

INFECTIVE ENDOCARDITIS

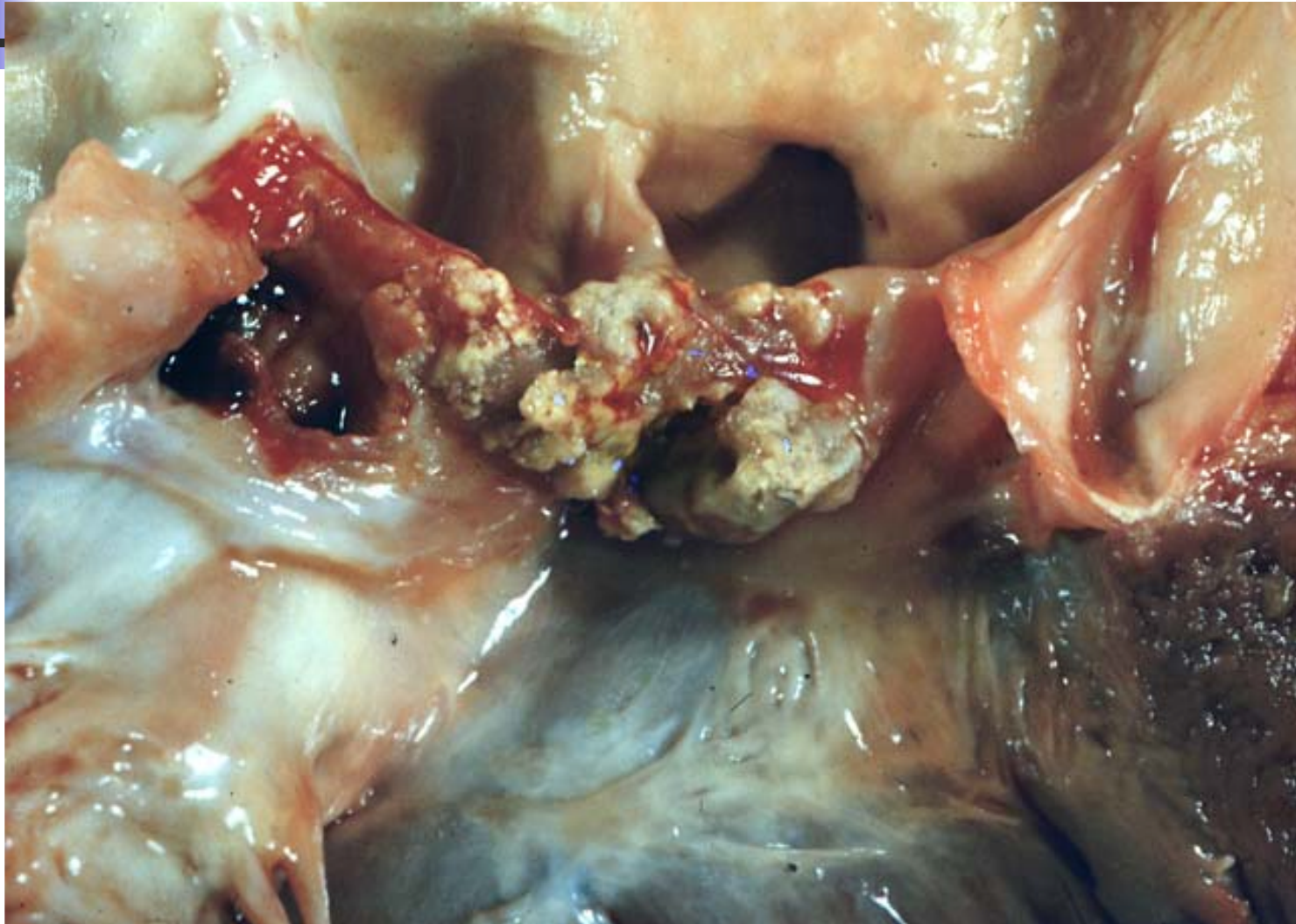
SURGICAL MANAGEMENT

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INFECTIVE ENDOCARDITIS (IE)

SURGICAL TREATMENT



SURGICAL TREATMENT

ACTIVE IE - RECOMMENDATIONS

□ Class I

1. **Heart failure without proper response to drug management.(B)**
2. **Persistent infection after 7 to 10 days of proper therapy. (B)**
3. **Perivalvular abscess (B)**
4. **Fungal endocarditis (B)**
5. **Early prosthetic endocarditis (B)**
6. **Endocarditis in pacemaker (B)**

□ Class II

1. **Recurrent embolism (> 2 episodes) (C)**
2. **Mobile vegetations greater than 10 mm. (B)**
3. **Splenic abscess (B)**

□ Class III

1. **Proper antibiotic response.(B)**

INFECTIVE ENDOCARDITIS

SURGICAL INDICATIONS

Very urgent indication (in the same day)

EVIDENCE

- | | | | |
|----|---|---|---|
| 1. | Acute aortic insufficiency (AI) with early closure of mitral valve. | A | |
| 2. | Aneurysm rupture of the sinus of Valsalva in the right cavity. | A | |
| 3 | Rupture in pericardium. | | A |

Urgent indication (in 1 or 2 days)

- | | | | |
|----|--|---|---|
| n | Valve obstruction. | A | |
| n | Unstable prosthesis. | A | |
| 1. | Acute AI or mitral valve insufficiency (MVI) with NYHA III-IV heart failure. | A | |
| 2. | Septal perforation. | A | |
| 3. | Signs of annular or aortic abscess, aneurysm, or pseudo aneurysm of the aortic sinus, formation of fistulae, or new conduction disorder. | | |
| 4. | Embolism + mobile vegetation > 10 mm+antibiotic treatment < 7-10 days. | | B |
| n | Mobile vegetation > 15 mm + proper antibiotic treatment < 7-10 days | C | |
| n | No efficient antimicrobial therapy available. | A | |



INFECTIVE ENDOCARDITIS

SURGICAL INDICATIONS

Indication for programmed cardiac surgery (the sooner the better).

1. Staphylococcal endocarditis of prosthetic valve. B
2. Early endocarditis of prosthetic valve (< 2 months after the intervention). B
3. Signs of progressive escape at the basis of a prosthetic valve. A
4. Signs of valve dysfunction and persistent infection after 7-10 days of proper antibiotic treatment (with fever or bacteriemia, as long as there is no other cause of infection).
A
5. Fungal endocarditis caused by true fungus A
6. Fungal endocarditis caused by a yeast B
7. Infection by germs difficult to treat. B
8. Vegetation increasing in size during the antibiotic therapy > 7 days. C

INFECTIVE ENDOCARDITIS

Surgical treatment

Heart failure

- ❑ **Most frequent indication of surgical treatment in 22 to 71% of cases.**
- ❑ ***Acute* HF (mitral chordae rupture, valve perforation, both in native or biological, fistulae, or dehiscences).**
***Gradual* HF, in spite of antibiotic treatment**
- ❑ **Operative mortality: no HF 6-11% .
with HF 17-33 %**

The best surgical treatment results occur in HF of recent onset and operated at 4 days in average.

INFECTIVE ENDOCARDITIS

Surgical treatment

Periannular abscesses

- ❑ **TEE S: 76% to 100% E: 95%**
- ❑ **10 to 40% IE native valve.**
- ❑ **More frequent in Aortic valve and 56 to 100% pulmonary valve disease.**
- ❑ **If another cavity is ruptured, a fistula appears.**
- ❑ **If it penetrates the conduction system: complete atrioventricular block. Positive predictive value: 77% for abscess, S:42%**
- ❑ **Early surgery: with 30% of mortality and 100% those not operated.**
- ❑ **Staphylococcus aureus found in 73% of lethal cases.**
- ❑ **A small group could be treated with drugs, with strict control.**

INFECTIVE ENDOCARDITIS

Surgical treatment

Vegetations

- It is not a surgical indication *per se*.
 - Accumulated incidence from 10 to 50% (pre and post treatment)
 - Responsible for 25% of lethal cases
 - 75% of embolisms occur before starting the antibiotic treatment.
 - CNS affected in 50 to 65% of all embolisms.
 - Risk factors: 1-S. Aureus 2-advanced age 3-mitral location
4-history of embolism 5-short-duration symptoms.
- They predict embolic vegetations > 10 mm (60%) or mobile (62%) and when > 15 mm and very mobile (83%)
- Surgical treatment indication: 2nd embolism during 10-14 days of treatment.

SURGICAL TREATMENT

RIGHT ENDOCARDITIS

Specific indication.

- 1- Microorganisms difficult to treat or eradicate: *Pseudomonas aeruginosa* , *S. aureus* or fungal in spite of proper antimicrobial treatment for seven days.

SURGICAL TREATMENT

Predictors of results

- **Pre-operative condition of the patient.**
- **Interval since diagnosis to surgical treatment.**
- **Antimicrobial treatment.**
- **Moment of surgical intervention.**
- **Associated conditions.**
- **Extension of local lesions.**
- **Surgical techniques.**
- **Intra and post-operative management.**



SURGICAL TREATMENT

MORTALITY

- Different series reveal mortality between 8% and 16%.
- Actuarial survival of 75% and 61% at 5 and 10 years respectively.
- Age, functional class (NYHA), renal failure and aggressive germ (*S. aureus*) are factors predicting mortality.

SURGICAL TREATMENT

EIRA II

Mortality predictors

Multiple logistic regression analysis

		OR (CI 95%)	P
▪	Age > 65 y.o.	2.1 (1.1-3.9)	0.024
▪	Congestive HF *	5.9 (3.1- 10)	< 0.001
▪	Septic shock *	25.1 (0.0-62)	< 0.001
▪	Hepatic insufficiency	12.2 (1.9-76)	0.008
▪	Persistent hyperthermia	2.3 (1.1-4.5)	0.014
▪	Alteration of consciousness state	1.9 (0.9-3.7)	0.075
▪	Stroke	2.3 (0.9-5.4)	0.066