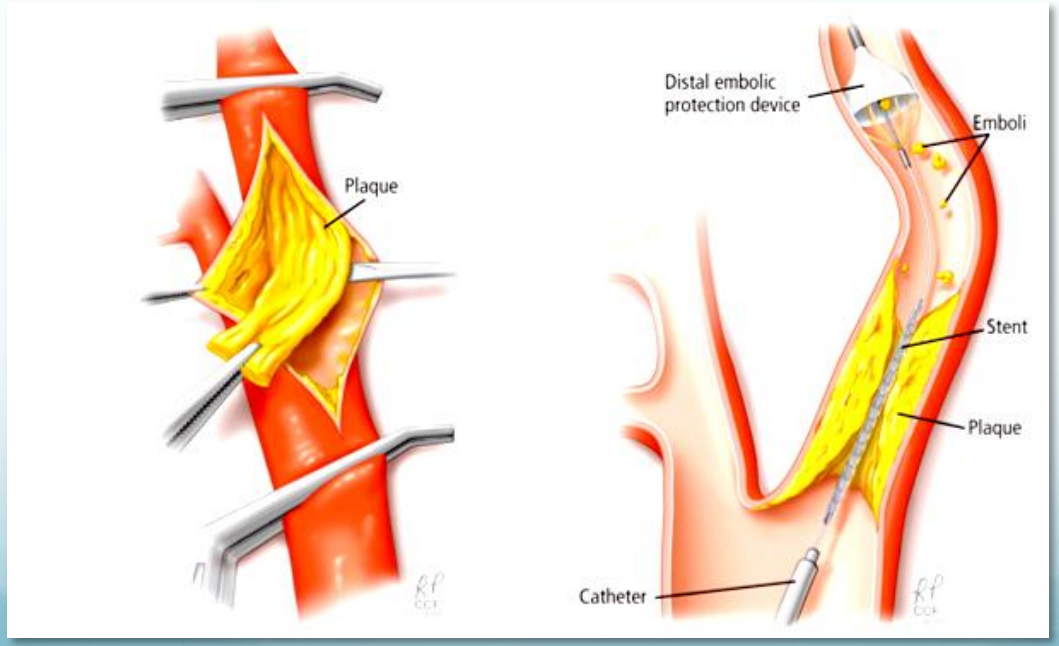
2008
Estimated that absolute reduction in CVA at 5 yrs if symptomatic lesion > 50%

< 2/52	18.5%	70% (25.5%)
2–4/52	9.8%	
4–12/52	5.5%	
>12/52	0.8%	

J Vasc Surg. 2008 Aug;48(2):480-6

Carotid Stents

- Endovascular Techniques continuously evolve with improved technology
- Initially stent trials showed significantly higher rates of CVA compared with CEA (10%)
- Cerebral protection devices were developed and it was thought this would make stenting safer



Carotid Stents

- CAVATAS II
- EVA 3S
- SPACE

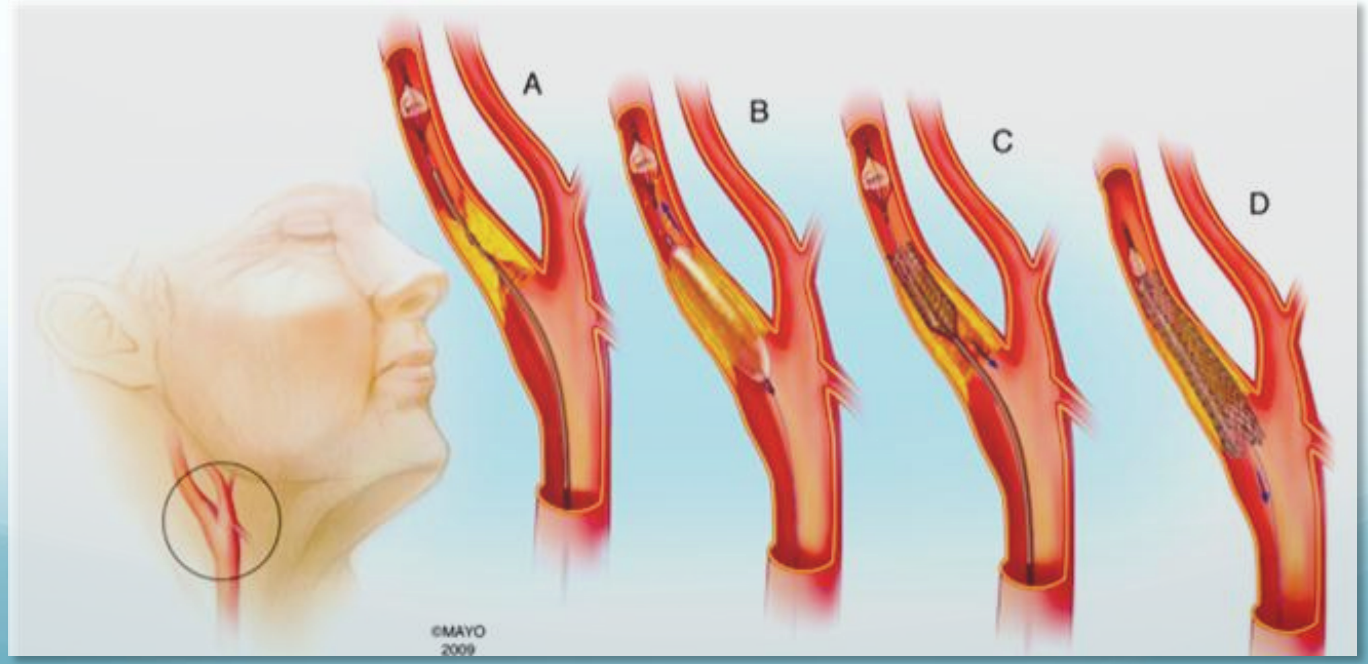
FAVOURED CEA

- CREST
- SAPPHIRE

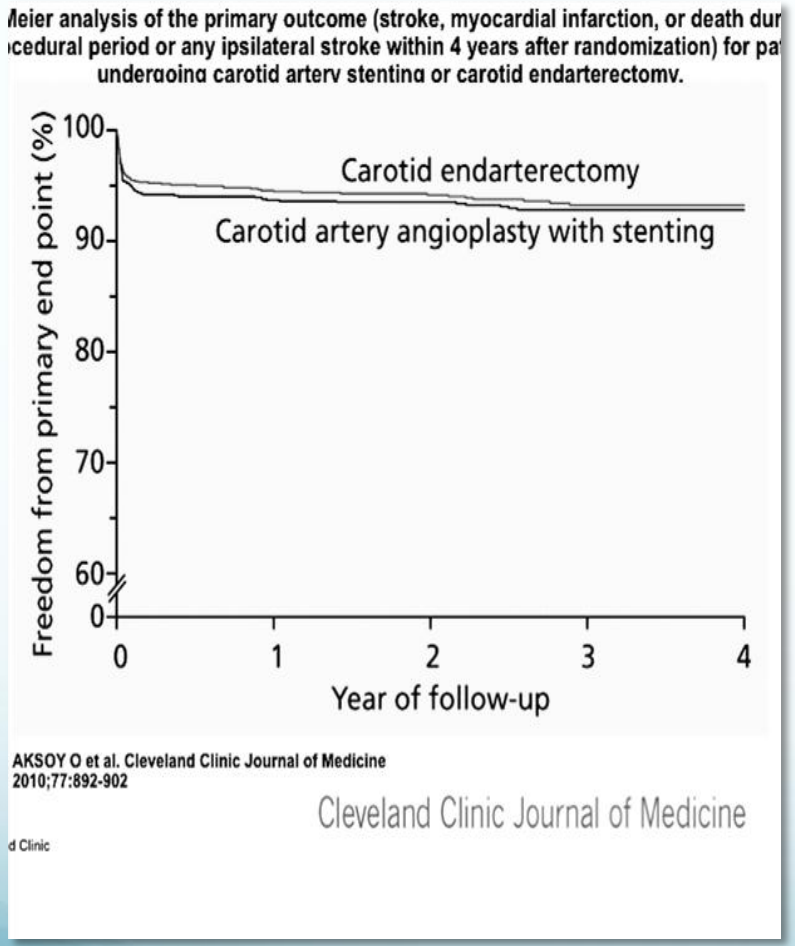
MI + CVA

>CVA with stenting
CVA >impact on QoL

70% were asymptomatic



CEA compared to CAS



CREST	CAS	CEA
1º Endpoint 4yrs	7.2	6.8
Periprocedural CVA	4.1	2.3
Periprocedural major	0.9	0.6
Periprocedural MI	1.1	2.3
Ipsilateral CVA 30/7 – 4 yrs	2.0	2.4

Cleve Clin J Med. 2010 Dec;77(12):892-902

My approach

- **First line Therapy CEA**
- Results with CAS still good enough that if CEA carries with it significant difficulty / risk CAS is an acceptable alternative

•Not clear how soon the stenting was performed
•CAS requires lifelong duplex follow-up
•CAS requires dual antiplatelet therapy for 6/52
•CEA is not considered ‘high risk’ from an anesthetist point of view
•Good levels of BMT In CREST trial

Best Medical Therapy: Statins

- HMG CoA Reductase Inhibitors
  - ↳ cholesterol

Multiple Pleiotropic Effects

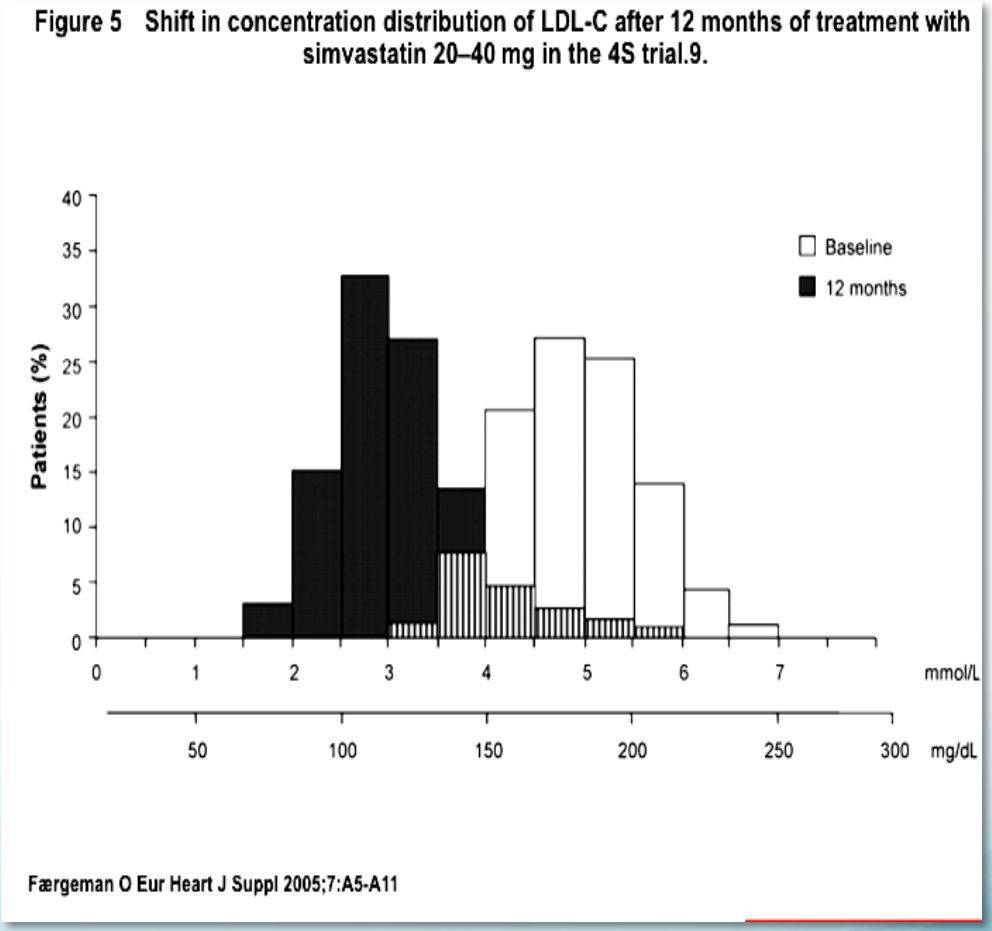
- •Anti inflammatory
- •Anti platelet
- •Anti fribrinolysis
- •Plaque Stabilising

4S Trial

- 4444 pts with CAD + raised cholesterol randomized to SIMVA / no SIMVA:
  - 30% RRR
  - 8.5% 5.0%

Treat 100 patients for 6 yrs will prevent:

- 4 deaths
- 7 non-fatal MI's



Eur Heart J Suppl 2005;7:A5-A11

British Heart Protection Study

	Sinva 40	Placebo
All case mortality	12.9	14.7
Nonfatal MI	8.7	11.8
CVA	4.3	5.7

- No increase in CA
- No increase in suicide
- No improvement in osteoporosis
- Does cause myalgia

- 20,586 pts
- Cholesterol > 3.5 mmol

Lancet. 2011 Dec 10;378(9808):2013-20

Statins - Myalgia

- Myalgia
  - Often proximal muscle groups and lower back
  - No rise in CK
  - Can occur up to 3 yrs after starting a Statin
- Myopathy
  - Increase >10x CK levels without symptoms
- Rhabdomyolysis – (muscle cell destruction with altered renal function)
  - 1: 15 million
- Should have baseline CK
- If develop symptoms
  - Check thyroid function
  - Check CK
  - Stop Statin
  - Once resolved –
    - consider lower dose
    - consider alternative statin
    - If >10x increase stop

Statins – LFTs GREACE STUDY

- ALT in 10% - most return to normal with continued statin use
  - >3x in 1%
  - If elevated before start – probably NASH

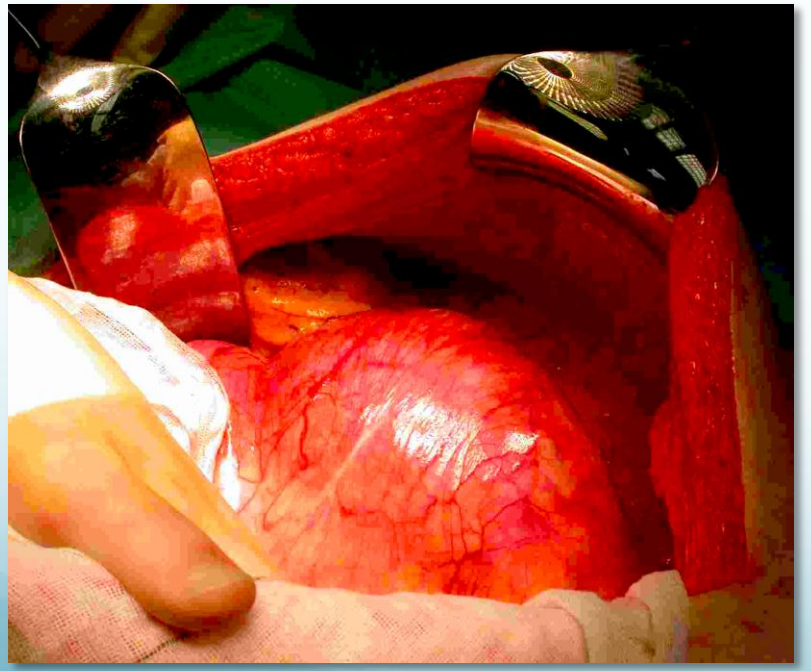
If <3x in ALT continue to give Statins
- More likely to improve ALT
- Less chance of significant worsening of LFTs
- Have greater CV benefit then in normal people

No consistent biopsy findings

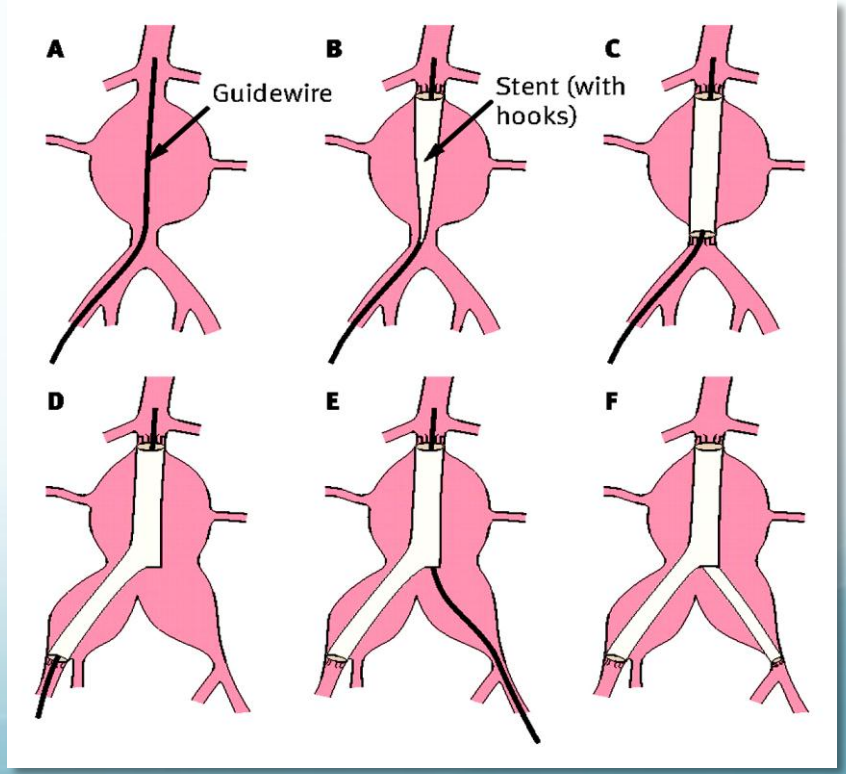
AAA MANAGEMENT FOR GP

- 70 year old male patient with 6cm infrarenal AAA
- Options for repair

Open



EVAR



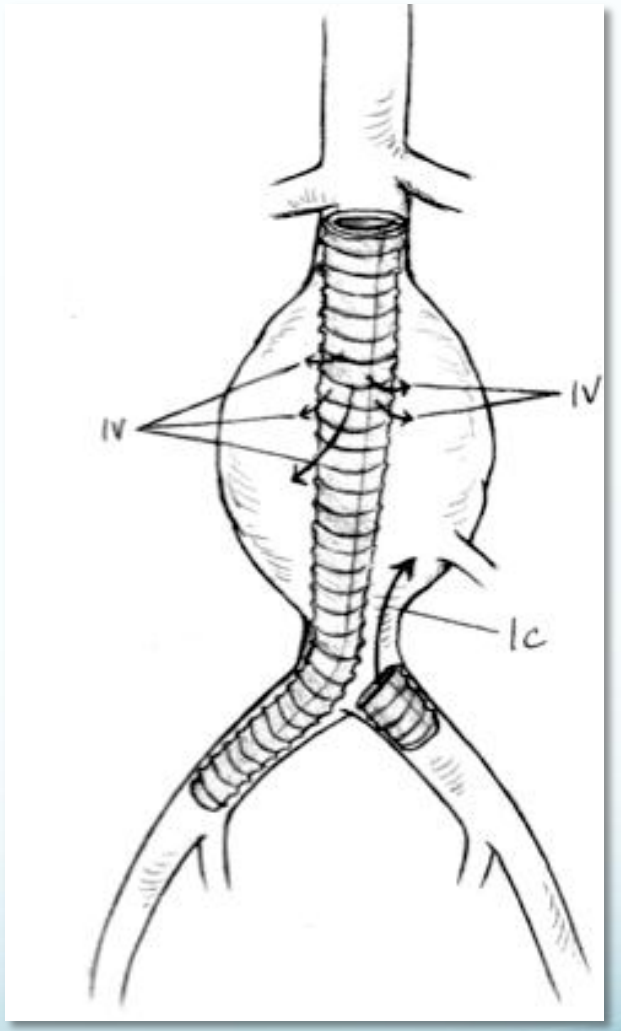
Pros and Cons of AAA repair

	OPEN	EVAR
Mortality	3%	1%
LOS	5-10/7	2-3/7
ICU / HDU	YES	NO
Physiological Insult	+++	+
Re-intervention Rate	2%	20%
Follow-up	6 weeks	Forever

Why Longterm Follow-up?

Endoleak

- As Aortic sac shrinks (or not)
- Graft Components can shift
- Intra-sac thrombus can move

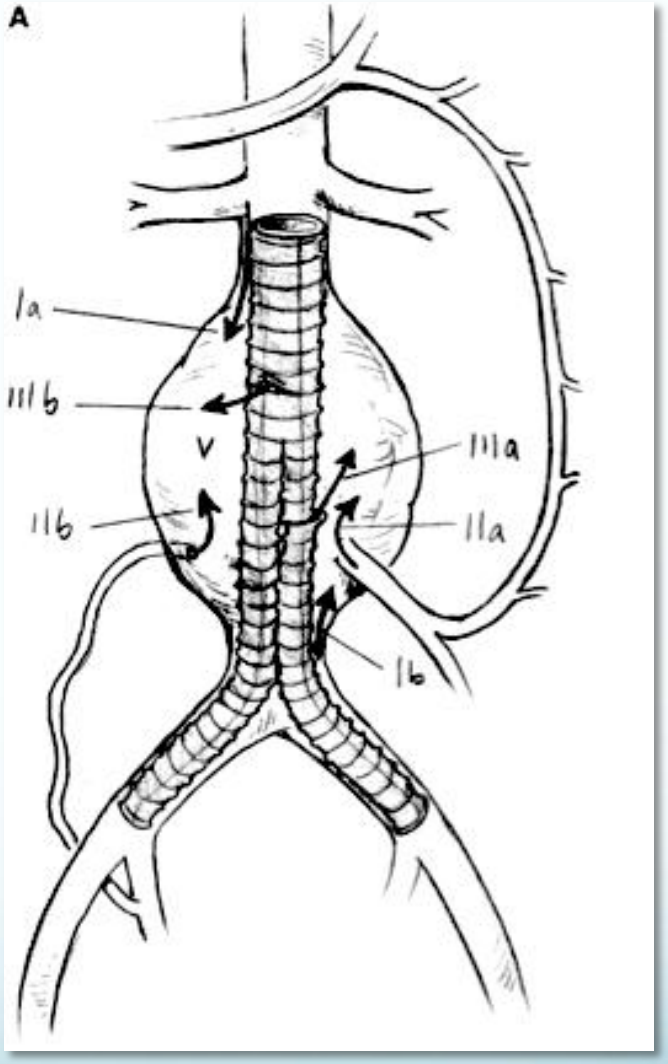


BMJ 2011;342:d1384

Endoleak

- Endoleaks develop
- Pressurize the sac putting it at risk of rupture

Rupture of sac has mortality similar to rupture of AAA



BMJ 2011;342:d1384

Management of small AAA

- Patient 70 yrs old with 4 cm infrarenal AAA

Arrange USS for 6/12

Or refer to Vascular service

Management small AAA

- Some evidence emerging that Best Medical Therapy leads to a decrease in the rate of growth of AAA
- All patients should be on:
  - Antiplatelet and Statin Therapy
  - Risk factor control

"All patients with AAAs have a high cardiovascular risk and warrant aggressive risk factor management, including smoking cessation"

Professor Matt Thompson
BMJ 2011; 342 doi: 10.1136

Symptomatic AAA

- 70 yr old man in your room with severe pain in :
  - Abdo
  - Back
  - Loin
  - Groin
  - Testicular
- Known AAA
- Bp 90/60 mmHg

What do you do?

Management symptomatic AAA

- Ring 111
- Lie patient down
- I.V. access
- Analgesia
- Put up fluids – but don’t try and resusitate

Permisive Hypotensive Resusitation

- Increase in Bp may increase Haematoma and destabilize the tamponading clot
- Don’t fluid resuscitate
- If the patient is talking and orientated the brain is perfused
- If the brain is perfused then the heart is perfused

Vascular. 2007 Jul-Aug;15(4):197-200

Indications for treatment of Varicose veins

- Cosmesis
- Pain / heaviness
- Fatigue
- Superficial thrombophlebitis
- Bleeding
- Ankle hyperpigmentation
- Lipodermatosclerosis
- Venous stasis ulcer

Classification and Treatment of Varicose Veins

Class	Size (mm)	Colour	Treatment
Telangectasia / spiders	0.1 - 1	Red	Sclerotherapy
Venulectasia	1 - 2	Violet	Compression stocking Surgical stripping Sclerotherapy Endovenous Ablation Radiofrequency Ablation
Reticular veins	2 - 4	Blue	
Nonsaphenous varicose	3 - 8	Blue	
Saphenous varicose	7 - 8	Blue	

Varicose Vein Treatment

- All of the various treatment modalities are effective in the management of the majority of varicose veins
- However not uncommonly one of the treatment modalities has clear advantages over the others
- It is my personal view that the various practitioners should acknowledge this, identify the individual cases and if they don’t provide that treatment modality either refer the patient on or at the very least, consent the patient appropriately

Venous ulcers

- Diagnosis
- Exam / Investigations
  - Pulse exam
  - Venous Duplex
  - Ankle Brachial Index
- Compression Therapy
  - Bandaging (if exudative)
  - Stockings graded compression

Once healed manage underlying venous incompetence

Venous Ulcers – Effectiveness of Compression

5/11/2009

26/01/2010