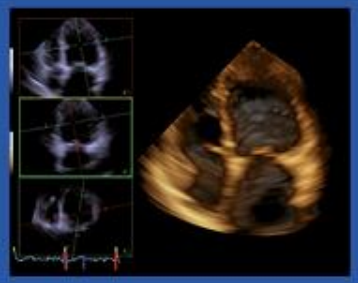


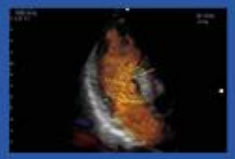
EuroValve

November 8-9, 2013

What is new in Infective Endocarditis

A patient with a large vegetation



EACVI

www.eurovalvecongress.com

Faculty Disclosure

Pilar Tornos

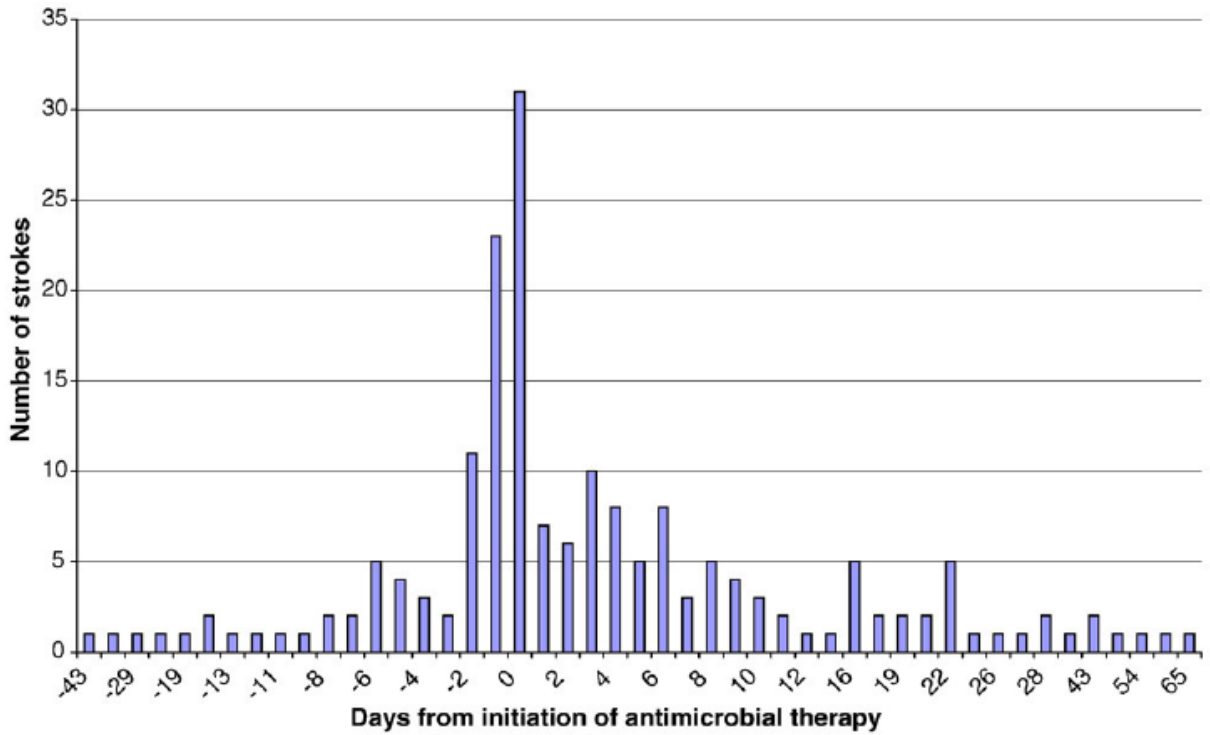
I have **no financial relationships** to disclose.

Large vegetation: Embolic risk

- Embolic events are frequent in IE occurring in 20-50% of patients.
- The risk of embolism is higher before AB and decreases after initiation of AB therapy.
- The risk of a new embolic event after initiation of antibiotic therapy is 6-21%.

- Predictors of embolism:
  - Vegetation size
  - Mobility of vegetations
  - Type of microorganism
  - Previous embolism

The relationship between the (Am Heart J 2007;154:1086-94.) **therapy and the incidence of stroke in infective endocarditis: An analysis from the ICE Prospective Cohort Study (ICE-PCS)**

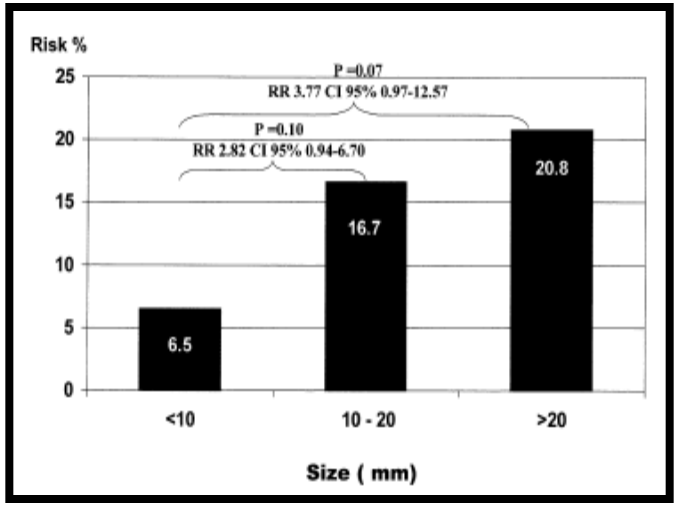


Daily incidence of stroke in ICE cohort.

Risk of embolization under therapy

207 IE, 28 (12.9 %) embolic events
factors associated with EE

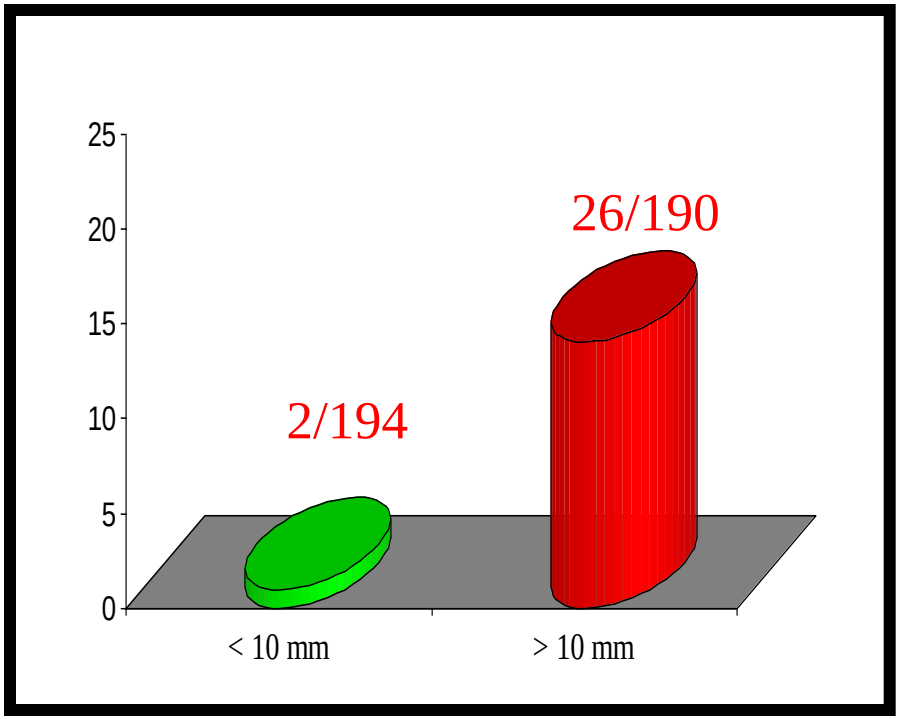
previous embolism (RR : 1.73)
vegetation size (RR: 3.77)
increasing vegetation size (RR: 2.64)

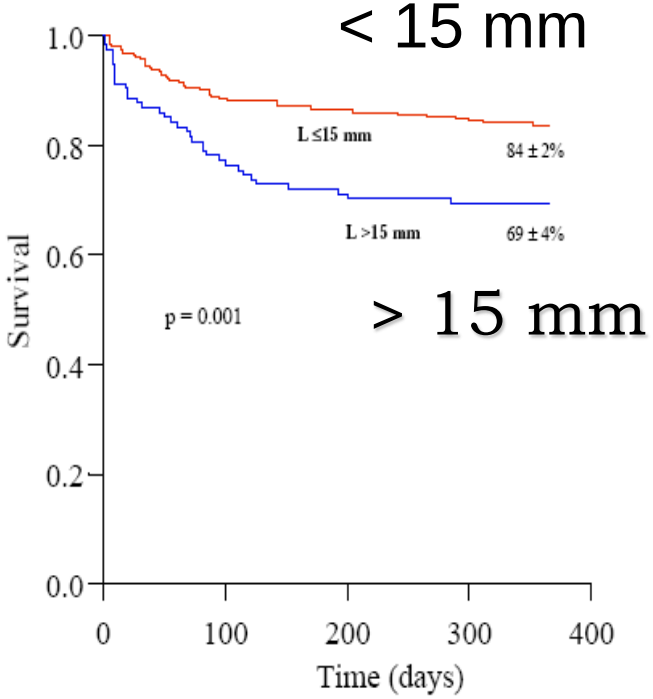


Vilacosta I – JACC 2002 ; 39 : 1489-95

Embolism under therapy

384 IE , multicentre European study
131 (34%) EE, 28 (7.3%) EE under therapy
20 (71.4%) during the first 15 days





F Thuny – Circulation 2005 : 112:69-75

59 year old man. No previous cardiac history. .Psiquiatric disease. On lithium therapy

1 month before admission he started with intermitent fever (up to 38ª), with general malaise. No other symptoms.

On admission:

Temperature 37.5ºC.
BP 120/70, regular cardiac rythm 70X'.
Sistolic murmur 3/6 radiating to the axilla.
No signs of heart failure.
No peripheral signs, no signs of liver or spleen enlargement.
Normal neurological examination

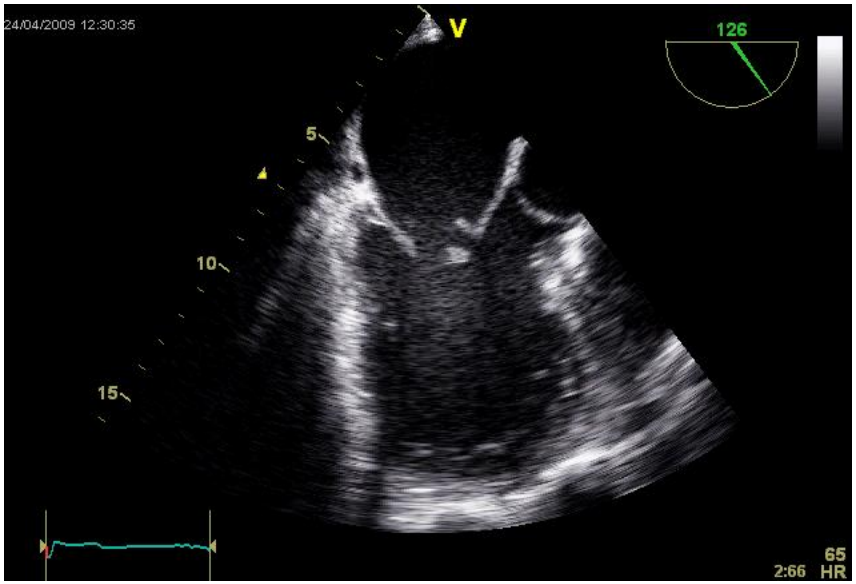
Examinations:

HB 11g/dl, white cell count 8100/mm3. ESR 73
Urea 40 mg/dl, creatinin 1.1 mg/dl
Total protein 7.5 mg/dl
Total colesterol 110 mg/dl

BLOOD CULTURES:

Streptococcus salivarius, sensitive to penicillin

Treatment as started with penicillin+gentamycin. Good response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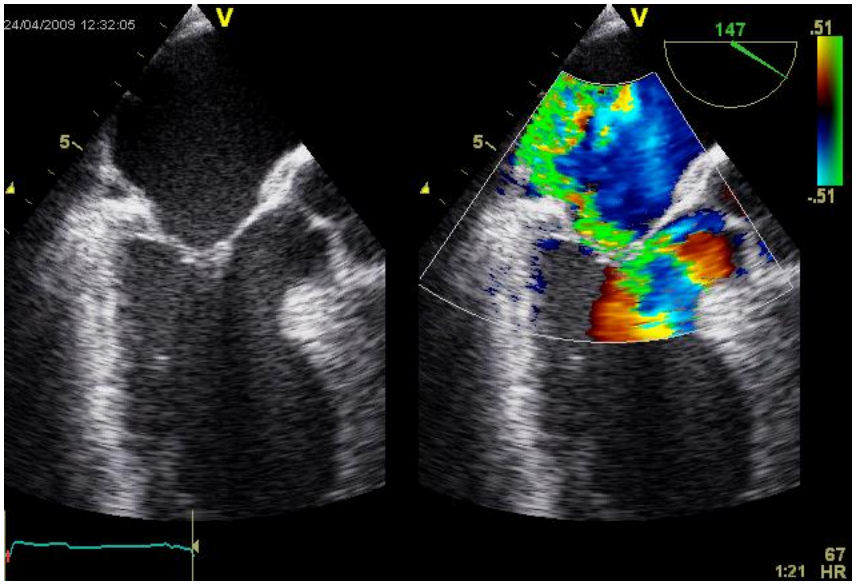
V
126
5
10
15
65
2:66 HR


24/04/2009 12:32:05
V
V
147
.51
-.51
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67
1:21 HR

What would you recommend??

1. RMI and valve surgery if a silent cerebral embolic event is discovered.

2. Brain and abdominal CT and valve surgey if silent embolic events are discovered.

3. Maintain AB and careful follow up.

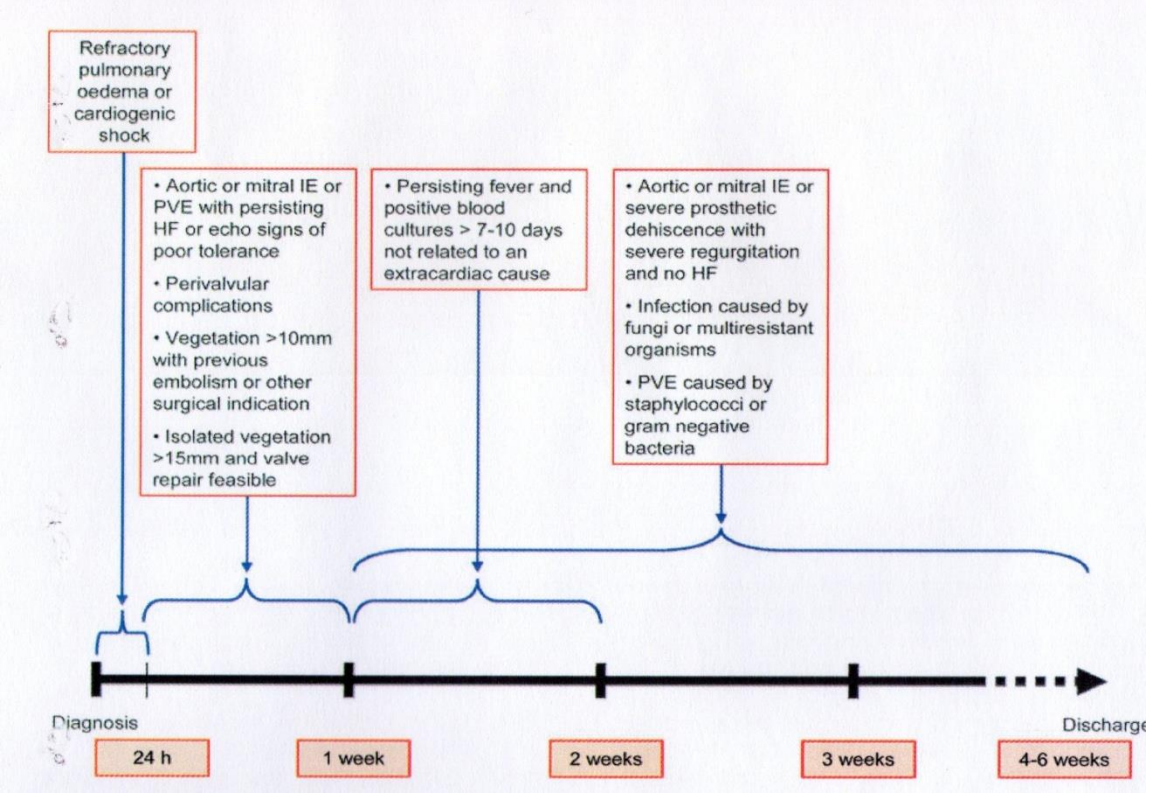
4. Urgent valve surgery.

Indications for surgery - Native IE

Recommendations: Indications for surgery	Timing	Class	Level
A. HEART FAILURE			
Aortic or mitral IE with severe acute regurgitation or valve obstruction causing refractory pulmonary oedema or cardiogenic shock.	Emergency	I	B
Aortic or mitral IE with fistula into a cardiac chamber or pericardium causing refractory pulmonary oedema or cardiogenic shock.	Emergency	I	B
Aortic or mitral IE with severe acute regurgitation and persisting HF or echo-cardiographic signs of poor hemodynamic tolerance (early mitral closure or pulmonary hypertension).	Urgent	I	B
Aortic or mitral IE with severe acute regurgitation and no HF.	Elective	IIa	B
B. UNCONTROLLED INFECTION			
Locally uncontrolled infection.	Urgent	I	B
Persisting fever and positive blood culture > 7-10 days.	Urgent	I	B
Infection caused by fungi or multiresistant organisms.	Urgent/elective	I	B
C. PREVENTION of EMBOLISM			
Aortic or mitral IE with large vegetations (>10 mm) following one or more embolic episodes, despite appropriate antibiotic treatment.	Urgent	I	B
Aortic or mitral IE with large vegetations (10 mm) and other predictors of complicated course (HF, persistent infection, abscess).	Urgent	I	C
Isolated very large vegetations (>15 mm).	Urgent	IIb	C

European Heart Journal (2009) 30:2369–2413

Timing of surgery in IE



Habib G, Heart 2010

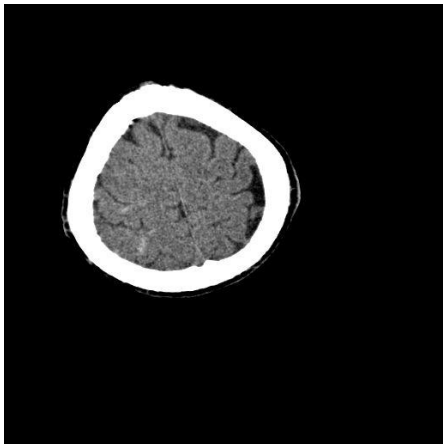
Vall d'Hebron Hospital

- Our patient was operated on day 10th of therapy. The rationale was that we considered that embolic risk was vey high and mitral regurgitation was severe.
- MV repair was attempted, no good results.
- MVR was performed.
- Uneventful clinical course.

43 year aold male, smoker and exIVDA, HIV and VCH positive
Admitted with sudden onset of sever headache, with fever in the preceeding days.

SUBARACHNOID HEMMORRHAGE



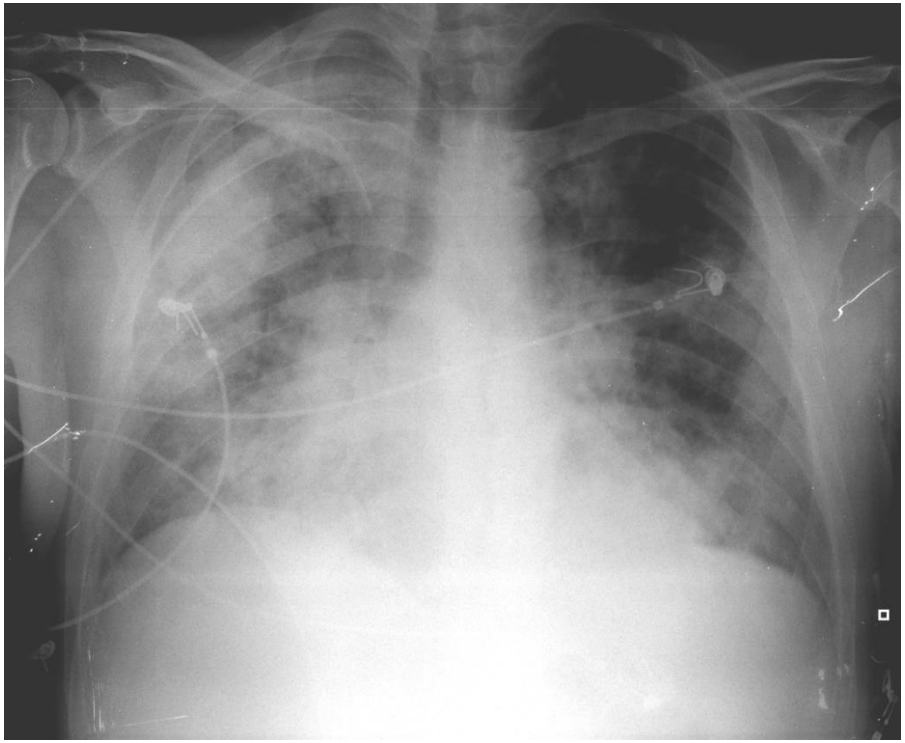


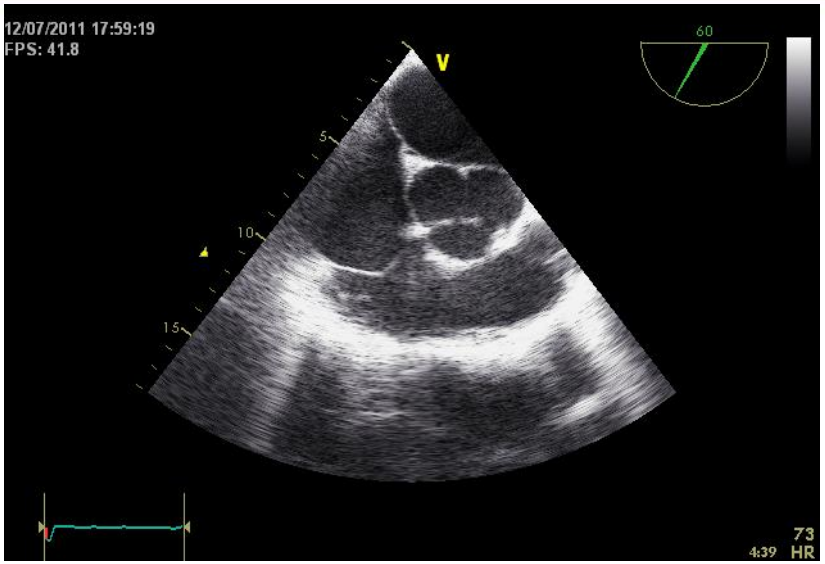
Angiography: aneurysm left internal carotid .
Embolization with coils.

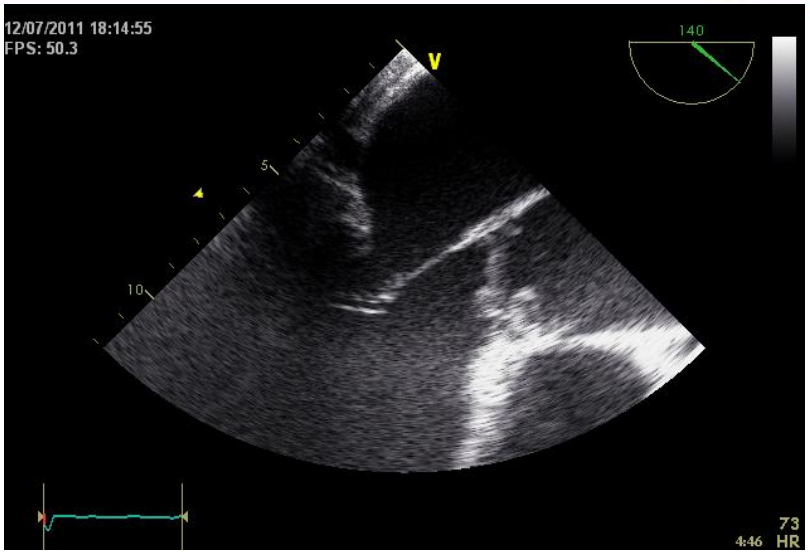
Next 24 hours severe respiratory insufficiency, high oxigen demands (FiO2 1) and elevated PEEP.

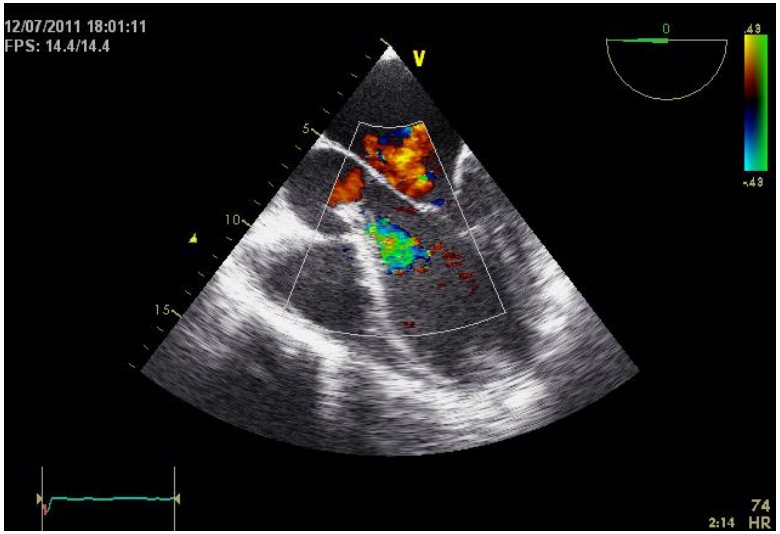
39ºC.

Blood cultures negative









IE on a bicuspid AV with large (12 mm) vegetations and severe AR.

EDD 59 m, EF 65%,ascendind aorta 49 mm

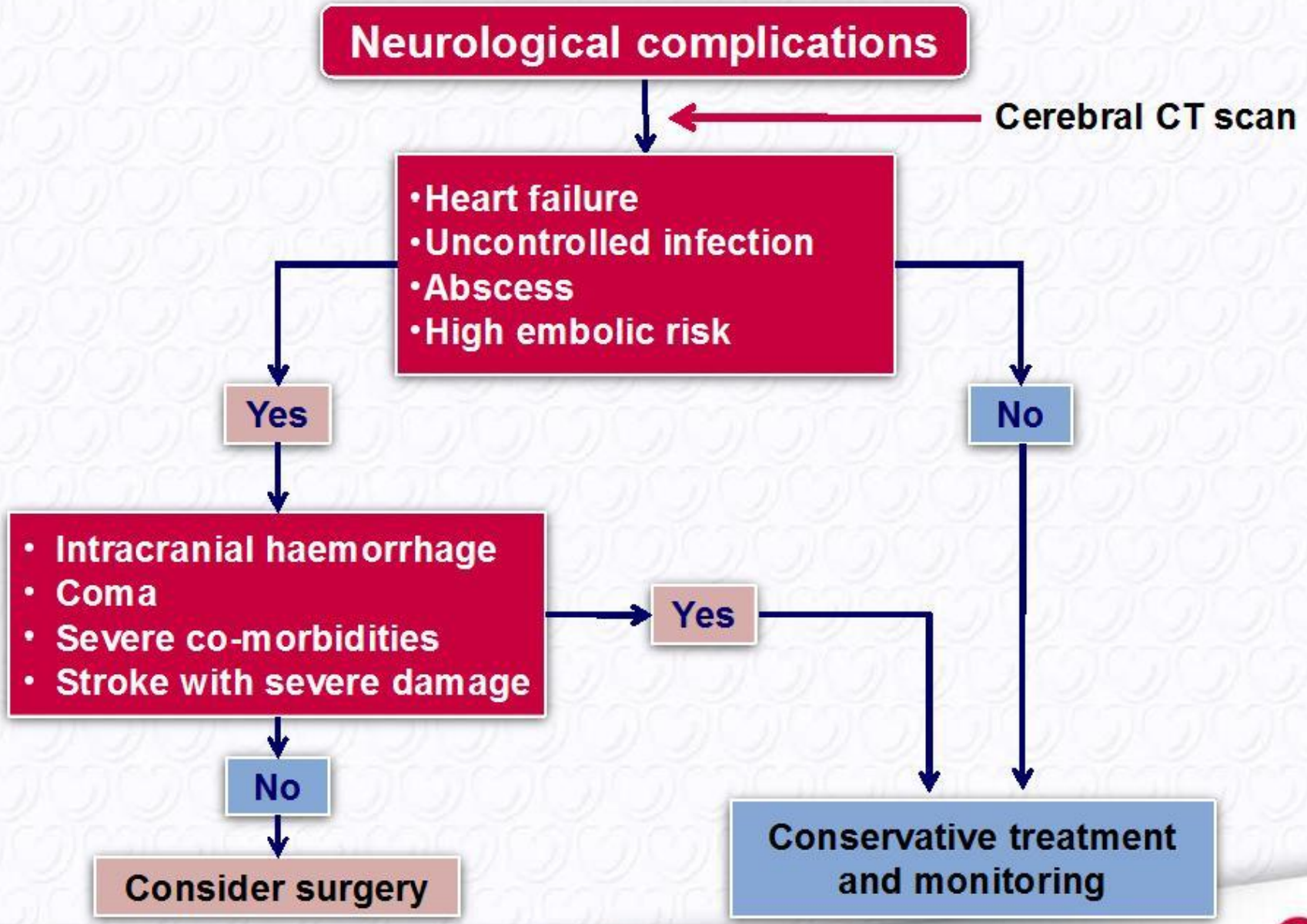
What would you recommend?

1. No valve surgery due to recent brain hemorrhage. AB treatment with ampicillin+gentamicin

2. No valve surgery due to recent brain hemorrhage. AB treatment with daptomicyn

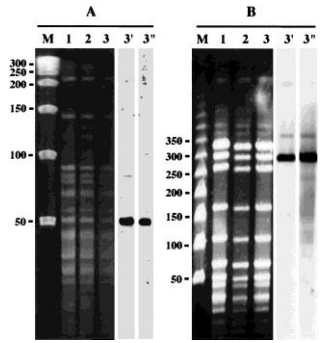
3. AB with daptomycin.Valve surgery postposed for 4 weeks of AB

4. AB and immediate sugery



European Heart Journal (2009) 30:2369–2413

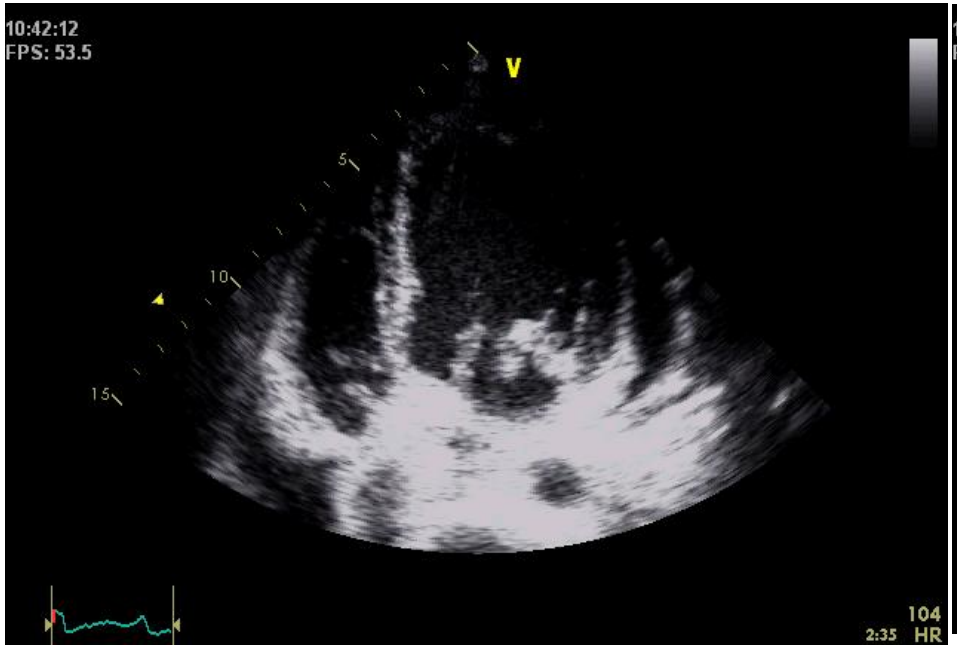
- The patient underwent urgent surgery : A bioprosthesis Carpentier-Edwards Perimount Magna 25mm.
- Reoperation in the postoperative period due to hemorrhage and tamponade.
- Discharged home well. Seen in the out patient clinic 1 year later



PCR valve: Abiotrophia defectiva.

Case 3

- 36 year old woman with mitral valve prolapse
- Presented with a 4 week history of fever, weight loss and anemia.
- Blood cultures gew Streptococcus viridans
- Penicillin was started with immediate response. Afebrile and with negative blood cultures at 48 hours of diagnosis


10:42:12
FPS: 53.5
V
5
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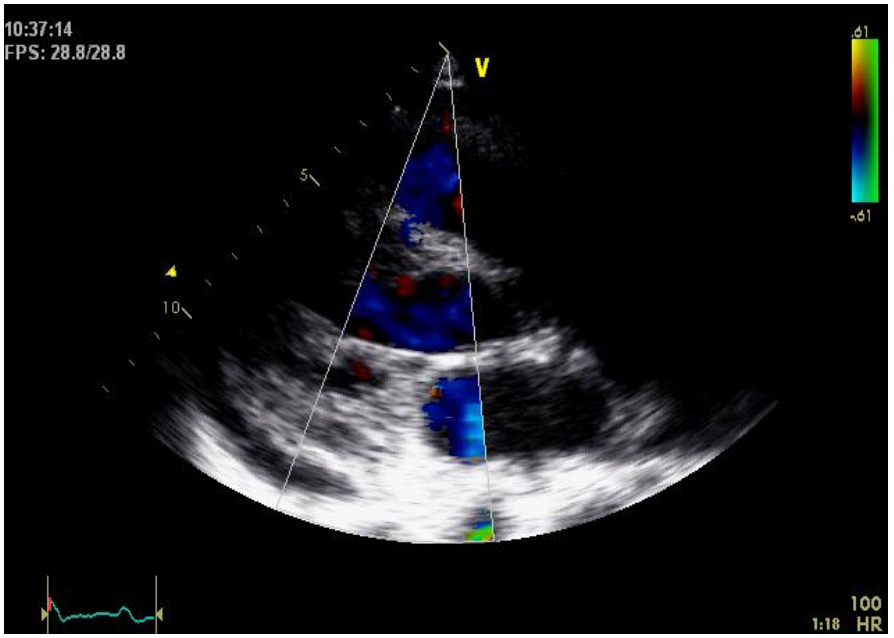
104
2:35 HR


10:37:14
FPS: 28.8/28.8
V
5
10
100
1:18 HR

What would you recommend?

- RMI and valve surgery if embolic events are discovered
- CTscan and valve surgery if embolic events are discovered
- AB treatment and close follow up
- Urgent surgery

Indications for surgery - Native IE

Recommendations: Indications for surgery	Timing	Class	Level
A. HEART FAILURE			
Aortic or mitral IE with severe acute regurgitation or valve obstruction causing refractory pulmonary oedema or cardiogenic shock.	Emergency	I	B
Aortic or mitral IE with fistula into a cardiac chamber or pericardium causing refractory pulmonary oedema or cardiogenic shock.	Emergency	I	B
Aortic or mitral IE with severe acute regurgitation and persisting HF or echo-cardiographic signs of poor hemodynamic tolerance (early mitral closure or pulmonary hypertension).	Urgent	I	B
Aortic or mitral IE with severe acute regurgitation and no HF.	Elective	IIa	B
B. UNCONTROLLED INFECTION			
Locally uncontrolled infection.	Urgent	I	B
Persisting fever and positive blood culture > 7-10 days.	Urgent	I	B
Infection caused by fungi or multiresistant organisms.	Urgent/elective	I	B
C. PREVENTION of EMBOLISM			
Aortic or mitral IE with large vegetations (>10 mm) following one or more embolic episodes, despite appropriate antibiotic treatment.	Urgent	I	B
Aortic or mitral IE with large vegetations (10 mm) and other predictors of complicated course (HF, persistent infection, abscess).	Urgent	I	C
Isolated very large vegetations (>15 mm).	Urgent	IIb	C

European Heart Journal (2009) 30:2369–2413

The NEW ENGLAND JOURNAL of MEDICINE

ORIGINAL ARTICLE

Early Surgery versus Conventional Treatment for Infective Endocarditis

Duk-Hyun Kang, M.D., Ph.D., Yong-Jin Kim, M.D., Ph.D., Sung-Han Kim, M.D., Ph.D., Byung Joo Sun, M.D., Dae-Hee Kim M.D., Ph.D., Sung-Cheol Yun, Ph.D., Jong-Min Song, M.D., Ph.D., Suk Jung Choo, M.D., Ph.D., Cheol-Hyun Chung, M.D., Ph.D., Jae-Kwan Song, M.D., Ph.D., Jae-Won Lee, M.D., Ph.D., and Dae-Won Sohn, M.D., Ph.D.

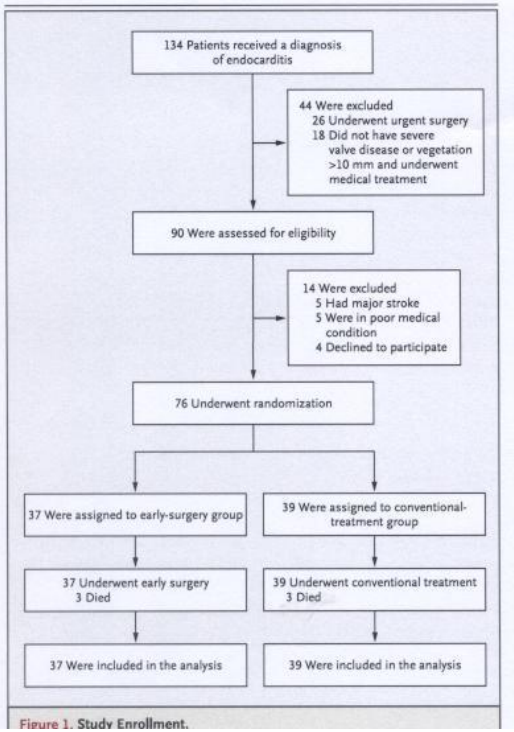


Figure 1. Study Enrollment.

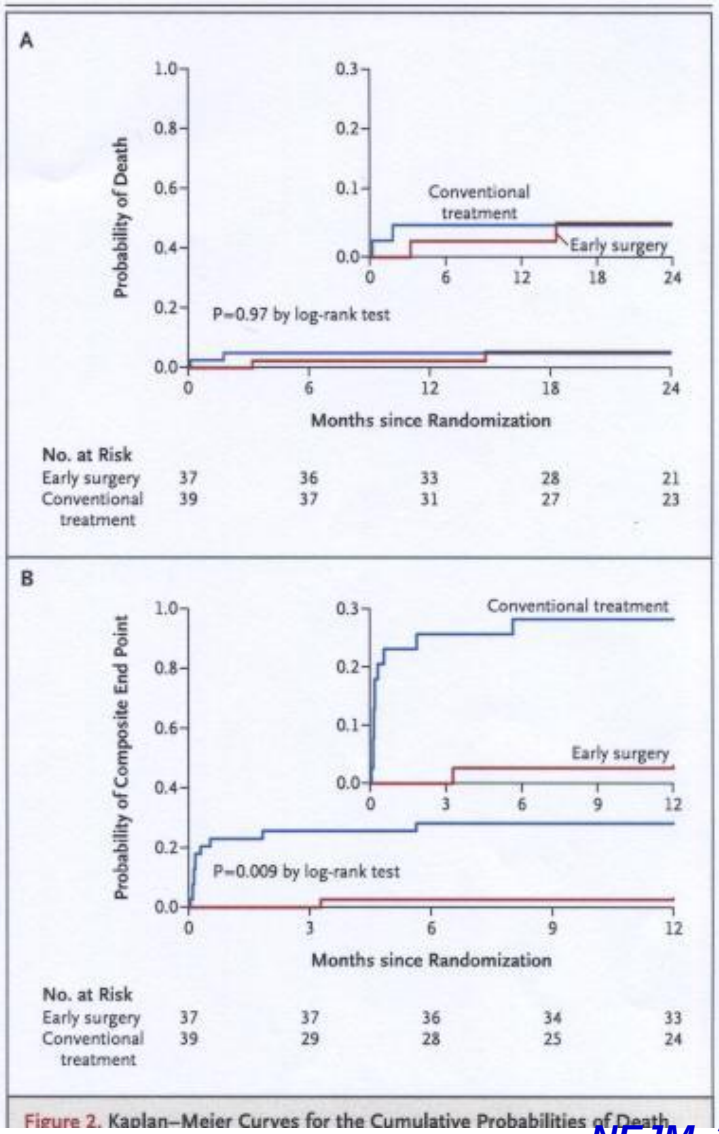


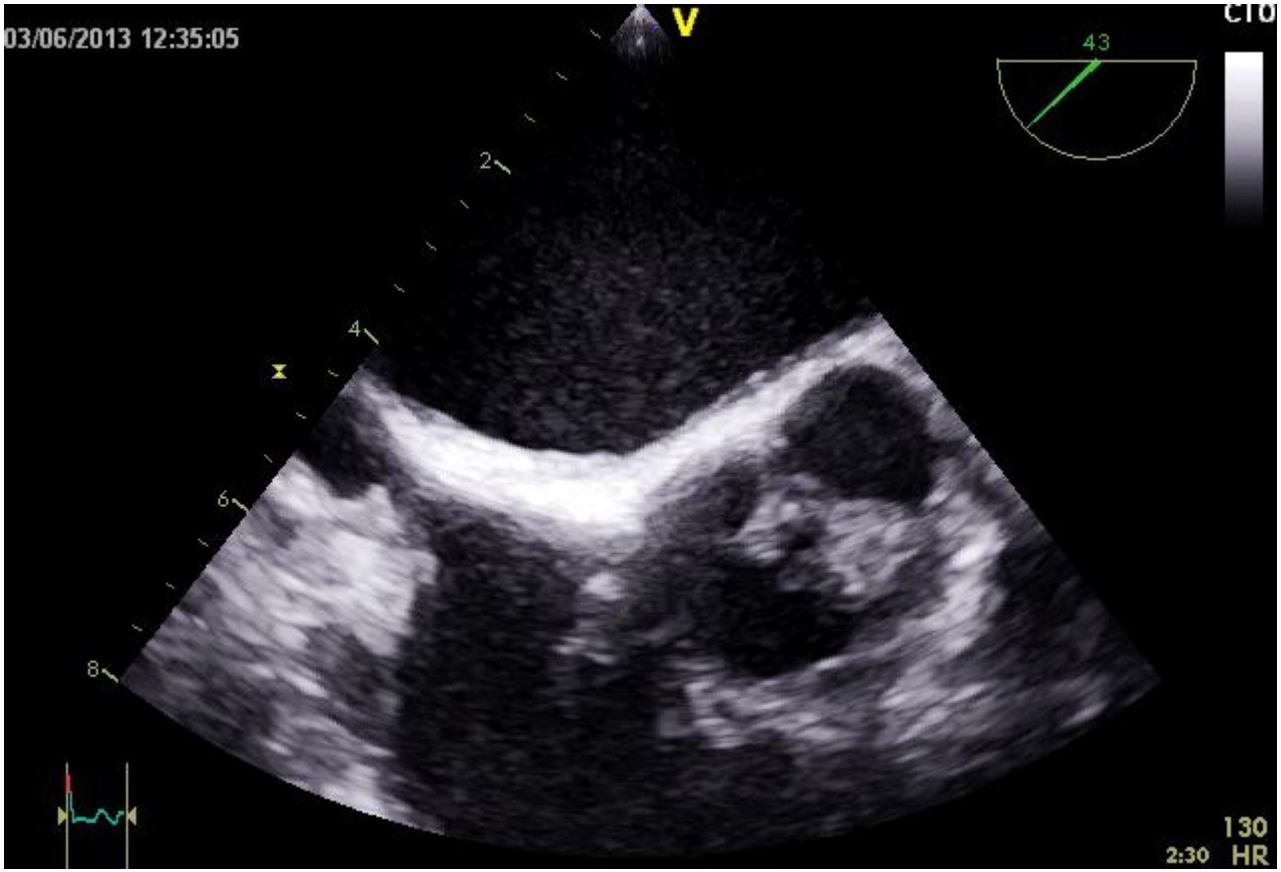
Figure 2. Kaplan–Meier Curves for the Cumulative Probabilities of Death

NEJM, 2012

- There was a discussion in our endocarditis team and finally we decided not to operate.

- The patient had an uneventful clinical course and was disharged with mild-moderate MR

34 year old woman with an antiphospholipid syndrome presented with fever. Blood cultures were taken and an echocardiogram performed



What would you recommend?

1. Start AB with ampicillin and gentamycin

2. Start AB with daptomycin

3. Start AB and urgent surgery

4. Wait. The diagnosis of IE is uncertain. Anticoagulation with heparin

IE was ruled out: BC were negative, PET was negative.

The diagnosis of thrombosis was made and the immage diminished under heparin

Messages

Large vegetations increase embolic risk.

When there are additional causes to consider surgery (S aureus or difficult organisms, severe valve regurgitation) a large vegetation will help to decide early surgery.

When there are no other reasons to consider surgery (a rare situation) the indication is more controversial: To avoid a “possible”embolism the patient faces the surgical risk and in many occasions is left with a prosthesis that will leave him with an embolic risk for life. However every case needs to be carefully discussed and the likelihood of valve repair goes in favour of surgery.

IF SURGEY IS DECIDED SHOULD BE PERFORMED URGENTLY (1 week)